

(Arts & Science, E.C.S. & B.C.A.) Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) (Affiliated to P.A. H. Solapur University)

Email: vidnyanms@yahoo.co.in

Website : www.vmssangola.org

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

☎ Off. (02187) 220508 Mob. No. 9850792244



Ref. No.

M.A.Ph.D. (Geography)

Principal: Dr. S.M.Mulani

Date:

/20



Best Practice: 01

1. Title of the Practice: Organization of International/National Conference/Seminars.

2. Objectives of the Practice

To develop a research culture on the campus.

To provide a platform for researchers to exhibit their research work for the best career development.

3. To give better exposure to final year students to interact with researchers at the national as well as international level

3. The Context

Organization of National and international conferences or seminars at college is a difficult task because of lack of funds and unavailability of resource persons.

4. The Practice

At the beginning of the academic year, the academic calendar is published by the Principal and IQAC coordinator through media and website. The schedule of conferences/seminars is to be mentioned in the academic calendar. The Head of respective departments is informed by a notice regarding the organization of conferences/seminars.

Coordinator, IQAC

Dr. Ganpatrao Deshmulth Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

Dr. Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur





DR. GANPATRAO DESHMUKH MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)
Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)
(Affiliated to P.A. H. Solapur University)

Principal : Dr. S.M.Mulani M.A.Ph.D. (Geography) ☎ Off. (02187) 220508 Mob. No. 9850792244

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te:

A respective department prepares a plan for conference/seminars and organizes the conference/seminars by conducting meetings. Respective departments advertise the flyers of conferences/seminars amongst researchers. In conferences/seminars, a number of interactive sessions are organized, and fruitful discussions are made.

5. Evidence of Success made.

Due to the organization of national/international conferences/seminars, a research culture is developed in the faculty some faculty members are participating in such events and publish their work as oral or poster presentations. During discussion sessions, final-year students participate in interactions with resource persons, so they have self confident to achieve something.

- 6. Problems Encountered and Resources Required Problems: Some researchers expect offline mode for the conduction of this activity. Most students are not aware of importance of conferences and seminars.
- 7. **Resources required:** A well-equipped audio-video system is an essential requirement. A good quality resource person should spend some time delivering lectures. Participants should have sufficient internet facilities, good mobile or Laptops, etc.
- 8. Notes (Optional): Depending on the expectations of the participants, it is possible to organize the event through a hybrid mode.

Dr. S.S. Dhasade Coordinator,IQAC

Dr. Ganpetrao Deshmukh Mahavidyalaya, Sangola Tal.Sangola Dist. Solapur Dr.Ganpetrao Deshmukh Mahavidyalaya Sangola Tal, Sangola Dist, Solapur





DR. GANPATRAO DESHMUKH MAHAVIDYALAYA SANGOLA

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Date:

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Online as well as offline. Apart from the resource person's speech, participants' presentation and interaction; everything else is a waste of money.

Contact Person: Dr. Dhasade S.S.

Coordinator IQAC

09422652388

Coordinator, IQAC

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

Dr. Ganpetrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur





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3.2.2 - Number of workshops/seminars conducted on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship during the year-2022-23

This year nine international/national conferences were organized by the different departments and one IPR workshop is also organised.

Year	Name of the workshop/ seminar	Number	Date From -
		of	To
		Particip	
		ants	1 10
2022-23	International e-Conference on Recent Trend in	150	03/05/2023
	Nano-Materials and Its Applications-2023 (RTNA-		To
	2023) DAY-01		04/05/2023
2022-23	International e-Conference on Recent Trend in		
	Nano-Materials and Its Applications-2023 (RTNA-		,
	2023) DAY-02	5	
2022-23	International conference on Recent Trends,	162	08/072023 To
	Challenges and issues in Social Science & Languages		08/07/2023
	2023		
2022-23	One day National Seminar on, Natural Resources	110	27/04/2023To
	Management and G20		27/04/2023
2022-23	National webinar on Python for digital Image	72	30/05/2023
	processing		To
			30/05/2023

Dr. S.S. Dhas Coordinator, IQAC

Dr. Ganpatrao Deshmulch Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

Dr. Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur







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Date:

1



2022-23	National Webinar on "The Challenges before	144	25/05/2023
	Indian Democracy"		To
			25/05/2023
2022-23	National conference on Formation of Maharashtra	167	05/06/2023
2022 20		-	To
			05/06/2023
2022-23	National Webinar on "Water Management in	207	27/06/2023
2022-23	Drought Prone Area"		To
	Diougherrone		27/06/2023
2022-23	National online conference on Statistics and its	156	06/07/2023
2022 23	Applications-2023	2	To 06/07/023
2022-23	National webinar on "Modernism and	122	29/05/2023
2022 25	Postmodernism in Literature	-	To
	1 Ostmodel money		29/05/2023
2022-23	One Day Webinar On Awareness On Intellectual	146	27/04/2023
2022-23	Property Rights, Patents For Aspiring Minds		To
	Troperty rughts, 1 weeks 2 32 321		27/04/2023
2022-23	Workshop on occasion of Science day-2023	120	04/03/2023
2022-23	Workshop on occusion of a second	-	To
			04/03/2023

Dr. S.S. Dhasade Coordinator, IQAC

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

Principal

Dr.Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur



Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organizes an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023) Dated on May 03-04, 2023

चर्चासत्राचा चा अहवाल

डॉ. गणपतराव देशम्ख महाविद्यालय सांगोला येथील भौतिकशास्त्र विभाग आणि अंतर्गत गुणवत्ता हमी कक्ष यांच्या संयुक्त विद्यमाने दरवर्षीप्रमाणे शैक्षणिक वर्ष 2022-23 मध्ये आंतरराष्ट्रीय दर्जाच्या चर्चासत्राचे आयोजन करण्यात आले होते. सदरचे चर्चासत्र दोन दिवसाचे आयोजिले होते. भौतिकशास्त्र विभागामार्फत आंतरराष्ट्रीय दर्जाचे चर्चासत्र तीन आणि चार मे 2023 रोजी संपन्न झाले. चर्चासत्रासाठी प्रमुख वक्ते म्हणून डॉ. एम पी सूर्यवंशी, डॉ. सी डी बाथुला आणि डॉ. महेश शिंदे हे लाभले. या चर्चासत्रामध्ये एकूण दीडशे संशोधक सहभागी झाले होते. यामध्ये भारत आणि भारताबाहेरील सिडनी, साउथ कोरिया, यूएस इत्यादी देशातील संशोधक सहभागी होते. दीडशे पैकी एकूण 120 संशोधक विद्यार्थी सहभागी झाले होते. सदरच्या चर्चासत्रामध्ये ब्रिज भाषक म्हणून पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ सोलापूर येथील प्राध्यापक डॉ. व्हीं बी पाटील हे लाभले. सदरच्या चर्चासत्रामध्ये चार प्रमुख व्यक्तींनी चार सत्रामध्ये आपले व्याख्यान देऊन पदार्थ विज्ञानाचे महत्त्व सहभागींना उदाहरणासह पटवून दिले. सहभागी संशोधकांनी आपले संशोधनकार्य पावर पॉईंट प्रेजेंटेशन च्या माध्यमातून सादर केले. सदरचे पावर पॉइंट प्रेझेंटेशन सादरीकरण पाहणी साठी डॉ. सागर माने (कोरिया) आणि डॉ. शुद्धोधन कदम यांचे योगदान लाभले.

सदरचे आंतरराष्ट्रीय चर्चासत्र आयोजित करत असताना विभागातील सर्व शिक्षक शिक्षकेतर कर्मचारी तसेच महाविद्यालयातील सर्व प्राध्यापक यांनी सहभाग घेऊन चर्चासत्र स्रळीतपणे पार पाडण्यासाठी प्रयत्न केले. चर्चासत्रासाठी निरोप समारोपप्रसंगी प्रम्ख पाह्णे म्हणून प्राध्यापक राजाराम एस माने (एस आर टी एम यू नांदेड) हे लाभले. सदरचे चर्चासत्र यशस्वीरित्या पार पाडले बद्दल विभागातील सर्व शिक्षक शिक्षकेतर कर्मचारी यांचे प्राचार्य आणि संस्थेमार्फत अभिनंदन केले.

विज्ञान महाविद्यालय, सांगोला Vidnyan Mahavidyalaya, Sangola Tal -Sangola Dist -Solapur

Date: 06th April, 2023

Department of Physics is planning to organize an International conference on recent trends in Nano-materials and Its applications through online mode. For the purpose of discussion and planning of organization of International conference, a meeting was scheduled on Thursday, 6th April, 2023 at Staff Room, Department of Physics on 11:00 am. The following members were present.

Sr. No.	Name of Faculty	Designation	Signature
01	Dr. Navale B. B.	HOD, Physics	F198
02	Dr. Dhasade S. S.	Coordinator, IQAC	Joseph.
03	Dr. Thombare J. V.	Assistant Professor	Thombans
04	Prof. Kambale A. M.	Assistant Professor	towards.
05	Dr. Bandgar D. K.	Assistant Professor	Bangs.

Notice

Date: 05/04/2023

Dear all faculty members are hereby inform you that, we are planning to organize an International conference on recent trends in Nano-materials and it's applications through online mode. For the purpose of discussion and planning of organization of International conference, I invite you to attend a meeting scheduled on Thursday, 6th April, 2023 at Staff Room, Department of Physics on 11:00 am.

Head Department of Physics Vidnyan Mahavidyalaya, Sangola.

Sr. No. Name of Faculty Sign

OI. Dr. Dhasade S.S. Thom Large

O2. Dr. Thombare J.V. - Thomban

O3. Prot. Kamballe A.M. Hommban

O4. Dr. Bandgaz D.K. Borrdys

Date: 08th April, 2023

To, Principal, Vidnyan Mahavidyalaya, Sangola.

Subject: Regarding International Conference...

Dear sir,

The subject mentioned above, I may please inform you that Department of Physics is planned to organize an "International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023)" during "03th -04th May, 2023". The distribution of work is as follows:

Sr. No.	Name of Faculty	Designation
01	Dr. Navale B. B.	HOD, Physics
02	Dr. Dhasade S. S.	Organizing Secretary
03	Dr. Thombare J. V.	Convener, RTNA-2023
04	Prof. Kambele A. M.	Member
05	Dr. Bandgar D. K.	Member

So, herewith I requesting you

i) To allow to organize RTNA-2023 &

ii) To communicate as early as possible with Punyashlok Ahilyadevi Holkar Solapur University, Solapur for permission to use logo and name of university on brochure and participants certificates.

Thanking You,

Enclosure: Minutes of meeting

Department of Physics
Vidnyan Mahavidyalaya, Sangola
Tal -Sangola Dist.-Solapur

Date: 06th April, 2023

Minutes of Meeting

Department of Physics is planning to organize an International conference on recent trends in Nano-materials and Its applications through online mode. For the purpose of discussion and planning of organization of International conference, a meeting was held on Thursday, 6th April, 2023 at Staff Room, Department of Physics on 11:00 am. The following decisions were taken.

 Since last two years, Department of Physics is organizing an International conference on the theme of Nano-materials and its applications. So, on discussion, it is decided that the title of the conference is as "International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023)".

2) As per discussion, the duration of the international conference is finalized as "03th -04th May, 2023".

3) As per discussion, the Convener and Organizing Secretary of RTNA-2023 are selected as Dr. Thombare J. V. and Dr. Dhasade S. S., respectively.

4) It is decided that to communicate all the resource persons as early as possible via email.

It is decided that to collect the research article and to publish a conference proceeding.

 It is decided that to organize oral presentation session during RTNA-2023.

7) It is decided that to prepare corrected brochure and launch it on social media and other forms like telegram group, email etc.

8) It is decided that if any issue related to RTNA-2023, a special meeting will be called.

9) At the end of meeting, vote of thanks was shared by Prof. Kambale A. M.

Name of Faculty	Designation	Signature
Dr. Navale B. B.	HOD, Physics	BAR8
Dr. Dhasade S. S.	Organizing Secretary	Sant
Dr. Thombare J. V.	Convener, RTNA-2023	Thomband
Prof. Kambale A. M.	Member	*annubse
Dr. Bandgar D. K.	Member	Bandy
	Dr. Navale B. B. Dr. Dhasade S. S. Dr. Thombare J. V. Prof. Kambale A. M.	Dr. Navale B. B. HOD, Physics Dr. Dhasade S. S. Organizing Secretary Dr. Thombare J. V. Convener, RTNA-2023 Prof. Kambale A. M. Member

Date: 08th April, 2023

To, Registrar, Punyashlok Ahilyadevi Holkar Solapur University, Solapur.

Subject: Regarding International Conference ...

Dear sir/madam,

The subject mentioned above, I may please inform you that Department of Physics, Vidnyan Mahavidyalaya, Sangola is planned to organize an "International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023)" during "03th -04th May, 2023". For RTNA-2023, we are circulating brochure to all higher educational institutes and proving certificates to all registered participants. So, herewith I requesting you

- i) To allow to organize RTNA-2023 &
- ii) To permit us to use logo and name of university on brochure and participants certificates.

Thanking you,



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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

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Ref. No. 16/2023.24.

Date: 11 104 12023

To, Registrar, Punyashlok Ahilyadevi Holkar Solapur University, Solapur.

Subject: Regarding International Conference ...

Dear sir/madam,

The subject mentioned above, I may please inform you that Department of Physics, Vidnyan Mahavidyalaya, Sangola is planned to organize an "International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023)" during "03th -04th May, 2023". For RTNA-2023, we are circulating brochure to all higher educational institutes and proving certificates to all registered participants.

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VIdnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur



पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ, सोलापूर

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

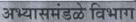
केगांव, सोलापूर-४१३ २५५, महाराष्ट्र (भारत)

दूरध्वनी क्र. ०२१७-२७४४७७८ / ११३/११४ (११ लाईन्स), फॅक्स : ०२१७-२३५१३००

संकेतस्थळ: http:sus.ac.in

ई-मेल : registrar@sus.ac.in





जा.क्र. पुअहोसोविसो/अमंवि/२०२३/ 2 5 6 4

दिनांक:

2 1 APR 2023

प्रति

मा. प्राचार्य

विज्ञान महाविद्यालय, सांगोला

विषय: महाविद्यालयामार्फत आंतरराष्ट्रीय ऑनलाईन कार्यशाळा घेण्यास परवानगी देणेबाबत..

संदर्भ : १) आपले जा.क्र. १६/२०२३-२४ दिनांक ११/०४/२०२३ रोजीचे पत्र.

२) अभ्यासमंडळे विभागाची दिनांक १५/०४/२०२३ रोजीची मान्य टिपणी.

महोदय,

उपरोक्त विषयास अनुसरुन आपणास प्राप्त आदेशान्वये कळविण्यात येते की, आपण संदर्भ क्र. ०१ अन्वये कळविल्यानुसार खालील तक्त्यातील नमूद ऑनलाईन आंतरराष्ट्रीय कार्यशाळेस विद्यापीठाचा लोगो व नाव वापरण्यास सदरहु पत्रान्वये मान्यता देण्यात येत आहे.

अ.क्र.	विभागाचे नाव	कार्यशाळेचा विषय	कार्यशाळेचा दिनांक	स्तर
1.	Department of	"International e-Conference on Recent	03/05/2023	International
	Physics	Trends in Nano-Materials & Its	to	Level
		Applications-2023 (RTNA-2023)"	04/05/2023	

परंतु प्रस्तुत विद्यापीठाचा लोगो व नाव वापरण्याची परवानगी ही या एका कार्यशाळेपुरती मर्यादित असून व सदर कार्यशाळेस प्रस्तुत विद्यापीठाकडून कोणतेही आर्थिक सहाय्य देता येणार नाही, याची कृपया नोंद घ्यावी.

उपकुलसचिव

प्रत: मा. विभाग प्रमुख, I. Q. A. C. पुण्यश्लोक अहिल्यादेवी होळकर सोलापुर विद्यापीठ, सोलापुर.



Vidnyan Mahavidyalaya, Sangola

Tal-Sangola, Dist-Solapur, MH-413307, India.

(Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC)Organizes

International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023)

(Dated on May 03-04, 2023)

Resource Persons



Prof. V. B. Patil.
Punyashlok Ahilyadevi Holkar
Solapur University, Solapur



Dr. M. P. Suryavanshi University of New South Wales, Sydney



Dr. C. D. Bathula Dongguk University, South Korea



Dr. Mahesh Shinde Twelve Benefit Corporation, California, USA

Chief Patron

Mr. Chandrakant Deshmukh
(Director, STSSPM)

Mr. Babanrao Jankar (Director, STSSPM) Dr. Ashok Shinde

(Director, STSSPM)

Mr. Vitthalrao Shinde (Secretary, STSSPM) Dr. Aniket Deshmukh (Director, STSSPM)

Mr. Avadhoot Kumathekar
(Director, STSSPM)

Organizing Committee

Mr. Ramchandra Khatkale
(Director, STSSPM)

Mr. Dipak Khatkale (Director, STSSPM)

Mr. Jayant Jankar (Director, STSSPM)

Prof. S. M. Mulani (Principal)

Mr. A. M. Kamble (Treasurer)

Dr. B. B. Navale (HOD, Physics)

Dr. D. K. Bandagar

Dr. S. S. Dhasade (Coordinator, IQAC)

Dr. S. M. Mane (Member)

Dr. J. V. Thombare (Convener, RTNA-2023)

Dr. V. M. More (Member)

About registration and Conference Proceeding

- E-Certificate to be provided to those who will register, attend and fill the feedback form.
- Last date of registration: 01 May, 2023.
- Registration link:

 $\underline{https://forms.gle/vP17qFJfWk6oTxaWA}$

- Email: 2023rtna@gmail.com;
- Conference date: May 03-04, 2023
- Paper Publication: Research papers will be published in UGC approved Journal Number 640011; International Peer reviewed Thomson Reuters, open access Scientific Journal. Online ISSN: 2395-602X; Print ISSN: 2395-6011; DOI: 10.32628; Index Copernicus: 49.58; Individual certificate (soft copy) to all authors.
- Contact No. 9765851171, 9890776585, 9422652388, 9284555463, 9860477067, 9673922572, 9834287530

-: Note to Registered Participants:-

The detailed technical program, Zoom app link for joining, instructions and other details will be informed via Whatsapp group, Telegram group and E-mail of registered Participants only.

• Registration fee submission details: The registration fees along with paper publication charges may be paid online/Paytm/Pay Phone/ Internet Banking to

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Fee details:

Category	Registration	Paper Publication	
	fee	Charges	
Student	Rs. 100/-	Rs. 800/-	
Academician	Rs. 200/-	Rs. 800/-	
Industrialist	Rs. 1000/-	Rs. 800/-	
Foreign Delegates	USD 20	USD 50	

Submission of Papers: Interested Authors are requested to submit full-length manuscript of research papers in MS-Word including Paper Title, Names of all authors and e-mail address of corresponding authors. The font should be Times New Roman, Size-12. The Maximum length of manuscript is limited to four pages. Paper sent by e-mail to Conference E-mail address: 2023rtna@gmail.com.

RTNA-2023 Registered Participants

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(Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organizes an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023

(RTNA-2023) Dated on May 03-04, 2023, Conference E-mail: 2023rtna@gmail.com

-: Program Schedule: -

Day 1st: Wednesday Date: May 03, 2023

Session-I: Inauguration of Conference; Session Coordinator: Dr. J. V. Thombare

Sr. No.	Time in IST*	Description/Name of Program	Name		
01	10:00 am to 10:02 am	Introduction	Dr. J. V. Thombare Convener		
02	10:02 am to 10:05 am	Welcome and Resource person's Introduction	Dr. S. S. Dhasade Coordinator, IQAC		
03	10:05 am to 10:50 am	Keynote Address	Resource Person: Prof. (Dr.) V. B, Patil Punyashlok Ahilyadevi Holkar Solapur University, Solapur		
04	10:50 am to 10:55 am	Presidential Address	Dr. S. M. Mulani Principal		
05	10:55 am to 11:00 am	Vote of thanks	Dr. B. B. Navale, Head		
	Session	ı-II: Invited Talk; Session Coordinat	tor: Dr. J. V. Thombare		
06	11:00 am to 11:45 am	Resource Person: Dr. C. D. Bathula. Dongguk University, South Korea	Chairperson: Dr. P. A. Bansode Sangola Mahavidyalaya, Sangola.		
07	7 11:45 am to Discussion 11:50 am				
	11:50 am to 12:05 pm : Short break				
	Session-III: Oral Presentations; Session Coordinator: Mr. B. B. Navale				
08	12:05 pm to 12:35 pm	OP-01 to OP-05	Chairperson: Dr. S. M. Mane, Dongguk University, South Korea		

Zoom meeting link for joining: https://us06web.zoom.us/j/6429496122?pwd=nUZ7I8dENdfgUfswYbQLb3btLqPdZX.1

Day 2nd: Thursday Date: May 04, 2023

Session-IV: Invited Talk; Session Coordinator: Dr. S. S. Dhasade

10	10:00 am to 10:45 am 10:45 am to	Resource Person: Dr. M. P. Suryavanshi. University of New South Wales, Sydney	Chairperson: Dr. R. A. Bugad, Sangola Mahavidyalaya, Sangola Discussion		
	10:50 am				
	Session-V: Invited Talk; Session Coordinator: Dr. J. V. Thombare				
11	10:50 am to 11:35 am	Resource Person: Dr. Mahesh Shinde. Twelve Benefit Corporation, California, USA	Chairperson: Dr. S. R. Kulal, Raje Ramrao Mahavidyalaya, Jath		
12	11:35 am to 11:40 am		Discussion		
Session-VI: Poster Presentation; Session Coordinator: Dr. B. B. Navale					
13	11:40 am to 12:10 pm	PP-01 to PP-05	Chairperson: Dr. S. N. Kadam Vidnyan Mahavidyalaya, Sangola		
14					
Session-VII: Valedictory Function; Session Coordinator: Mr. A. M. Kamble					
15	12:15 pm to 12:20 pm	Conference Overview	Dr. J. V. Thombare Convener		
16	12:20 pm to 12:30 pm	Feedback from Participants	-1		
17	12:30 pm to 12:45 pm	Valedictory address	Chief Guest: Prof. (Dr.) R. S. Mane Swami Ramanand Teerth Marathwada University, Nanded		
18	12:45 pm to 12:50 pm	Presidential remark	Dr. A. V. Shinde, Director, STSSPM Sangola		
19	12:50 pm to 12:55 pm	Vote of Thanks	Dr. B. B. Navale Head, Dept. of Physics		

International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023)

Dated on May 03-04, 2023

Oral Presentation (Only selected presentations)

Day 1 st : 03 May, 2023					
	Chairperson: Dr. S. M. Mane				
Sr. No.	Name of Author	Title of Paper	Institute		
OP-01	Mr. Parmeshwar Tanaji Lokhande	Solar light active Ni-doped barium ferrichromites synthesized by solgel method and their excellent photocatalytic activity	Walchand College of Arts and Science, Solapur.		
OP-02	Gaikwad Swati Sainath	Green approach for synthesis and characterization of NiO nanoparticles mediated by morus alba plant leaves extract	Karmveer Shantarambapu KondajiWavare, Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik		
OP-03	Shaikh Sabanaaz Aminuddin	Beta vulgaris plant extract phytochemicals stabilized synthesis and characterization of NiO nanoparticles	Karmveer Shantarambapu KondajiWavare, Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik		
OP-04	Katore Kajal Anil	Lawsonia inermis leaves extract mediated synthesis and characterization of CdS quantum dots	Karmveer Shantarambapu KondajiWavare, Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik		
OP-05	Choukhande Vanita Padmanna	Development and Validation of RP-HPLC Method for the Estimation of Mesalamine in Bulk and Formulation.	D.S.T.S. Mandal's College of Pharmacy, Solapur		
OP-06	Aniket Sapkal	Smoking Status in Young Generation: A Review of Available Reports.	D.S.T.S. Mandal's College of Pharmacy, Solapur		

Note:

- 1) Authors are hereby informed that the time allotted to power point presentation is only 7 minutes (5 minute for presentation and 2 minutes for discussion).
- 2) During technical session (oral presentations), power point presentations should be ready with you only (presenting author).

International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023)

Dated on May 03-04, 2023

Oral Presentation (Only selected presentations)

	Day 2 nd : 04 May, 2023			
	Chairperson: Dr. S. N. Kadam			
Sr. No.	Name of Author	Title of Paper	Institute	
OP-01	Mr. Bhalchandra Kashinath Mandlekar	Tungsten Oxide Thin Film Synthesized by Electrodeposition for Electrochromic Applications.	Institute of science Mumbai	
OP-02	Derle Sonali Ashok	Biosynthesis and characterization ZnO-CuO nanocomposite mediated by Aegle Marmoles leaves extract	Karmveer Shantarambapu KondajiWavare, Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik	
OP-03	Mishra Shraddha Rajnarayan	Biosynthesis and characterization of Mn ₃ O ₄ nanoparticles mediated by Madhuca Longifolia plant leaves extract	Karmveer Shantarambapu KondajiWavare, Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik	
OP-04	Preeti M Patil	Applications of Doped ZnO nanocomposites	Gulbarga University Karnataka	
OP-05	Ankush Prakash Pawar	Analytical Method Development and Validation of RP-HPLC Method for the Estimation of Methocarbamol in Bulk and Formulation	D.S.T.S. Mandal's College of Pharmacy, Solapur	

Note:

- 1) Authors are hereby informed that the time allotted to power point presentation is only 7 minutes (5 minute for presentation and 2 minutes for discussion).
- 2) During technical session (oral presentations), power point presentations should be ready with you only (presenting author).

रासायनिक आणि भौतिक प्रक्रियेतून तयार झालेल्या अति सूक्ष्म कणांचे पदार्थ विविध गुणधर्मासाठी परिचित: डॉ.व्ही.बी.पाटील

सांगोला (प्रतिनिधी):- पदार्थ तयार होत असताना त्यांची वेगवेगळी संरचना निर्माण होण्यासाठी, अतिसूक्ष्म कणांचे तयार झालेले पदार्थ दैनंदिन जीवनातील उपयोगासाठी नेहमीच वैशिष्ट्यपूर्ण आहेत, असे प्रतिपादन, विज्ञान महाविद्यालय सांगोला येथील भौतिकशास्त्र विभागामार्फत आयोजित केलेल्या आंतरराष्ट्रीय चर्चासत्राच्या स्वागत समारंभ प्रसंगी, ब्रीजभाषक म्हणून प्रा.डॉ.व्हि.बी. पाटील यांनी प्रतिपादन केले.

विज्ञान महाविद्यालय सांगोला येथील भौतिकशास्त्र विभागाच्या वतीने दोन दिवसाचे आंतरराष्ट्रीय दर्जाचे चर्चासत्र आयोजन केले असून, या चर्चासत्राचा प्रारंभ तीन मे रोजी सुरू आला. या कार्यक्रमासाठी ब्रिजभाषक म्हणून पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ सोलापूर येथील माजी प्र. कुलगुरू प्रा.डॉ.पाटील सर हे लाभले, तर प्रमुख वक्ते म्हणून डॉ.सी.डी.भातुला, साऊथ कोरिया, हे लाभले.

महाविद्यालयातील आयोजित केलेल्या आंतरराष्ट्रीय चर्चासत्राचा मुख्य उद्देश सांगून अवकाशात तयार होणाऱ्या पदार्थामुळे पावसाची निर्मिती कशी होते, याची प्रचिती महाविद्यालयाचे प्राचार्य डॉ.सिकंदर मुलाणी सर यांनी अध्यक्षीय मनोगतातून व्यक्त केली.

पदार्थांची निर्मिती होत असताना संरचनेतील बदलामुळे पदार्थापासून तयार होणाऱ्या उपक्रमांमध्ये त्याची काम करण्याची क्षमता निश्चितपणे बदलते असे संशोधनपर कार्य सादर करून, समाज उपयोगी कार्य कसे घडू शकते हे प्रा.डॉ.सी.डी.भातुला यांनी उपस्थित संशोधक सहभागींना पटयून दिले.

सदर आंतरराष्ट्रीय दर्जेच्या चर्चासत्रामध्ये विविध राष्ट्रीय आणि आंतरराष्ट्रीय शैक्षणिक संस्थेत्न सहमानी झालेल्या संशोधकांनी आपले संशोधन कार्य संशोधन लेखाच्या माध्यमात्न सादर केले. सदरच्या आंतरराष्ट्रीय चर्चासत्रासाठी चेअर पर्सन म्हणून प्रा. प्रकाश बनसोडे आणि डॉ. सागर माने हे लाभले.

सदरच्या आंतरराष्ट्रीय चर्चासत्राचे पहिल्या दिवस अखेर कार्यक्रमाचे आभार प्रा. डॉ. बी बी नवले, विभाग प्रमुख, यांनी मानले. कार्यक्रमासाठी उपस्थित मान्यवरांची ओळख प्रा. डॉ.एस एस पसाडे, IOAC समन्वयक, यांनी केले. तर आंतरराष्ट्रीय चर्चा सत्राचे प्रास्ताविक आणि समालोचन प्रा. डॉ. जे व्ही ठोंबरे, चर्चासत्राचे समन्वयक, यांनी केले. तसेच विभागातील प्रा. अशोक कांबळे आणि डॉ. डी के बंडगर सर यांनी तांत्रिक मदतनीस म्हणून कार्य केले. तसेच विभागातील परिचर श्री राजू सादिगले यांनी मदतनीस म्हणून सहकार्य केले.

सदरचे अंतरराष्ट्रीय चर्चासत्र यशस्वीरित्या पार पाडण्यासाठी महाविद्यालयातील सर्व घटकांनी परिश्रम घेतले. भौतिकशास्त्र विभागामार्फत आयोजित केलेल्या आंतरराष्ट्रीय चर्चासत्रासाठी संस्थेमार्फत शुभेच्छा देण्यात आल्या.



उच्चशिक्षित तरुणांनी संशोधन क्षेत्रात प्रगती करावी: प्रा.राजाराम माने

सांगोला (प्रतिनिधी):- शास्त्र शास्त्रेतील उच्चशिक्षित पदवी प्राप्त केल्यानंतर विद्यार्थी अध्यापन क्षेत्रात न जाता, परदेशी विद्यापीठातील मागणी असलेल्या संशोधन क्षेत्रात जिद्दीने कार्य केल्यास, यश निश्चित संपादन करू शकाल, असे प्रतिपादन विशान महाविद्यालय, सांगोला येथील भौतिक शास्त्र विभागामार्फ त

П

ΙĒ

आयोजित केलेल्या आंतरराष्ट्रीय चर्चासत्राच्या, निरोप समारंभ प्रसंगी प्रमुख पाष्ट्रणे म्हणून प्रा. डॉ.राजाराम माने यांनी केले.

विज्ञान महाविद्यालय, सांगोला येथील भौतिकशास्त्र विभागाच्या वर्तीने दोन दिवसाच्या आंतरराष्ट्रीय दर्जाच्या चर्चासत्राचे आयोजन केले अस्न, या चर्चासत्राचा समारोप ४ मे रोजी संपन्न झाला. निरोप समारंभ प्रसंगी, प्रमुख पाहणे म्हणून स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड येथील बरिष्ठ प्राध्यापक डॉ.राजाराम माने हे लाभले. तर प्रमुख बक्ते म्हणून डॉ.महेश सूर्यवंशी, सिडनी- ऑस्ट्रेलिया, आणि डॉ. महेश शिंदे, कॅलिफोर्निया, हे प्रमुख वक्ते म्हणून लाभले. निरोप समारंभ प्रसंगी कार्यक्रमाचे अध्यक्ष म्हणून संस्थेचे सदस्य डॉक्टर अशोक शिंदे यांनी भौतिकशास्त्र विभागातील सर्व शिक्षकांचे अभिनंदन करून भौतिकशास विभाग सर्व उपक्रमांमध्ये सहभागी होत असल्याचा परिचय सहभागीना करून दिला.

सदर आंतरराष्ट्रीय

चर्चासत्राच्या दुसऱ्या दिवशी चेअर पर्सन म्हणून प्रा.डॉ. शिवाजी कुलाळ आणि प्रा.डॉ.रमेश बुगढ यांचे सहकार्य लाभले. तसेच उपस्थित सहमागींनी संशोधन पर कार्याचे सादरीकरण केले. सदर सादरीकरणाचे परीक्षण प्रा. डॉ. एस एन कदम यांनी केले.

निरोप समारंभ प्रसंगी प्रमुख पाहुण्याची ओळख प्रा.डॉ.एस एस धसाडे, IQAC समन्वयक, यांनी करून दिली. तर चर्चासत्राचा अहवाल प्रा.डॉ.जे.व्ही.ठॉबरे, समन्वयक, यांनी सादर केला. निरोप समारंभ प्रसंगी चर्चासत्राचे आभार प्रा.डॉ.बी.बी.नवले, विभागप्रमुख यांनी मानले. तर कार्यक्रमाचे समालोचन प्रा.अशोक कंबळे सर यांनी केले. डॉ.डि.के.चंडगर यांनी तांत्रिक मदतनीस म्हणून सहकार्य केले. तसेच श्री. राजू सादिगले यांनी चर्चासत्र सरळीत पार पाडण्यासाठी विशेष सहकार्य केले. सदरचे आंतरराष्ट्रीय चर्चासत्र यशस्वीरित्या पार पडण्यासाठी महाविद्यालया चे प्राचार्य डॉ. सिकंदर मुलाणी सर यांनी विशेष लक्ष घातले व शिक्षक- शिक्षकेतर कर्मचारी यांनी चर्चासत्र यशस्वीरित्या पार पाडण्यासाठी मोलाचे योगदान दिले. भौतिकशास्त्र विभागामार्फत संपन्न होत असलेल्या या आंतरराष्ट्रीय चर्चासत्रासाठी संस्था सचिव आणि सर्व संस्था सदस्यांनी भौतिकशास्त्र विभागाचे कौतुक करून अभिनंदन केले.



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The Institution, Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola, was established in 23-Sep-1991, with the aim of giving availability and facility of education to socially backward society, to Bahujan society including Harijan, Girijan, farmers, labours and socially deprived from progress in the region of sangola taluka since it's establishment, the sansthas has started highschool department, professional cources of +2 section and vidnyan mahavidyalay, etc . vidnyan mahavidyalay was established 23rd septmber 1991. There is the facility of B .C .S, B.C.A (degree cources), Bsc(comp) & Msc education in the college. The college has started M.A. (english)cource from the year 2004 & Msc (comp science) from 2009 from 2012 since its establishment the college has been progressing ahead and has now become an importent academic center in the region of sangola taluka the college is accredited by NAAC with Grade "B" in the year 2004 Along with an intellectual & all round development of students, to develop their academic carrier, there are various departments under Arts & Science College faculities During the last year the no. of students in this college were 1600. The big building of the college, with its large play ground, is near by S.T stand.

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DC Electrical Resistivity of Aluminium Substituted Cobalt Ferrite Nanocomposites

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ABSTRACT

Nano-particle size polycrystalline aluminum substituted cobalt ferrite samples $CoFe_{2-2y}Al_{2y}O_4$ (where y = 0.0, 0.05, 0.15 and 0.25) have been prepared by standard ceramic technique. XRD pattern of aluminum substituted cobalt ferrite reveals the single-phase cubic spinel structure. The effects of Al^{3+} on both AC and DC Electrical properties are studied. DC Electrical resistivity is found to increase with increase of aluminum content. Activation energies in ferromagnetic region are found very less than that of paramagnetic region.

Keywords: Co-Al Ferrites, Inverse cubic spinel, activation energy, resistivity, XRD, etc.

I. INTRODUCTION

Polycrystalline nanoparticles ferrites are significant class of composites having large variety of electronic, optical and magnetic properties as they possess high resistivity. Cobalt ferrite is a partially inverse spinel with formula $(Co_yFe_{2-2y})^A$ [$Co_{2-2y}Fe_{2+2y}]^BO_4$ where A and B are the tetrahedral and octahedral sites respectively [1-3]. Vaingankar et.al [4] has reported that cobalt is 74% inverse spinel.

Nano ferrites material has application in making high density information storage [5], cores of audio frequency and high frequency transformer coils, magneto optical displays, electromagnetic wave absorption [6]. Nanoferrites are at present very promising material in technological applications and drug delivery [7]. Polycrystalline ferrites, which have applications ranging from microwave frequencies to radio frequencies range are very good dielectric materials. The very low conductivity of these materials is suitable for microwave applications. The dielectric properties of ferrites depend upon the preparation techniques. Knowledge of the dielectric properties is also important from the view point of applications at high frequencies. [8]. The present study is mainly concerned with experimental results of electric properties of CoFe_{2-2y}Al_{2y}O₄ nanoparticles. The aim of this work is to study the effect of Al -ions on the DC resistivity. In the present work; we reported the influence of composition on resistivity and structural properties of CoFe_{2-2y}Al_{2y}O₄ ferrite.



II. EXPERIMENTAL

2.1. Synthesis of aluminum substituted cobalt ferrite

The ferrites with general chemical formula $CoFe_{2-2y}Al_{2y}O_4$ (where y = 0.0, 0.05, 0.15 and 0.25) were prepared by the standard ceramic technique using AR grade cobalt oxide, Ferric oxide and aluminum oxide. The compositional weights of powders were mixed physically and blended in agate mortar in acetone medium. The final sintering process was carried at $1000^{\circ}C$ for 48 hours. The slow cooled samples were heated at rate of 80°C per hour. The pellets were formed by using respective steel die. The pressure was applied of 10 tones / square inch by hydraulic pressure gauge.

2.2. Characterization Techniques

The XRD patterns of aluminum substituted cobalt ferrites were recorded by Philips X-Ray Diffractometer model PW 1710 using Cu Ka radiation (λ = 1.5404 A.U.). The formation of the cubic spinel structure of the samples prepared is confirmed by X- ray diffraction analysis. D.C. resistivity was measured by a four probe method on compressed and sintered pellets. Silver paste was applied on both of the flat surfaces of the pellet for good electric contacts. A low but constant voltage was applied across the sample and current through the sample was measured as a function of temperature. The activation energy was calculated from the variation in resistivity with temperature using the formula

$$\rho = \rho_0 \exp (\Delta E/KT) - (1)$$

III. RESULTS AND DISCUSSION

3.1. XRD studies

X-ray diffraction patterns of the samples are presented in fig.1. Powder X-ray diffractometry of the ferrite samples reveals the single phase spinel structure, as well defined peaks are observed without any ambiguity. The diffraction peaks are well defined and sharp to corresponding planes (220), (311), (400), (422), (511) and (440). The calculated and observed values of inter planer distance (d) are found in good agreement with each other for all reflections.

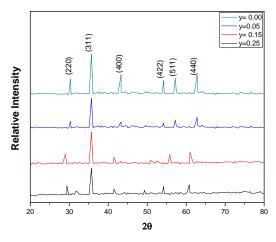


Fig.1 XRD of CoFe_{2-2y}Al_{2y}O₄ ferrite system

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3.2 D.C electrical resistivity

D.C electrical resistivity for all the samples was measured as a function of temperature is shown in fig.2. DC electrical resistivity for all the samples was measured by four probe method.

From Fig.2 it is observed that DC electrical resistivity of all the samples show almost a linear decreasing behaviour with increasing temperature. According to [9], Ferrite structurally forms cubic close packed oxygen lattice with the cations fit into the octahedral(B) and tetrahedral (A) sites. It is observed that DC electrical resistivity increases with increasing concentration of Al^{3+} ions. Conduction in ferrite can be explained on the basis of hopping mechanism. It is well known that Al^{3+} occupy octahedral site B, while Co^{2+} and Fe^{3+} ions occupy A and B sites [10]. More, it is known that the conduction mechanism in ferrite occurs mainly through the hopping between $Fe^{2+} \leftrightarrow Fe^{3+}$ in the B- sites [11]. Thus , the deficient of Fe^{2+} ions with increasing Al^{3+} concentrations gives further reason for the increase of the DC electrical resistivity. The Fe^{3+} ions at the A- sites contribute little to conduction due to larger distance between them [12].

The change in slope is markedly observed in all the samples, such change is either due to Curie temperature [13] or due to change in conduction. This indicates the semiconducting nature of ferrrites. The variation in resistivity with temperature is given by using the formula (2).

$$\rho = \rho_0 \exp(\Delta E/KT)$$
 -----(2)

Where ΔE = Activation energy, K = Boltzmann constant & T = Absolute temperature.

For composition y = 0.0, 0.05, 0.15 and 0.25, the variation of $\log \rho$ with 1/T shows only one discontinuity in resistivity at curie temperature. The change in the slope of resistivity at Curie temperature corresponds to change in the activation energy (ΔE).

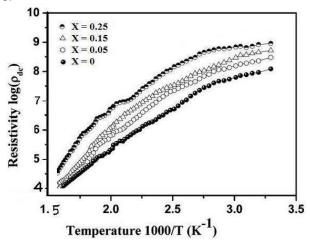


Fig. 2. Variation of DC resistivity with temperature.

Table1. Activation energy, Curie Temp. and dc resistivity of CoFe_{2-2y}Al_{2y}O₄ ferrite system.

Composition	omposition Activation Energy (eV)		Curie Temp.
У	Ferri-region	Para-region	
y =0.00	0. 2694	0.4149	765
y=0.05	0.3230	0.4391	730

y=0.15	0.2570	0.4705	701
y=0.25	0.3123	0.5724	669

The activation energy was determined by slope of the graph of dc electrical resistivity as shown in Fig. 2. Activation energies were calculated using the formula (3),

$$E_a = 2.303 \times K_B \times 10^3 \times slope(eV)$$
 -----(3)

Where, $K_B = Boltxmann Constant = 8.602 \times 10^{-5} \text{ eV/K}$

Komer and klisuhin have attributed the change of activation energy to magnetic transformation from ferrimagnetic to paramagnetic state [14].

The activation energies in both ferri and paramagnetic region of the composition are determined from the slope of respective lines. Activation energies in ferrimagnetic region are found very less than that of a paramagnetic region as shown in Table.1

Table 1 shows Curie temperature (Tc) obtained from dc resistivity. it was observed that, Curie temperature (T_C) reduces with Al content. This decrease in Tc has been recognized due to decrease in strength of A-B interaction as a result of change in cation distribution between A and B sites [15]. The above variation is expected on replacing Fe³⁺ ions by Al³⁺ions.

According to assumed cation distribution, the magnetic interaction between magnetic ions (Al-Fe) on B-site is decreased due to substitution of Al³⁺ content, is the reason for decrease in Curie temperature. This is in accordance to the result obtained by Mullai et al [16].

IV. CONCLUSIONS

Cobalt ferrite is partially inverse cubic spinel ferrite. All prepared ferrite samples exhibit single domain to super paramagnetic transition. The electrical properties have been studied for all samples. The resistivity variation with temperature shows typical semiconductor characteristics. The decrease in resistivity with increasing temperature could be attributed to negative temperature coefficient of resistance of CoFe_{2-2y}Al_{2y}O₄. The decrease in the electrical resistivity at low temperature is attributed to the impurities, which reside at the grain boundaries. It is concluded that aluminum content influences electrical conductivity of cobalt ferrite. Hence much higher DC resistivity ferrite material are used in the applications at high frequencies as microwave absorbers.

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The Role of Chromium Doping On Structural, Morphological and Optical Properties of ZnO Thin Films

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ABSTRACT

Pure and 5% Cr-doped ZnO thin films were successfully synthesized by using a spray pyrolysis technique. Thestructural, optical, and morphological properties were examined by using an X-ray diffractometer (XRD), field emission scanning electron microscopy (FESEM),and UV-Vis spectrophotometer. The structural properties revealed polycrystalline with a hexagonal wurtzite structure. The structural parameters such as crystallite size, lattice parameters, volume, strain, u parameter, and bond length were determined from XRD patterns. The morphology of the pure films was found to be spherical grains distribute uniformly throughout the surface. With the introduction of chromium, the morphology was found to be agglomerated nanograins. The optical properties such as band gap and transmittance were determined. Band gap values were determined by using Tauc's plot and were found to be decreased for Cr-doped films. The transmittance of doped Cr-doped ZnO thin film was found to be nearly 85% which is higher than pure films. And hence the doped thin films can be suitably used in the field of optoelectronics and sensor device applications.

Keywords: Spray pyrolysis, nanostructured thin films, X-ray diffraction, optical properties, optoelectronic devices.

I. INTRODUCTION

In the last few decades, nanomaterials have received a lot of attention in both theoretical and experimental fields due to their small grain sizes, large grain boundaries, quantum size effects, and a sufficiently large surface-to-volume ratio in comparison with their bulk form[1]. However, Metal oxide semiconducting nanomaterials have been widely used in the field of solar cells, sensors, optical devices, supercapacitors, etc[2]. Among all the metal oxides, ZnO is one of the most important materials because of its chemical and electrical, and physical properties. It is a non-toxic, II-VI group semiconductor material having a wide band gap semiconductor $3.37 \, eV$. Also, it exhibits large excitation binding energy $60 \, MeV and$ high electronmobility $\sim 400 \, cm^2 V^{-1} s^{-1} [3,4]$. Moreover, ZnO has Biocompatibility, chemical stability, thermal stability, and low synthesis cost material and hence ZnO has attracted much attention in the field of research[5]. The properties of ZnO nanomaterials in terms of structural, electrical, optical, and morphological can be enhanced by doping



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of suitable material, heat treatment, and molar concentrations of precursors solution[6,7]. In the present study, the effect of doping on structural, morphological, and optical properties has been studied. The choice of dopant depends upon the ionic radii of the dopant and host material as well as electronegativity. Such films can be synthesized by different methods including RF sputtering[8], thermal evaporation[9], successive ionic layer adsorption reaction (SILAR)[10], chemical bath deposition (CBD)[11], spray[12], etc. Among all these methods, the spray is a simple, versatile, and cost-effective method used for the synthesis of thin films. In the present work, we report the synthesis of pure and Cr-doped ZnO thin films and the structural, morphological, and optical properties and their application in the field of optoelectronics device applications.

II. METHODS AND MATERIALS

All chemicals of analytical grade were used for the synthesis of thin films. Pure and 5% Cr-doped ZnO thin films were prepared by using a precursors solution of 0.1M zinc acetate dihydrate $(Zn(CH_3COO)_2, 2H_2O)$, 0.1M Chromium chloride hexahydrate [CrCl3.6H2O] were purchased from Sigma Aldrich. All starting chemicals were used without further purification. Double distilled water was used for the preparation of the precursor solution. For the synthesis purpose spray pyrolysis technique was utilized. All the samples were synthesized on a glasssubstrate at a temperature of 400°C, flow rate of 2ml/min, and nozzle-to-substrate distance of 28 cm.

III. RESULT AND DISCUSSION

Fig. 1 shows the X-ray diffraction (XRD) patterns of pure and 5% Cr-doped ZnO thin films. XRD patterns of both films confirm the polycrystalline nature of ZnO. The observed diffraction peaks at (100), (002), (101), (102), (110), (103), (200), (112), and (201) indicate the hexagonal wurtzite structure of ZnO, which agrees with standard JCPDS card no. 79-0207. No extra peaks were observed corresponding to dopant atoms and it confirms the incorporation of the Crdopant into the ZnO host material. The average crystallite size (D) is calculated from the well-known Scherrer's formula defined as[13];

$$D = \frac{0.94\lambda}{\beta\cos\theta} \tag{1}$$

Where λ, β, θ are x-ray wavelength 1.5418 A° , the Bragg's diffraction angle and full-width half maximum (FWHM in radians) of the peak corresponding to θ value for the plane (002). The crystallite size was found to be decreased from 27.19 nm to 17.87 nm for pure and Cr-doped ZnO films. This decrease in crystallite size is due to the distortion created by the substitution of the Cr dopant into the ZnO host material.

Lattice parameters a and c were calculated using the following formula:

$$\frac{1}{d_{(hkl)}^2} = \frac{4}{3} \left(\frac{h^2 + k^2 + hk}{a^2} \right) + \frac{l^2}{c^2}$$
 (2)

where h, k, l are the Miller indices and d is the interplanar spacing. The volume of the unit cell for the hexagonal structure has been estimated using the equation;

$$V = 0.866 a^2 c \tag{3}$$

The variation of lattice parameters, c/a ratio, and unit cell volume of ZnO thin films is listed in Table 1. The decrease in the lattice parameters and volume of the unit cell is due to the incorporation of smaller ionic radii of Cr^{3+} .

The strain in the prepared films is determined by using the relation,

$$\varepsilon = \frac{\beta \cos \theta}{4} \tag{4}$$

With doping the crystallite size decreased and strain increased indicating that the Cr dopant slows down the growth of ZnO grains[14].

The Zn-O bond length is calculated by using the relation,
$$L = \sqrt{\frac{a^2}{3} + \left(\frac{1}{2} - u\right)^2 c^2}$$
 (5)

Where u is the internal parameter $u = \frac{a^2}{3c^2} + 0.25$

The bond length of pure ZnO is comparatively higher than that of 5% Cr-doped ZnO films leading to a structural disorder in doped films along the c-axis. Table 1 indicates structural parameters for pure and 5% Cr-doped ZnO thin films.

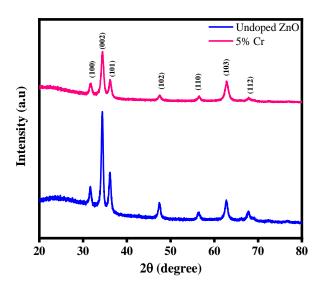


Fig. 1: XRD patterns of pure and 5% Cr-doped ZnO thin films

Table 1: Structural parameters for undoped and Cr-doped ZnO thin films

Parameters		Pure ZnO	5% Cr-ZnO
Crystallite size (D) (nm)		27.19	17.87
a (Å)		3.2576	3.2477
Lattice parameters c(Å)		5.2098	5.1937
The volume of the unit cell V (Å ³)		47.88	47.44
Strain (ε)		0.0014	0.0021
u-parameter		0.3803	0.3803
Bond length L (Å)		1.9814	1.9753

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Morphological studies

Fig. 2 depicts the FESEM micrographs of synthesized pure and Cr-doped ZnO thin films. The well-ordered nano spherical granular was observed for pure ZnO thin films. However, the morphology has been modified withthe introduction of Cr doping. The agglomerated spherical granular-like structure was observed.

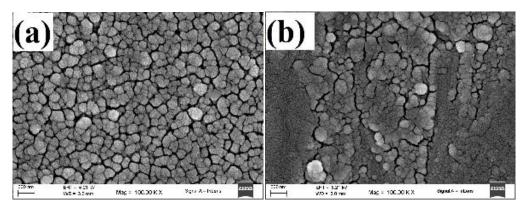


Fig.2: FESEM micrographs of (a)pure and (b)5% Cr-doped ZnO thin films

Optical properties

Fig. 3 shows Tauc's plot of pure and Cr-doped ZnO thin films. The optical band gap energy (E_g) for the prepared thin film is calculated by using Tauc's plot. using the relation;

$$\alpha h \nu = C \left(h \nu - E_q \right)^n \tag{6}$$

where E_g is the optical band gap, C is a constant, α is the absorption coefficient $h\nu$ is a photon energy. Since ZnO is having wide direct band gap and hence (n=1/2) is used for finding out the band gap. It has been observed that the band gap is decreased from 3.28 to 3.25 eV with the 5% of Cr-doping. The decrease in band gap values was observed due to the exchange interaction. This concludes that the band gap can be tuned by doping a transition metal and used as a proper candidate in optoelectronics device applications. Fig. 3 inset depicts the transmittance spectra of pure and 5% Cr-doped ZnO thin films. The transmittance was found to be increased withthe introduction of a dopant element. This suggests that the doped samples can be suitably used in the field of transparent conducting metal oxide thin films.

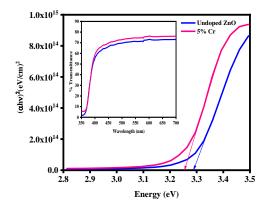


Fig. 3:Tauc's plot and inset show the % Transmittance of pure and Cr-doped ZnO thin film.

IV. CONCLUSION

Pure and Cr-doped ZnO thin films were successfully synthesized by using the spray pyrolysis technique. The synthesized films are found to be polycrystalline exhibiting a hexagonal wurtzite structure. The XRD pattern reveals that the synthesized samples have intense peaks along the c-axis. The impact of chromium doping on structural properties can be seen effectively. On the introduction of the dopant element, the morphology was modified to some extent. The optical properties revealed that the doped films are having nearly 85% of transmittance and can be used as transparent conducting metal oxide films. The band gap values are found to be decreased with doping suggesting that the band gap can be tuned with doping of the proper element to the ZnO host.

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Development and Validation of RP-HPLC Method for the Estimation of Mesalamine in Bulk and Formulation

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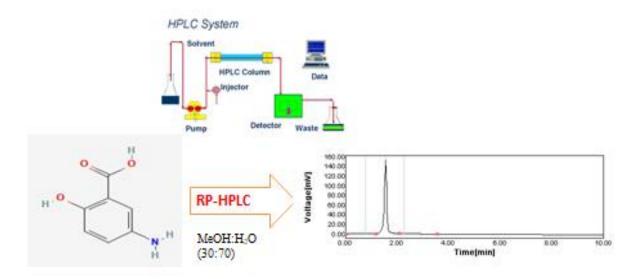
ABSTRACT

A rapid, sensitive and specific RP-HPLC method involving UV detection was developed and validated for quantification of mesalamine. Chromatography was carried out on a pre-packed Phenomenex Luna C8(2) column (150 \times 4.6 mm, 5 μ m) with Phenomenex security guard cartridge C8 as stationary phase and mobile phase methanol: water (30:70% v/v) at the flow rate 1 mL/min. Mesalamine was detected at 232nm. The developed method is validated as per ICH Q2 (R1).

The method showed good linearity (R^2 = 0.9989) in the range of 5 to 25 μ g/mLand average recovery of 99%. The method isprecise (%RSD 1.64). Mesalamine, eluted at 2.1 min.

Keywords: Methanol, Water, Mesalamine, 5-Amionsalicylicacid, (5ASA), Mesalazine , Mesalamine 400mg, HPLC Younglin Autochro3000, RP-HPLC.

• Graphical Abstract



I. INTRODUCTION

High-Performance Liquid Chromatography (HPLC) is a technique in analytical chemistry commonly used to separate, identify, and quantify each component in a mixture. Analytical method development is the process of selecting an accurate assay procedure for the determination of composition of formulation. The analytical method must be developed using the protocol and acceptance criteria set out in International Council for Harmonization (ICH) guidelines Q2(R1). An analytical procedure is developed to test a defining characteristic of a drug substance or drug product against the predetermined acceptance criteria for that characteristic. Analytical method development and validation can be best understood as the process of showing that the analytical procedures are adequate for assessing the drugs, particularly the Active Pharmaceutical Product (API). Analytical test method validation provides a documented process, demonstrating that the analytical procedure employed for a specific test is suitable for its intended purpose, provides evidence of method's performance and ensures quality and reliability of results¹.

The chemical name of mesalamine is 5-amino-2-hydroxybenzoic acid Its molecular formula C₇H₇NO₃and Its molecular weight is 153.14g/mol^{2,3}.

Fig. 1 Structure of Mesalamine

Mesalamine is also as mesalazine or 5-amino salicylic acid (5-ASA) ,is an anti-inflammatory drug used to treat in inflammatory bowel disease ,such as ulcerative colitis and mild to-moderate Crohn's 4Mesalamine is a bowel –specific amino salicylate that acts locally in the gut and has its predominant actions there having few systemic side effects. As a derivative of salicylic acid mesalamine is also thought to be an antioxidant that traps free radicals, which are potentially damaging byproducts of metabolisum. 5Mesalamine is considered the Active moiety of sulfalazine, which is metabolized to Sulfapyridine and mesalamine 6some common side effects include headache, nausea, abdominal pain and fever. 7

Side effects of mesalamineinclude:

- 1) Most serious side effect comes like that , Pericarditis ,liver problems , kidney problem , pregnancy ,breastfeeding ,sulfa allergy etc.,^{7,8}
- 2) It effects are primary gastrointestinal but may also include ;GI effects include nausea , diarrhea and abdominal pain ,
- 3) Myelosuppression (leukopenia, neutropenia, agranulocytosis, aplastic anaemia, and thrombocytopenia) as well as hair loss, peripheral neuropathy, pancreatitis, liver problems, myocarditis,

4) Lupus erythematosus-including urticarial),drug fever ,interstitial nephritis and nephrotic , syndrome colitis ,Stevens Johnson syndrome and erythema multiforme.⁹

Mesalamine cause muscle or joint pain, aching tightness of stiffness, back pain, heartburn, burping, constipation, etc. it is used to treat and prevent flare ups of mild to moderately active ulcerative colitis (an inflammatory bowel disease).

Exact mechanism of mesalamineunknown but is speculated that mesalamine decreases synthesis of prostaglandin and leukotriene, modulating the inflammatory response derived from the cyclooxygenase and lipooxygenase pathway. It appears to act locally on colonic mucosa .¹⁰

In the literature survey, it was found that few RP-HPLC¹¹and UV-¹²is Spectrophotometric methods were reported for the determination of Mesalamine the formulation. HPLC,¹³ UPLC¹⁴, LC-MS¹⁵ either in singal or in combined forms . The objective of this work is to establish the ideal chromatographic conditions for estimating mesalamine in bulk and a formulation using the RP-HPLC method and to validate the results following ICH guidelines.

II. MATERIAL AND METHODS

Chemicals and reagents:

Mesalamine was obtained as gift sample from Sun pharma Vapi, Gujarat. India. . Mesalamine400mg tablet was purchased local market.

Instrumentation:

Younglin Acme 9000 with UV detector (UV730D), Software (Autochro-3000),Ultras onicator(Oscar Microclean 103), RC membrane 0.45 μ m, 25mmSyringe filters of Phenomenex and, Ultipor® N₆₆® Nylon 6,6 membrane 0.45 μ m, 47mm(Pall Life Sciences Pvt. Ltd, Mumbai) filters were used, electronic balance (Shimadzu AY220).

Preparation of standard solution:

The Mesalamine (10 mg)was transferred to 10 ml volumetric flask and dissolved in Water, then volume was made up to the mark with Water. 1ml of solution was diluted to 10ml with Water to obtain 100 μ g/mL solutions.

Preparation of tablet sample:

Ten tablets were weighed and powdered. Powder equivalent to 400mg of Mesalamine was transferred to 10mL volumetric flask, dissolved and volume was made up to mark with Water .Then filtered through Whatman filter paper.

Determination of absorption maxima:

The mesalamine solution ($10\mu g/mL$) was scanned in the range of 200-800 nm in the UV-VIS spectrophotometer(Shimadzu1800). The lamb damax was obtained from the UV spectrum.

Method development:

The solution of mesalamine $(10\mu g/mL)$ was prepared in Water and filtered through syringe filter, then injected into HPLC system. The trials of different compositions of mobile phase tried on Phenomenex Luna

C8 column (150 \times 4.6 mm, 5 μ m) to get the peak having acceptable limits for symmetry, theoretical plates, tailing factor.

Chromatographic conditions:

Younglin Acme 9000 with UV detector (UV730D)carried out using Autochro 3000 software. Phenomenex Luna C8 column (150 \times 4.6 mm, 5 μ m) as stationary phase and mobile phase Methanol: water (30:70V/V). At flow rate of 1 mL/min with 20 μ L injection volumeat 232nm. was used for development and validation of this RP-HPLC method

Method validation:

The developed method was validated as per ICHQ2 (R1)guidelines. Specificity, linearity, accuracy, precision parameters are studied.

Specificity:

Specificity refers the ability to assess unequivocally the analyte in the presence of components which may be expected to present. Blank, standard solution ($15\mu g/mL$) and solution of the tablet were filtered through syringe filter and injected into HPLC system. The chromatogram was recorded.

Linearity:

The mesalamine solution of 5, 10, 15, 20, 25 μ g/mL were prepared from standard solution. The solutions were filtered through syringe filter and injected into HPLC system. Peak areas were recorded. The calibration curve was prepared by plotting peak area against concentration and correlation coefficient was determined.

Range:

The range of analytical method was decided from the interval between upper and lower level of calibration curve. The range of analytical method was 5 to $25\mu g/mL$.

Precision:

Precision study was done in two ways: repeatability and intermediate precision. Precision was expressed as relative standard deviation (%RSD).

Repeatability:

The six replicates of 15 μ g/mL of mesalamine were filtered through syringe filter and injected into HPLC system. Peak area was recorded and %RSD was calculated.

Intermediate precision:

The six replicates of 15µg/mL of mesalaminewere filtered through syringe filter and injected into HPLC system on next day. Peak area was recorded and %RSD was calculated.

Accuracy:

Accuracy was evaluated by standard addition method at three levels 80% 100% 120%. The tablet powder equivalent 1267 μ g of Mesalamine was transferred to four different 10mL volumetric flasks (mesalamine as 0, 80%,100%, 120%) separately and 0, 0.8, 1, 1.2mL of 50 μ g/mL standard solution was added respectively and the volume made up to the mark with Water. The solutions were filtered through syringe filter and injected into HPLC system. Peak area was recorded. Accuracy was reported as % recovery.

Robustness:

Robustness refers to is its ability to remain unaffected by small but deliberate changes that are made in method parameters. The wavelength (±1nm i.e., 232nm, 233nm, 231nm) and flow rate (±0.1mL/min i.e., 0.9mL/min, 1.0 mL/min, 1.1mL/min) were changed to study robustness.

The standard solution of $16\mu g/mL$ was filtered through syringe filter and injected into HPLC system. Peak area was recorded and %RSD was calculated for these variations.

Systems suitability:

System suitability testing is an integral part of many analytical procedures. The tests are based on the concept that equipment, electronics, analytical operations, and sample to be analysed constitute an integral system that can be evaluated as such. System suitability was performed by injecting standard solution of $16 \, \mu g/mL$ of mesalamine and chromatogram was recorded to check parameters like retention time, theoretical plates, tailing factor and resolution.

Assay of Tablet:

The tablet solution was filtered through syringe filter and injected into HPLC system. The chromatogram was recorded at 232nm and mesalaminecontent in the tablet was calculated.

III. RESULTS AND DISCUSSION

The mesalamine shows absorption maxima at 232nm. This wavelength was used for detection. During initial trials of new analytical method development priority is to provide simple, economical and, precise HPLC method for determination of mesalamine.

The method development was initiated using Methanol and Water mobile solvents on Phenomenex C8 (150 X 4.6 mm, $5\mu m$). The trial of methanol and Water in the combination of 30:70 showed better peak of good symmetry having tailing factor(0.81), theoretical plates (2584) and eluted at 2.1 min (Fig. 2).

Specificity:

Overlayof chromatograph of Blank, Standard, and, sample are as shown in the fig 3, It is observed that drug in both solutions eluted at the same retention time. This indicates there is no interference of excipients in drug analysis and method is specific.

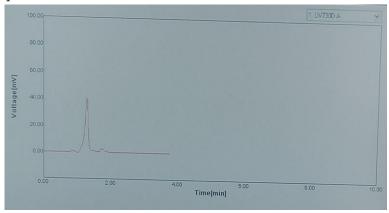


Fig 1: Specificity

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Linearity:

The response of area of different concentration is present in table1 the graph was found to be Peak Area V/S Concentration (fig 3) the calibration curve showed good linearity in the range 5-25mg/ml, for Mesalamine for Mesalamine API with correlation coefficient (r2) of 0.9989 (fig3;table1) in that refers to ability within the range to obtain test result which are directly proportional to the concentration analyte in the simple way. A typical calibration curve has the regression equation of $y = 202.09 \times 10^{-2} \times 10^{-2$

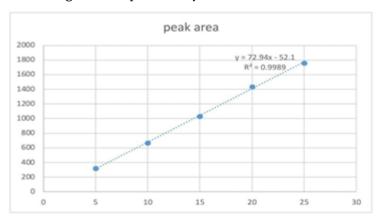


Fig 2: Calibration curve of Mesalamine .peak area v/s concentration (API)

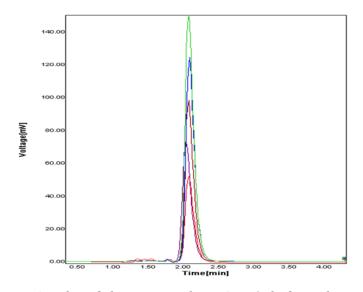


Fig 4: Overlay of chromatographic 5-25µg/ml of Mesalamine

14010 : 1 1100411 01 111104110,			
Sr. No.	Concentration(µg/mL)	Peak Area	
1	5	321	
2	10	665	
3	15	1029	
4	20	1436	
5	25	1759	

Table: 1 Result of linearity

Precision

The intra and inter day variation of the method was carried out and high values of mean assay and low values standard deviation and %RSD (% RSD < 2 %) within a day and day to day variations for Mesalamine revealed that the proposed method is precise. It is Repeatability and intermediate precision have been expressed by % RSD .

Table: 2 Result of Precision

Injection	Peak Area			
Coc(15)	Repeatability	Intermediate precision		
		Day-1	Day-2	
1	1029	1021	883	
2	1075	1040	865	
3	972	1057	878	
4	1025	1040	880	
5	989	1055	887	
6	1009	1020	882	
SD	35.89847	17.4547	7.574079	
%RSD	0.358985	0.174547	0.008615	

Accuracy the recovery of method , determined by adding a previously analyzed test solution with additional drug standard solution , in that known amount of concentration in sample at 80 % , 100% , 120 % . added concentration was compared recovered concentration to determine % recovery. recovery of Mesalamine 100 to 102. The values recover % . (%RSD)listed in table 3 indicate the method is accurate .

Table: 3 Results of Accuracy

Sr. no.	Recovery	Concentration	centration Amount recovered	
	level in %	(μg/mL)	(μg/mL)	
1	80	8.186	1262	102
2	100	19.88	1398	100
3	120	22.12	1562	102.4

Assay:

The developed method was applied for estimation of Mesalamine in tablet. The result of the assay is shown table 4 Mesalamine tablet contain 98.3% of stated amount of Mesalamine.

Table: 4 Results of Assay.

	•			
Tablet form	Amount taken	Amount found	% Content	
Mesalamine 400	16 μg/mL	9.83 μg/mL	98.3	

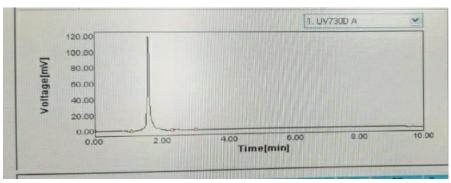


Fig: 5Assay of Mesalamine

Robustness :In that robustness influence of small changes in chromatographic conditions such as change in flow rate (+- 0.1 min/ml), Temperature , wavelength detection and mobile phase concentration also favor . the development of RP-HPLC .

Table: 5 Robustness

Parameters	Area
Wavelength of UV detector	
233	1021
231	1040
Mean	1030.5
SD	13.43503
% RSD	0.13435
Flow Rate	
0.9 mL/min	1057
1.1 mL/min	998
Mean	1027
SD	41.7193
% RSD	0.417193

System Suitability : it perform 16 $\mu g/ml$ of Mesalamine was injected in the HPLC , The System suitability parameters- retention time ,tailing factor , theoretical plates and resolution factor, were determined and their limit.

Table 6 System Suitability

Sr. No.	Parameters	Observed Value	Criteria
1.	Retention Time	1.6	-
2.	Theoretical Plates	2236	>2000
3.	Tailing Factor	1.5	<2.0
4.	Resolution	2.5	>2.0

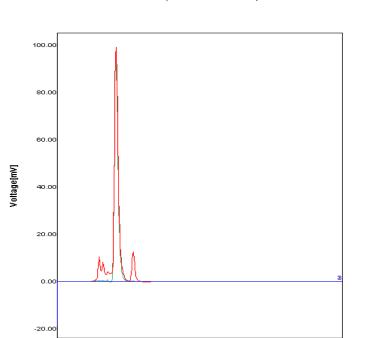


Fig :6Overlay of 15µg/ml Standard Solution

- Chromatogram (Red),20µg/ml of sample solution
- Chromatogram (Blue) is blank and (Green)

Limit of Detection and Limit of Quantification: The Developed method was highly sensitive with LOD of 2.52µg/ml and LOQ 7.65µg/ml.

IV. CONCLUSION

A sensitive and selective stability indicating RP-HPLC method has been developed and validated for the analysis of Mesalamine based on peak purity results ,obtained from the analysis of Mesalamine .force degradation samples using described method ,it can be conducted that the absence of co-eluting peak along with the main peak of Mesalamine indicated that the developed method is specific for the estimation of Mesalamine in presence of degradation products. Further the proposed RP-HPLC method has excellent sensitivity, precision and reproducibility.

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Antimicrobial Activity of Flaxseed Marketed Oil on Different Microbes

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ABSTRACT

Flaxseed has antibacterial, antifungal, anti-inflammatory, and antimicrobial activity. The purpose of this study is to check the activity of two different marketed cold-pressed flaxseed oils. In that study, the two different oils are taken and their activity was checked against different gram-positive and gram-negative bacteria (*Escherichia coli, Staphylococcus aureus*) pathogenic fungus (*candida Albicans, and aspergillus Niger*), and periodontal bacteria (*streptococcus mutans and porphyromonas gingivalis*). The agar well diffusion technique was utilized against these six microbicides. The wells of 6 mm diameter were bored and oil was applied to two different wells. The zone of inhibition of it was measured in millimeters after 48,72 hours of incubation at 38°C.No inhibitory effect was noticed against *S mutans*, low effect against *S aureus* and *E Coli, p gingivalis*and good inhibition against *candida Albicans* and *Aspergillus Niger*. In conclusion, flaxseed oil is a good alternative medication and it can be used for the treatment of wound infections caused by bacteria andas an antifungal agent.

KEYWORDS: marketed flaxseed oil, E Coli, S aureus, candida Albicans, A Niger, S mutants, P gingivalis.

I. INTRODUCTION

The scientific name for flaxseeds is *Linumusitatissimum L*, which translates to "most helpful" in Latin. It is a multifaceted crop that can be planted for fiber or oil production (El-Beltagi, Salama, & El-Hariri, 2007; Diederichsen & Richards, 2003; Vaisey-Genser & Morris, 2003; Tour'e & Xueming, 2010)^[1]. Flax comes in yellow and brown variants. Depending on how the seeds will be used, end consumers in the food business typically have a preference for one colour kind over the other. If the flax is crushed for oil, the colour kind is less significant. Some types, which may sell for more money, were created with higher quantities of omega-3 fatty acids.^[2]

Linseed oil is commonly marketed as a food under the name flaxseed oil. It is obtained from the dried ripe seeds of the flax plant, *Linum usitatissimum*, and consists of the glycerides of linolenic, linoleic, oleic, stearic, palmitic, and myristic acids (Merck 2015) [3]. flaxseed oil is an edible oil obtained from the flax plant. It is high in α -linoleic acid and has hydrophobic properties that help it to reduce moisture and seal porous surfaces. These properties are believed to be responsible for the effective reduction of microorganisms and fungal infections. [4] In earlier studies, the *L. usitatissimum* fixed oil has been reported to exhibit significant anti-

inflammatory [5], antiarthritic [6], antiulcer [7], and antidiabetic [8] properties. The antimicrobial property of L. usitatissimum oil and its therapeutic effectiveness in bovine mastitis [9], an inflammatory disorder caused by microbial infection has been reported recently [10]. Flaxseed oil was used as a diuretic during the Middle Ages to treat renal diseases (Moghaddasi 2011) [11]. Flaxseed oil is mostly found in cotyledons (75%) and less in seed coats and endosperms (22%). The main constituents of the oil are triglycerides of α -linolenic (52%), less in seed coat and endosperm. According to another study, flaxseed lignans extract showed considerable antifungalactivityagainst Aspergillus flavus and Aspergillus Nigerat 2.5 to 3.0 mg/ml, ranging from 70% to (Barbary et al., 2010) [12]. By preventing tiredness and slowing down the ageing process, flaxseed oil is said to increase both mental and physical endurance^[13]. L usitatissimum fixed oil showed good antibacterial activity against a number of microbial strains, including Streptococcusagalactiae (NCIM 2401), Micrococcusluteus (ATCC 10240, ITCC9341), Staphylococcusaureus (ITCC8531,ATCC29737), Bacillus pumilus (ATCC 14884), Enteric (ATCC 8739) [14] By preventing tiredness and slowing down the ageing process, flaxseed oil is said to increase both mental and physical endurance. Flaxseed is stated to have properties like Vranahrit (wound healing), and is beneficial for Vata (Misra 1963).[15]The antibacterial activity of flaxseed against periodontal pathogens was carried out in a study that demonstrated that flaxseed extract is efficacious against P gingivalis.[16]. The current research presents an evaluation of the antimicrobial activity of flaxseed oil against six different organisms.

II. MATERIALS AND METHODS

Flaxseed oil was obtained from the local market and used for this study. Microorganisms obtained from V G Shivdare institute of biotechnology, Solapur.

MICROORGANISM:

The following microorganisms were used for antimicrobial activity. *Escherichia coli, Staphylococcus aureus, candida Albicans, aspergillus Niger, streptococcus mutans and porphyromonas gingivalis.* All the microorganisms were maintained at 4°C on nutrient agar slants.

Antibacterial Susceptibility Test:

The well diffusion method on Muller Hinton Agar (MHA) medium was used to screen the antibacterial activity^[17] The MHA plates were prepared by pouring media into sterile Petri plates and bacterial culture inoculated by spread plate technique. Wells of 6 mm diameter were bored and oils were applied to wells of the plates were incubated at 37°C for 48 and 72 hr. The diameter of inhibition zones was measured.

Antifungal Susceptibility Test:

From the well diffusion method, it is observed that marketed flaxseed oil shows a zone of inhibition in the range of 14-21mm. *S mutants* do not show any zone of inhibition (fig. A), *S aureus* shows the zone of inhibition

of 16mm, *E coli* shows 15 mm of zone of inhibitionwhile *p gingivalis* shows 14mm of zone and *C albicans* and *aspergillus Niger* shows 20-21 mm of the zone of inhibition respectively.

III. RESULT AND DISCUSSION

zone of inhibition of two marketed flaxseed oils was found to be_

Table 1. zone of inhibition of flaxseed marketed oils

Test organisms			Zone of inhibition		
		F. oil 1(brown oil)	F. oil 2(yellow oil)		
S mut	ants	-	-		
S aure	eus	-	16mm		
E coli		15 mm	-		
C. alb	icans	20mm	-		
A.	Niger	21mm	-		
P. gin	givalis	14mm	-		

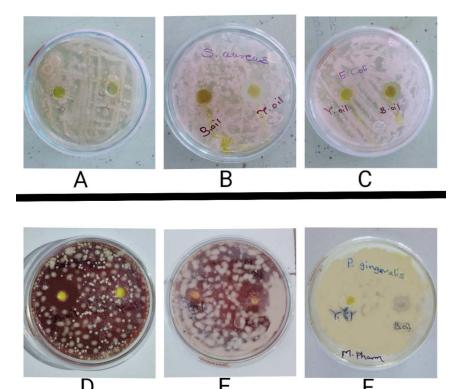


Fig.1 zone inhibition of flaxseed marketed oils against

A. Streptococcus mutans, B. staphylococcus aureus, C. Escherichia coli, D. Candida albicans, E. Aspergillus Niger, F. Porphyromonas gingivalis.

From well diffusion method, it is observed that flaxseed oils exhibited higher antifungal activity against *Candida albicans* and *Aspergillus Niger* than other bacteria(fig.1).

IV. CONCLUSION

The study provides useful knowledge about the activity of flaxseed-marketed oils on different microbes. The oil shows antifungal properties against tested fungi (Table 1) and also shows an effect against some bacteria (Fig. 1).

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Formulation and Evaluation of Herbal Lipstick from Beetroot Powder

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ABSTRACT

The aim of present study to create the herbal lipstick from the natural colorants. In order to prepare herbal lipstick from the beet root powder and evaluate the prepared lipstick. Lipstick are formulations commonly used to improve the gorgeousness of lips and add glamorous touch to the makeup. Herbal lipstick is a cosmetic formulation containing pigments, perfumes, waxes, preservatives, anti-oxidants, oils, colors. The advantage of herbal lipstick is safe, cost effective, non-toxic, and pigments used from easily available plants and vegetables. The aim of the present study which includes the formulation and evaluation of herbal lipstick using color pigments from natural sources such as beetroot.

Due to lot of side effects of available synthetic formulation in the market the prepared herbal lipstick evaluated on parameters such as color, pH parameter, skin irritation test, perfume stability, solubility study, surface anomalies, aging stability. The present study concluded that the use of natural colorants in lipstick formulation having less or no side effects. It has potential to increase consumer acceptance because of use of different natural ingredients and harmless colorant used.

KEYWORDS: Beet root, Natural colorant, Herbal lipstick formulation, *Betavulgaris*, color cosmetic, skin testing.

I. INTRODUCTION

Cosmetics is a word comes from the Greek word "Kosmtikos" it means the organization, power and skill in beautifying^[1].Cosmetics are the formulations that are used to improve the appearance of the human beauty^[2,3]. Cosmetic substances include lipstick, skin care creams, lotions, perfumes, powders, hair colors, nail polish, gels, baby products and other so many products are in huge demand in developing and developed countries^[4]. Herbal cosmetic products have increasing demand in the world market and they are precious gift from the nature. There is broad choice of herbal cosmetic products to convince our beauty regime^[5]. Herbal lipsticks are produced from natural color from frequently available vegetables and plants. Commonly used colored pigments are beet root, rose, papaya, tomato, carrot, henna, alkanet root, indigo and it is easy to produce blends for our need. The commonly used ingredients for the preparation of lipstick are oil, emollients, waxes and pigments. Such ingredients mainly used for protection of lips, texture and color^[6].Herbal lipstick contains many natural nutrients are present which are safer to use and it is free from hazardous chemicals and it is safe

to consume, therefore herbal lipstick prepared from the natural ingredients from beet root powder, rose water, bees wax. Herbal lipstick contains natural ingredients that are non-toxic as compare to the synthetic agents [7].

Beet root is usually known in Canada and the USA as a beet and it is a taproot part of a beet plant. The vegetable is stated to as a beetroot in British English, it is also known as red beet, garden beet, table beet, golden beet or dinner beet. It is one of numerous cultured diversities of *Betavulgaris*sub, specious *vulgaris* Conditiva Group [8]. *Beta vulgaris* (Beet root) is a plant from Chenopodiaceae family that is concluded in Amaranthaceaefamily^[9]. Red purple color of beets due to the variety of betanin pigments and is commonly used industrially as a red feed coloring and coloring agent in lipstick [10].

IDEAL CHARATERISTICS OF HERBAL LIPSTICK:

- 1. Herbal lipsticks are smooth and are easy to apply.
- 2. It is non-toxic and non-irritant.
- 3. It has different color, odour, texture and packing and specific plasticity.
- 4. It is free from contamination.
- 5. It is free from gritty particles.
- 6. It does not melt or hard within a variation of climatic temperature.
- 7. It should be stable in shelf-time and it is free from bloom and sweating during storage condition of lipstick.
- 8. It should have a good degree of indelibility.
- 9. It should be non-drying.
- 10. It should not lose its shiny appearance during storage.
- 11. It should remain free from the bloom or sweating during storage.
- 12. It should be a long lasting [11,12].

BENEFITS OF HERBAL LIPSTICK:

- 1. It is safe to use.
- 2. It is natural in nature.
- 3. It is cost-effective and non-expensive.
- 4. It has no side effects.
- 5. It is free from hazardous chemicals.
- 6. It is kinder to the environment.
- 7. It is not tested on animals [13].

ADVANTAGES OF HERBAL LIPSTICK:

- 1. Natural ingredients used in herbal lipstick hence it is safe to use.
- 2. It contains natural nutrient that keep lips healthy.
- 3. Different shades and combination should be obtained from these natural pigments.

- 4. Natural colorants have different natural shades of color such as ruby red, beetroot purple, pale red, deep violet, dark purple.
- 5. It hydrates the lips.
- 6. Non -irritation to the skin of lips.
- 7. Stable physically and chemically.
- 8. Shiny and smooth appearance.
- 9. Wide range of shades of color to choose form^[14].

II. MATERIALS AND METHODS

Materials:

Bees wax, paraffin wax, castor oil, beet root powder, lemon juice, vanilla essence, rose water. These are the various ingredients which are used for the preparation of herbal lipstick.

Vanilla essence and rose water purchased from the local market of Solapur. Lemon juice was squeezed from the lemons practically. Bees wax, paraffin wax and castor oil were used from laboratory.

Selection of herbs:

The selection of herb used in the formulation of herbal lipstick based on the literature survey.

1. Collection of plant material:

Beetroot was purchased from the local market of Solapur.

2. Extraction method:

Beetroot was purchased from the local market of Solapur. Beetroot was washed and peeled, cut into small-uniform size pieces. These small-uniformed pieces spread over the butter paper and It cover with fine mesh and kept it for shade dry for a day. If there is any moisture content left then it dry in oven. Then take a dried beetroot and make fine powder by using grinder. These fine powder pass through the fine sieve. Check the powder for the grainy particles and again sieve if it is required. Weigh the amount of powder and packed it [15].

Ingredients of herbal lipstick:

Table. I:

_ = = = = = = = = = = = = = = = = = = =			
Use			
Blending agent			
Glossy and hardness			
Glossy and hardness			
Coloring agent			
Flavouring agent			
Antioxidant			
Preservatives			

III. METHOD OF PREPARATION OF HERBAL LIPSTICK

The herbal lipstick was prepared by general method of lipstick formulation. Bees wax and paraffin wax were melted in china dish on water bath till becomes hot liquid. Beet root powder mixed with required quantity of castor oil and heated. Then add the first preparation into the second preparation. Now add required quantity of lemon juice and heat properly. After that add required quantity of vanilla essence and rose water. Then final formulation is kept in the mould and cool it by keeping in ice for 30 mins. After 30 min remove and the store prepared lipstick in refrigerator [16]

F3 Ingredients Use **F1** F2 S. No. F4 F5 **F6** Castor oil Blending agent 4ml 4ml 4ml 4ml 4ml 4ml 2 Paraffin wax Glossy and hardness 1gm 1.5gm 2gm 2.5gm 3gm 3.5gm 3 Bees wax Glossy and hardness 2gm 2.5gm 3.5gm 4gm 4.5gm 3gm 4 Beetroot powder Coloring agent 1.5gm 2gm 2.5gm 3gm 3.5gm 4gm 5 Rose water Flavouring agent 1ml 1ml 1ml 1ml 1ml 1ml 6 Lemon juice Antioxidant 0.5ml 0.5ml0.5ml 0.5ml 0.5ml 0.5ml7 Vanilla essence Preservative, Q.S. q. s. q. s. q. s. q. s. q. s. q. s.

Table.II Formulation Table of herbal Lipstick:

IV. EVALUATION OF HERBAL LIPSTICK:

The formulated herbal lipstick was evaluated for different evaluation tests such as melting point, skin irritation, perfume stability, surface abnormalities, aging stability, solubility test, pH.

1. Organoleptic properties:

The formulated lipstick was evaluated for organoleptic properties such as color, odor, and texture^[17].

2. Solubility test

The prepared herbal lipstick was dissolved in many solvents like acetone, hexane, petroleum ether, water, alcohol etc. and determine the solubility^[18].

3. Melting point:

Melting point is determined to indicate the limit of safe storage. The melting point of prepared herbal lipstick was determined by capillary tube method. The melting point of lipstick was done by taking melted sample in a capillary tube and then capillary tube is subjected to the ice for 2 hrs for cooling then capillary tube is tied to a thermometer. Then capillary tube was dipped into the beaker containing water which was subjected to continuous stirring. A temperature at which the sample start to increase along with capillary tube it is considered as melting point^[19,20].

4. Skin Irritation test:

The prepared herbal lipstick formulations were studied for the skin irritation test. The skin irritation test done by applying the formulated herbal lipstick on the skin for 15 minutes and observe results.

5. Determination of pH:

The pH of the prepared of herbal lipstick was determined by using pH meter.1 gram of lipstick was dissolved in 100 ml of distilled water and measure the pH .

6. Perfume stability:

Perfume stability test done by storing the prepared lipstick at 40°c and periodically comparing ,after bringing the temperature down ;with the fresh lipstick.

7. Surface abnormalities:

Surface abnormalities studied by the surface defects such as formation of crystals on surface, contamination by moulds, fungi etc. Formation of wrinkles, exudation of liquid substances and of solid fatty substances.

8. Aging stability:

Aging stability test was done by product was stored in 40°c. And periodically observe of oil bleed, crystallization of wax on the surface^[21].

V. RESULT

The formulated herbal lipstick was evaluated and it was found that, F4 was the best among the six batches. From the present study it was concluded that the formulated herbal lipstick has better option to the women because of the minimal side effects.

The aim of the present study formulation and evaluation of lipstick containing herbal ingredients which has minimum side effects and cost effect over the synthetic formulation.

Evaluation Parameters	F1	F2	F3	F4	F5	F6
Color	Light pink	Light pink	Pink	Dark pink°	Dark pink	Wine
Texture	Smooth	Smooth	Smooth	Smooth	Smooth	Smooth
Melting point	55	54	58	60	62	65
Ph	6.20	6.32	6.50	6.66	6.80	6.82
Skin irritation	No	No	No	No	No	No
Perfume stability	Good	Good	Good	Good	Good	Good
Surface anamolies	No defect	No defect	No defect	No defect	No defect	No defect

Table no.III

VI. DISCUSSION

Cosmetics with the natural ingredients are safer than the synthetic means the chemical-based cosmetics. Cosmetics prepared with the natural ingredients have ability to protect the skin. The present work formulation and evaluation of herbal lipsticks were carried out to formulate a herbal lipstick using natural ingredients which has minimum side effects compared synthetic ones. The present formulation of herbal lipsticks formulated by using different natural ingredients, such as Bees wax, castor oil, paraffin wax, beet

root powder, rose water, vanilla essence, lemon juice. Beet root used as a natural coloring agent it better option as compared to the synthetic color which have hazardous side effects.

The formulation table of herbal lipstick containing (F1-F6) were prepared and evaluated tests were performed. From the six formulation all formulations showed promising results.

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Improvement of Gas Sensing Performance of SnO₂ Sensors for NO₂ Gas by Annealing Environment Fabricated by Thermal Evaporation

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ABSTRACT

Post-deposition annealing was carried out in argon ambient to investigate the corresponding effects onto gas sensing performance of SnO₂ nanostructured film synthesized by thermal evaporation and further characterization with x-ray diffraction, scanning electron microscopy and EDAX analysis for confirming its structure, morphology, and composition. The chemo-resistive gas sensing properties of SnO₂ nanostructures for various oxidizing and reducing gases was investigated. Experimental results show that the SnO₂ nanostructured sensing film has high sensitivity and selectivity for NO₂ gas compared to other test gases. The gas sensing study of the SnO₂ film prepared with thermal evaporation after annealing in Argon atmosphere at 700°C showed an excellent sensing towards NO₂ gas at 200°C operating temperature with highest sensing response of 443% for 100 ppm NO₂ gas with very fast response and recovery time. The SnO₂ nanostructured sensor manifests remarkably enhanced sensing performance, including good response and recovery time suggestive of the promising application of the SnO₂ in the gas sensing.

Keywords: Thermal evaporation; Argon Atmosphere, Metal Oxide; XRD; SEM; EDAX; NO₂ Sensor.

I. INTRODUCTION

Environmental safety policy of many countries is directed towards the monitoring, measurement, and control of CO, H₂S, O₃, H₂, NH₃, and other pollutants in the air. Today, air pollution caused by nitrogen oxides (NO_x), especially NO and NO₂, has becomes an important environmental problem. In fact, NO₂ can interact with other pollutants such as volatile organic compounds (VOCs) to form ozone in the lower atmosphere [1], create smog in cities, and chemical reactions of NO₂ gas with water vapor can cause acid rain [2]. Hence development of NO₂ gas sensors for environmental monitoring becomes a necessary task [3]. Nanostructured metal oxides are extremely chosen for gas sensing applications because of their reversible interaction with many gases. The ZnO, SnO₂, CuO, TiO₂, WO₃, V₂O₅ etc. are several metal oxides that have been extensively studied for gas sensing application [4]. Between them, SnO₂ is the mainly used for sensing applications due to its inherent oxygen vacancies and wide band gap of 3.6 eV [5]. Gas Sensors based on semiconductor tin oxide (SnO₂) have attracted attention for over four decades because of their physicochemical properties and their

ability to detect various gases (oxidizing and reducing gases) with high response [6]. So far, thermal evaporation [7], sol–gel [8], spray pyrolysis [9], radio frequency (RF), magnetron sputtering [10], and chemical vapor deposition (CVD) [11] methods have been used to prepare the SnO₂ nanostructured thin film. Among these methods, the thermal evaporation method has been widely studied because of it has many advantages of easy processing, less power consumption, high yield, high crystallinity, and controllable shape [12].

In present work, SnO₂ nanostructures thin film were prepared on glass substrate following a route of thermal evaporation and then, annealing in Argon atmosphere promotes a progressive oxidation of the fabricated Sn film, transforming the amorphous long-range disordered as-deposited tin oxide into ordered structures for enhance gas sensing performance. In this following section, details of the experimental procedure, characterization of the samples and gas sensing properties will be presented.

II. EXPERIMENTAL DETAIL

Tin oxide (SnO₂) nanostructure were fabricated in high vacuum thermal coating unit (IHVU). High purity 99.99% Aldrich made Sn powder was used as the source material for SnO₂ synthesis. The Sn powder was stored in molebodium boat. Place the boat in vacuum chamber connected with high voltage. The precleaned glass substrates were attached to substrate holder. The chamber pressure is maintained from 10⁻⁵ to 10⁻⁶ mbar. The required current was increased to evaporate Sn powder. During this process, a distance of 15 cm is left between the source and substrate. The coated film was annealed for 20 minutes at 700°C in an argon atmosphere in the tubular zone furnace. After cooling to room temperature in a tubular furnace, the film was used for further analysis.

The morphology and crystalline structure of SnO₂ film was examined by scanning electron microscopy (SEM Model: JEOL-6300F), an x-ray diffractometer (Rigaku, Ultima IV, Cu kb/40 kV/40 mA, k = 1.5406 Å) with scan range 10–80. Gas sensing tests of SnO₂ film was performed on custom fabricated high temperature gas sensing measurement unit described elsewhere [12]. The known amount of gas is injected into the test chamber of volume 250cc by a syringe. 1mm wide and 1 cm apart like two silver electrode was drawn on sensor film as contacts for resistance measurement. To measure the gas response, resistance change of sensor film was measured in presence of fresh air and in NO₂ gas atmosphere. Resistance measurement is carried out by using Keithley 6514 System Electrometer. This electrometer is controlled by a computer and is measure the change in resistance of sensor film. To calculate gas response of sensor the formula is given as,

Where, Rair and Rgas represented the resistance of sensor in presence fresh air and NO2 gas respectively.

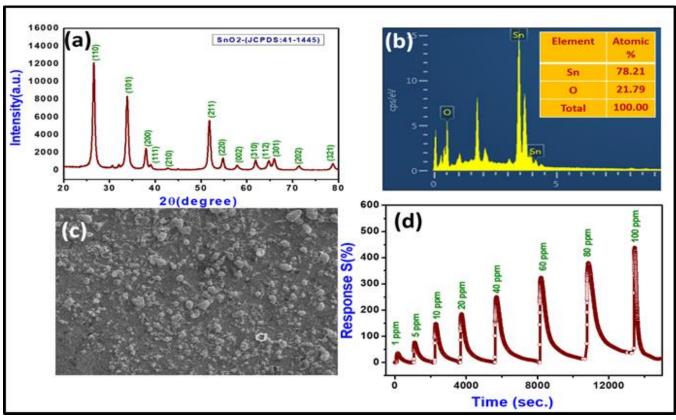


Fig.1(a) XRD, (b)EDAX, (c)SEM & (d) Dynamic response curve of SnO2 sensor for NO2 gas

III. RESULT AND DISCUSSION

3.1. Structural and morphological Analysis

The characteristic X-ray diffraction patterns of Tin oxide (SnO₂) grown at 700°C are shown in figure 1(a). All well-defined diffraction peaks are indexed to the tetragonal rutile structure of SnO₂ phase, which is reliable for standard JCPDS No.41-1445 data for SnO₂ [13]. Here no other peaks are not observed in given XRD pattern, this reveals that no other phases and impurities cannot be found in the final product. The SnO₂ was oriented along the (110) direction because peak intensity of (110) reflection is maximum as compare with other reflection peaks. The chemical composition of the SnO₂ nanostructure was checked with the EDAX spectra shown in figure 1(b). The element content and weight percentages are shown in appendices of the figure. The characteristic peaks of Sn and O from the corresponding line are shown. The results showed the existence of elements, Sn and O from SnO₂. However, the nonappearance of any other peak except those due to Sn and O evidence of the growth of SnO₂ nanostructure and chemical quality of the grown films without any elemental impurities. The Scanning electron micrograph of the prepared SnO₂ sensing film is shown in figure.1(c). Micrograph shows a cluster of small globular particle like structure with rough in surface. This surface roughness may be due to the intensification in surface volume of the sensing film due to annealing [14]. The increase in the surface area of the film can increase the adsorption of gas molecules, providing more surface-active sites [15].

3.2. Gas Sensing Study

For the gas sensing study, the selectivity is the ability of the sensing film to respond to a specific gas in the existence of other gases. The gas sensing ability of the SnO2 sensing film prepared with thermal evaporation was analysed in the presence of various gas analytes such as oxidizing gases (NO2 and Cl2) and reducing gases (H2S, NH3, and CH3OH) for 100 ppm concentration at 200°C operating temperature. The SnO2 film shows a maximum response to NO2 gas compared to other gases. The high sensitivity of the sensing film for NO2 declares that the film is selective to NO2 gas, due to much faster reaction rate between the surface of SnO2 nanoparticles and NO2 gas molecule and the film is further tested for different concentrations of NO2 to find the variation in the sensor response with respect to gas concentration. The operating temperature of sensor is a very significant task, which employs the adsorption / desorption process of oxygen ions on the top surface of the sensing film, to optimize operating temperature of tin oxide sensing film the gas detection measurement was carried out at different temperature ranges from 100°C to 300°C. In the present study SnO2 sensing film shows highest response of 439% for 100 ppm concentration of NO2 gas at temperature 200°C compared to other operating temperature. So further gas sensing study carried out at 200°C operating temperature.

Figure 7(b) shows dynamic response curve of SnO₂ sensor in the concentration range of 1ppm to 100 ppm of NO₂ gas as a function of time at 200°C. From figure it is clearly observed that response increased with increased in gas concentration. The response tests were carried out for known concentration of NO₂ gas injected into the chamber via syringe. After interaction of gas molecules with sensor the change in resistance due to adsorption of gas molecules on sensor and then come back to its original resistance due to desorption of gas molecules by sensor. The response of sensor is calculated using Eq. (1). From figure it is observed that, the response of SnO₂ sensor was about 38, 80, 151, 186, 253, 328,384 and 443% to 1,5, 10, 20, 40, 60, 80 and 100 ppm of NO₂ gas respectively with very fast response and recovery time. In the previous study as, prepared film was annealed in ambient air and the sensing film shows response of 23% and 403% to 1 and 100 pmm of NO₂ gas respectively [12]. In the present report response of SnO₂ sensors enhanced this is may be due to the presence of a greater number of oxygen ions on the surface of the film [16]. Sensing film were annealing in Argon atmosphere promotes a progressive oxidation. Response of sensor will increases may be explained based on surface area of the sensor and the number of active sites of the sensor film.

IV. CONCLUSION

We investigate the effects of annealing atmosphere on gas sensing performance, we have reported the fabrication of SnO₂ thin films by thermal evaporation on glass substrates followed by annealing in Argon atmosphere. The XRD analysis revealed that formation of tetragonal rutile nanostructured SnO₂. The gas sensing performance of SnO₂ film at optimized temperature of 200°C was carried out towards host of gases such as NO₂, Cl₂, H₂S, CH₃OH, and NH₃. Our SnO₂ sensor films are selective to NO₂ and exhibit maximum response of 443% with fast response time and recovery time. It is confirmed that sensing film annealing in argon environment shows maximum response compare to annealing in air. Annealing atmosphere are also

important for the properties of the gas sensor. The results obtained in this paper may be helpful to the fabrications and further application of SnO₂ gas sensors.

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Review On Recent Issues of Microplastics: Understanding The Minute Crisis with Big Consequences

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ABSTRACT

Plastic is the dark side of revolution started from 20th century. This is becoming a big headache to the modern world. Its degradation also is a critical issue. Now it has reached in the food chain. This review focuses on the entrance of microplastics in daily life. Microparticles and hence Microplastics have become a major environmental issue in recent years due to their persistent presence in the environment. This literature review seeks to examine the sources, composition, and impacts of microplastics on the ecosystems. The results of this research will help to inform better management strategies to reduce the presence of microplastics in ecosystems.

Keywords: Microplastics, hazardous particles,

INTRODUCTION

Microplastics are one of the most pervasive environmental pollutants of our time, affecting the environment and human health. The term microplastic was first time defined by Thompson in 2004 [1]. According to him these are the small sized plastic particles in the ocean. These tiny plastic particles, which are less than five millimetres in size, are increasingly being found in soil, water, and air around the world. Their size is below human perception. While microplastics have been found in many different places, their sources are still largely unknown. In this article, we will discuss what microplastics are, the potential sources of these pollutants, and the potential impacts on the environment and human health.

It is an increasingly concerning issue, with their presence in the environment and food chain posing potential risks to human health. It shall explore how they enter the environment, how they can affect humans and other organisms, and what measures are being taken to address the problem. Plastics are man-made organic polymers derived from the extraction of oil or gas [2–3].

Ecological plastic debris is defined by their physical state viz., solid-state, solubility, chemical composition, shape, size, colour, and origin. The classification of plastics is available. Microplastic consists of primary microplastics manufactured in microscopic size for particular purposes (micro beads) and secondary microplastics derived from huge plastic debris degraded and split by long-term chemical, physical, and biological environmental effects [4–5].

Their study involved both fieldwork and laboratory analysis of samples collected from various freshwater and marine environments. The data collected was used to determine the origin, composition, and concentrations of microplastics in different aquatic ecosystems, as well as the potential impacts of these particles on aquatic organisms and the environment.

II. METHODOLOGY

We searched the scientific literature using key search terms to obtain relevant publications.

2.1. Classification: Plastics were categorized as nano (1000 nm), micro (1000 mm), meso (10 mm), and macro (1cm) [6].

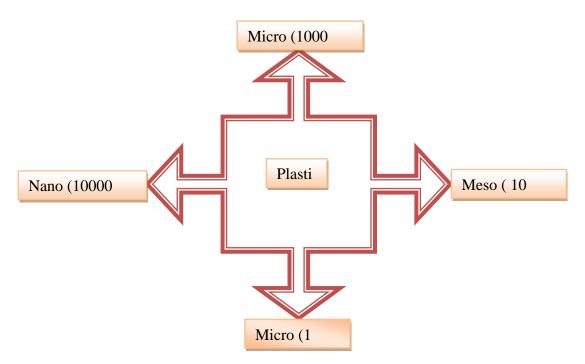


Figure: 1. Classification of plastics based on size



Figure: 2. Classification of plastics based on manufacturing

2.2. Sources of microplastics in the ecosystem: The main sources of solid waste microplastics are food waste, sludge, and landfill debris. These waste streams may contain microplastics that are linked to different micropollutants that can harm ecosystem health as they go up the food chain [7].

2.3 Microplastics in the ecosystem: Microplastics originate from waste products or by products from both commercial product development and the breakdown of larger plastics. When they are dumped to soil or sea results as a pollutant, microplastics can be harmful to the environment and animal health. Microplastics are viewed as a global problem because of their damaging impacts on humans and fish. Fish is the main source of human protein, which is crucial for body growth.

Microplastics have been found in lettuce, broccoli, pears, apples, and carrots. Radishes, turnips, and other root crops could potentially be infected. Prior research has shown microplastics in a variety of meats, including chicken, tinned fish, shellfish, and meat from other marine animals [8].

- **2.3.1. Effects of dissolution of Microplastics in water:** According to Reuters, Microplastics have been discovered in a wide range of foods, including seafood, fruits, vegetables, beer honey, and sea salt, as a result of the pervasive use of plastics in the production and processing of food. Microplastics can also be released into the environment as a result of improper handling of food waste. Microplastics found in the sea can be ingested by marine animals. The plastic then accumulates and can end up in humans through the food chain [9].
- **2.3.2. Microplastics in food chain:** Researchers have proposed that oxidative stress, DNA damage, and inflammation, among other health issues, could result from human exposure to microplastics. Seafood and land based foods are important entry points for microplastics into the human food chain, which leads to food waste via wasted food [10].

III. IMPACT OF MICROPLASTICS ON HUMAN BODY

Water stored in the plastics bottles for longer duration results into shift in the neutral to acidic nature of water. The pH of water becomes acidic. This acid causes many effects of human body including increase in the stones in the body, permanent changes in the DNA, increase in the reproductive problems in humans, rise of the acidity of the blood hence causing cancer and blockages on the arteries and veins ultimately damage of function of heart [11].

3.1 microplastic ingestion: Researchers were found the microplastics everywhere; consequently, they estimated that globally on average, humans may ingest 0.1–5 g of microplastics weekly through various exposure ways [12].

IV. CONCLUSIONS

From the above studies it is to be concluded that the overuse plastics and overexploiting the branches of chemical sciences we all are at potential risk on human life. To have a better life for next generations we should ban the use of all types of plastics.

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Lattice Constants of Aluminium Substituted Nanoparticle Copper Cobalt Ferrite

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ABSTRACT

Nano-particle size polycrystalline aluminum substituted copper cobalt ferrite samples $Cu_xCo_{1-x}Fe_{2-2y}Al_{2y}O_4$ (where $x=0.0,\,0.2\,0.4,\,0.6,\,0.8,\,1.0;\,y=0.05,\,0.15$ and 0.25) have been prepared by standard ceramic technique. The effects of aluminium and copper on structural properties of cobalt ferrite are studied. A universal testing machine as well as Archimedes's method was applied for determining the physical properties of the samples. Phase formation is investigated using X-ray diffraction, Infrared absorption technique and Scanning electron microscope technique. The Lattice constant 'a' of samples goes on increasing with Al^{3+} and copper content. The ratio c/a is found increasing when addition of copper content and decreases with aluminium content. It means that Al^{3+} and copper acquire the tetragonal prolate type distortions on B site and hence (c/a) ratio increases and automatically crystal lattice turned from tetragonal spinel to cubic spinel.

Keywords: Polycrystaline, nanoparticle size, standard ceramic technique and Inverse cubic spinel

I. INTRODUCTION

Cobalt ferrite is a partially inverse spinel with formula [Cu_xFe_{1-x}]^A [Cu_{1-x} Fe_{1+x}]^B O₄ where A and B are the tetrahedral and octahedral sites respectively [1-3]. Vaingankar et.al (4) has reported that cobalt is 74% inverse spinel. Degree of inversion is found to vary with heat treatment and quenching [5]. The cation distribution may also differ at surface and nonsurface atoms [6]. Copper cobalt ferrite is having high coercive force field. Mechanical hardness and chemical stability is magnetic recording, magneto-optical recording and electronic devices [7]. Magnetic properties of nanoparticles find wide technological applications such as high density recording, magnetic refrigeration, Ferro-fluids, spintronics and drug delivery etc.[8]. Several researchers have reported on Cd, Cr, Mn, Ti, Zn, Gd, and Nd. Substituted cobalt ferrite [9-11]. Raghavendraet. al. [12] have synthesized aluminium doped cobalt ferrite by the sol-gel method and reported the results on particle size. The estimated values of the porosity of the samples lie between 4.5% and 16.2% in Magnetoelectric composites with composition (*x*) Ni_{0.2}Co_{0.8}Fe₂O₄ (ferrite) + (1-*x*)PbZr_{0.8}Ti_{0.2}O₃[13]. In this present work we report the standard ceramic synthesis, structural properties of Al³⁺substituted coppercobalt spinel ferrite nanoparticles.

II. EXPERIMENTAL

Materials:

High purity starting materials are used as Cobalt Oxide (CoO):- 74.9326 gm, Copper Oxide (CuO):- 74.5454 gm, Ferric oxide(Fe₂O₃):- 159.6922 gm, Aluminum Oxide (Al₂O₃):- 101.9612 gm

Preparation of ferrite:

Nano crystalline powder samples of Cu_xCo_{1-x}Fe_{2-2y}Al_{2y}O₄ (where x= 0.0, 0.2, 0.4, 0.6, 0.8, 1.0; y = 0.05, 0.15 and 0.25) were prepared by the standard ceramic technique. Starting materials CuO, CoO, Fe₂O₃ and Al₂O₃ of AR grade obtained from Sigma – Aldrich, India were used. These samples were heated at ramping rate of 80 °C hr ⁻¹ at 1000°C for 48 hours. XRD and IR analysis revealed the cubic spinel structure of the synthesized samples and functional groups in the samples respectively. The absence of any extra line confirms the formation of single phase ferrite. The average particle size 'D' was determined from line broadening (311) reflection using the Debye Scherer formula discussed elsewhere [14]. Calculations of lattice constant, physical density, X-ray density, porosity, site radii and ionic bond lengths on both sites were calculated by using formulae discussed elsewhere [15] and graphically shown in fig.4. Infrared absorption spectra of powdered samples were recorded in the range 350-800 cm⁻¹ using Perkin-Elmer FTIR spectrum and spectrometer by KBr pellet technique. The scanning electron microscopes are shown in fig.3

III. RESULTS AND DISCUSSION

The X-ray diffraction patterns of the samples are presented in (fig.1). Powder X-ray diffractometer of the ferrite samples reveals the single phase spinel structure, as well defined reflection is observed without any ambiguity. The diffraction peaks are corresponding to (200), (311), (400), (422), (333/511), (440) and (533) planes. The lattice constants 'a' and 'c' for all prepared samples are calculated by using prominent (311) XRD peak. The calculated and observed values of inter planer distance (d) are found in good agreement with each other for all reflections. (shown in fig. 4)

From the calculations of lattice constants 'a' and 'c' for all the prepared ferrites it is observed that c > a and tetragonality ratio (c/a) is found in the range of 1.03 to 1.07. This result is in good agreement with previous report [16-17].In this present report tetragonality ratio for copper ferrite is 1.06. It means 70% copper resides on B site and it exhibits prorate type distortions in the crystal lattice. The previous report [18] well supports the present results reported this communication. Both Fe^{3+} and Cu^{2+} are John-Teller ion which produces prolate type distortions on (B) site and hence c > a and (c/a) = 1.06. Therefore copper ferrite exhibits tetragonal spinel structure in host crystal lattice of cobalt ferrite. In addition of copper content in tetragonality ratio is found increasing but due to addition of aluminium tetragonality ratio deceases. It means that Al^{3+} and copper suppress the tetragonal prolate type.

The crystallite sizes (t) of all the prepared samples were computed by Scherer rule utilizing the peak width at one-half intensity of the maximum intensity peak (311).

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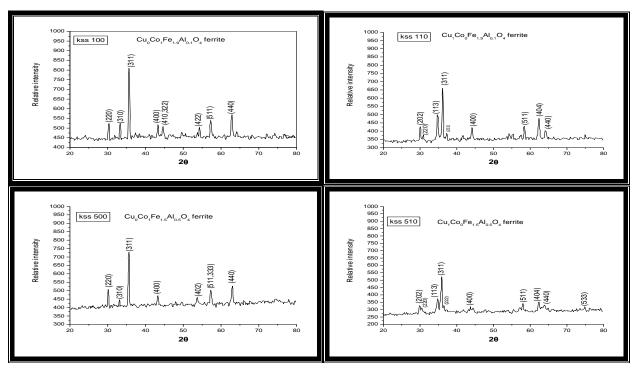


Fig: 1 XRD patterns of system Cu_xCo_{1-x}Fe_{2-2y}Al_{2y}O₄

The Al (y = 0.05-0.25) doped copper cobalt ferrite samples show a higher grain growth and the crystallite size (t) lies in the extent of 52.53-94.4 nm. The mean particle size calculated from diffractograms is in the range of 50 to 100 nm. That suggest the particles in the ferrites samples are fine and there is continuous grain growth in all compositions. It gives the confirmation of suitable microstructure formation in all compositions. The width of the reflection peak (311) for all the compositions is approximately the same due to the nearly equal particle size.

The infrared absorption spectra are showing two distinct absorption bands v_1 due to tetrahedral (A) site interstitial voids near 600 cm⁻¹ and other v_2 due to octahedral (B) site interstitials voids near 400 cm⁻¹. Our results in this present communication are well supported by previous reports [19, 20].

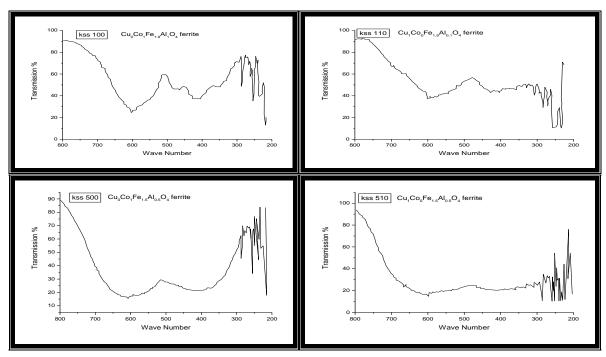


Figure 2: Absorption spectra for system Cu_xCo_{1-x}Fe_{2-2y}Al_{2y}O₄

The close inspection of all micrographs revealed that there is continuous grain growth with well – defined grain boundaries formed. The present system shows multi domain behavior. No exaggerated grain growth is observed in any composition. The average grain size is found to decrease with increase in Al content in copper cobalt ferrite. However in the present system the grain growth shows generally a decreasing trend with aluminum content, which is rather expected because of multi-domain behavior of these compositions in copper cobalt ferrite. Grain growth is almost accompanied with grain size, which is increasing with copper and aluminum content. So it appears that copper and aluminum content favors the grain growth. The scanning electron micrographs shown below

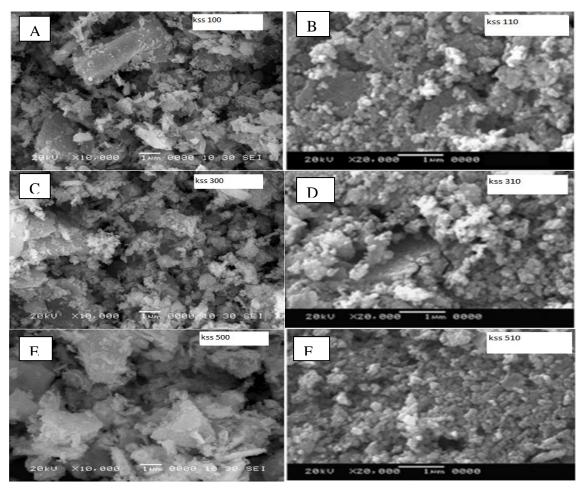


Fig: 3 (A) to (F) scanning electron microscopes of Cu_xCo_{1-x}Fe_{2-2y}Al_{2y}O₄:

- (A) KSS 100-Cu₀Co₁Fe_{1.9}Al_{0.1}O₄,
- (B) KSS 110- Cu₁Co₀Fe_{1.9}Al_{0.1}O₄,
- (C) KSS 300- Cu₀Co₁Fe_{1.7}Al_{0.3}O₄,
- (D) KSS 310- Cu₁Co₀Fe_{1.7}Al_{0.3}O₄,
- (E) KSS 500- Cu₀Co₁Fe_{1.5}Al_{0.5}O₄ &
- (F) KSS 510- Cu₁Co₀Fe_{1.5}Al_{0.5}O₄

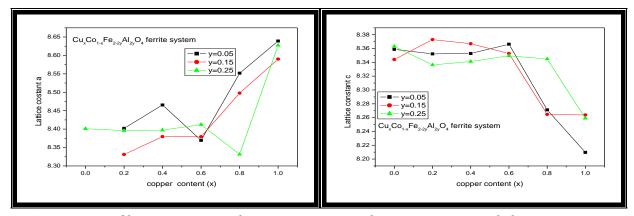


Fig:4: Variation of lattice constant a, lattice constant c, with copper content and aluminium content.

IV. CONCLUSION

Copper cobalt ferrite is partially inverse cubic spinel ferrite. Addition of Al³⁺ ions replaces Fe³⁺ on (B) site resulting in increase of lattice constant. The lattice constant obtained from XRD data shows non-linear behaviour. The infrared absorption spectra showing two distinct absorption bandv₁ due to tetrahedral (A) site interstitial voids near 600 cm⁻¹ and other v₂ due to octahedral (B)site interstitials voids near 400 cm⁻¹ It can be seen from the micrographs that the average grain size decreases with increasing substitution of doping concentration of Al³⁺ in copper cobalt ferrite which decrease in porosity.

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Consequence of Co – Precursor On Interfacial Tensions Concerning Water and Silica Coatings

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ABSTRACT

We made a successful attempt on the synthesis of transparent silica coatings on glass. We also studied the effect of co – precursor on solid liquid interfacial tensions in terms of contact angle hysteresis of liquids on the silica coatings. Double distilled water was used as probe liquid with liquid to vapour surface tension 0.072 N/M. We observed the harmonious nature of the wettability theories and our experimental work done. The wettability of the surface, presence of projections on the surface, non – polar groups present on the groups all these are the essential parameters in the behaviour of the surface water drop contact angle hysteresis.

Keywords: sol-gel process, contact angle hysteresis, wettability, transparent coatings.

I. INTRODUCTION

The study of contact angle is an important thermodynamic parameter in the quantification of wettability of surface. It is the common measure of the hydrophobicity of the solid surface. The literature survey [1–4] it is well recognized that the significant contact angle measurements can be used in the determinations of solid – liquid surface tensions. Many techniques [5] have been used to measure contact angle which was motivated by the thought of using the first equation obtained by Thomas Young in 1805 [6–9]. This Young's equation rules the equilibrium of the three interfacial tensions and the Young contact angle θ_Y of a liquid drop on a solid as per the equation,

$$\gamma_{LV}COS\theta_{Y} = \gamma_{SV} - \gamma_{SL} \tag{1}$$

Where, γ_{LV} is the liquid-vapour surface tension, γ_{SV} the solid – vapour surface tension, γ_{SL} the solid – liquid surface tension, and θ_{Y} is the Young contact angle. Young assumes that the solid surface is smooth, homogeneous and rigid; it should also be chemically and physically inert with respect to the liquids to be employed.

Basically, all solid surfaces exhibit contact angle hysteresis and because of this hysteresis, the contact angle interpretation in terms of the equation (1) is continuous. All the experimentally calculated or observed contact angles are trustworthy and proper. These extensive studies have directed contact angle hysteresis to



surface roughness [10–15] and surface heterogeneity, as well as metastable energy states [16–18]. Some observed that hysteresis decreases with increase in molecular volume of the liquid on monolayers [19–20]. Also from the literature, contact angle hysteresis was found to be related to molecular mobility and packing of the surface, liquid penetration and surface swelling [21–22]. Studies have been shown that the contact angle hysteresis strongly depends on the liquid molecular size and solid/liquid contact time [23–24]. These extensive conclusions lead to the belief that liquid sorption and liquid retention are causes of contact angle hysteresis. Hence, the current research work is based on the observations of the determining the true contact angle with water droplets on the silica coatings. These coatings were prepared by two stage sol–gel process and dip coating by using different hydrophobic precursors in order to interpret the correct contact angles on silica coatings.

II. MATERIALS AND METHODS

The synthesis of silica thin coatings was done by using the chemicals methyltriethoxysilane (MTES AR Grade), Iso-butyltrimethoxysilane (ISO-BTMS AR Grade) (Sigma-Aldrich Chemie, Germany), as precursor and co - precursor and ethanol (S.D. fine Chem. Ltd, Mumbai, India) as a solvent, ammonium fluoride (NH₄OH) (Thomas Baker, Mumbai, India) as catalyst. The glass substrates were cleaned by the procedure described earlier [25].

III. RESULTS AND DISCUSSION

3.1: FOURIER TRANSFORM INFRARED SPECTROSCOPY

From the FTIR spectra several characteristic deeps were confirmed in the range of 500 to 4000 cm⁻¹ signifying the presence of non-polar methyl groups in the silica coatings.

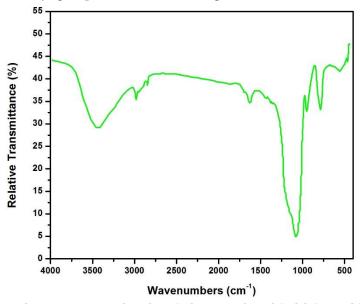


FIGURE 1: FT-IR SPECTRA OF THE SILICA COATINGS

Figure 1, is the FT–IR spectra of the silica coatings. The FT – IR spectrum signifies different functional groups of the methyltriethoxysilane (MTES) precursor. In the MTES based silica thin coatings the non-hydrolysable (–CH₃) groups are responsible for the hydrophobic property of the coatings. FTIR spectrum consists of the C–H, Si–C bonds at 2900 cm⁻¹, 1250 cm⁻¹ respectively and which reveal the extent of hydrophobicity. The absorption deeps of the C–H, Si–C are also visible. The FT–IR spectra contains the deeps observed at the around 1000, 800, and 500 cm⁻¹ are due to the asymmetric, symmetric and bending modes of the silicon dioxide respectively [26].

3.2: CONTACT ANGLE HYSTERESIS

The wettability of the silica coatings was quantified with the water droplet of $10~\mu L$ volume using the Rame-Hart goniometer. Surface hydrophobicity is usually determined by measuring the contact angle (CA) of water droplet on a surface to be tested. In this method the volume of the water droplet can affect the contact angle. There is usually a difference between the angles produced as the volume of the drop is increased as (the advancing angle) and that when it is decreased (the receding angle). This difference, termed as the contactangle hysteresis, gives a measure of the surface 'stickiness'. The greater this difference (larger hysteresis) the more water drops will stick to the surface. Usually low hysteresis is desired when dealing with superhydrophobicity of the surfaces. This means water droplets will roll off extremely easily. Theoretical equilibrium angles lie between the advancing and receding angles, sometimes being determined by vibrating the drop. Figure 2 A, is the CA image of the Iso-BTMS modified MTES based silica coatings which has shown the CA as high as 147° .

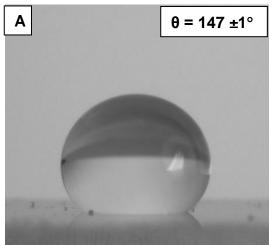


FIGURE 2 (A): CA IMAGES ON THE SILICA COATINGS

Sr. No.	silica coatings	Static	Contact	Advancing	Receding angle	CA Hysteresis
		angle	$(\theta = \pm 1^{\circ})$	Angle $(\theta = \pm 1^\circ)$	$(\theta = \pm 1^\circ)$	$(\theta = \pm 1^{\circ})$
1	MTES	129		124	112	12
2	Iso-BTMS	147		146	143	3

TABLE 1: CONTACT ANGLE HYSTERESIS OF ON THE SILICA COATINGS

From the table it is clear that the CA hysteresis for the silica films is very low and which is well analogues with the literature survey.

IV. CONCLUSIONS

The contact angle hysteresis i.e. the deviation from the true contact angle between the solid and the liquid plays a significant role in quantifying the behaviour of non-wettability of the hydrophobic surfaces. The current research work has been demonstrated that the non-wettability characteristic in the silica coatings can be easily obtained from the hydrophobic precursors by using sol-gel route. If the solid surface energy is high it will attract the water molecules via van der Waals forces of attractions and it is called as the hydrophilic surfaces which gets wet easily. Generally, for the superhydrophobic surfaces the contact angle hysteresis was found to be very low and the same demonstrated here.

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Synthesis and Characterization of Pure and Co-Doped NiO Nanoparticles Using Co-Precipitation Method

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ABSTRACT

NiO nanoparticles doped with cobalt (Co) and undoped particles were synthesized via the co-precipitation method, using nickel (II) nitrate hexahydrate (Ni(NO₃)₂·6H₂O) as the precursor agent and cobalt acetate hexahydrate ((CH₃COO)₂Co·4H₂O) as the doping agent. Finally, the samples were calcinated at 300°C. The synthesized samples underwent various characterization techniques, including UV-Visible spectroscopy, X-ray diffraction (XRD) and scanning electron microscopy (SEM). The XRD pattern was used to determine the crystalline size and structure of the NiO nanoparticles, while SEM was utilized to analyze the morphology and particle size. The UV-Visible absorption spectra were used to calculate the SPR absorption peak and band gap value.

Keywords: Pure NiO, Co doped NiO, XRD, SEM, UV-Visible.

I. INTRODUCTION

NiO is one of the most commonly used transition metal oxides in a variety of applications. It is a semiconductor made up of an antiferromagnetic oxide of the NaCl type. Its wide band gap makes it an ideal semiconductor with p-type conductivity sheets [1]. Due to its unique optical, electronic, magnetic, thermal, and mechanical properties, and its potential applications in catalysis, battery electrodes, gas sensors, electrochromic films, photoelectronic devices, magnetic materials, etc., NiO nanoparticles of uniform size and well-dispersed have attracted the attention of numerous researchers [2-7]. It is still essential in these applications to synthesize high quality and ultra-fine powders with the required size, shape, optical properties, and magnetic properties and so on. Synthesizing high-quality and ultra-fine powders with the required size, shape, optical and magnetic properties, and so on is still crucial in these applications. The preparation processes are directly related to particle structural properties such as particle size, distribution, and morphology. Different methods have been explored and developed for creating nanoscale crystalline oxide powders, many of which aim to reduce the cost of chemical synthesis and produce materials for technological applications. Researchers have used various techniques to produce NiO nanoparticles, including evaporation

[8-9], magnetron sputtering [10-12], sol-gel [13-14], surfactant-mediated synthesis [15], thermal decomposition [16], solvothermal [17], polymer-matrix-assisted synthesis [18], and so on.

II. EXPERIMENTAL

2.1. Materials

All chemicals used in this work were analytical grade reagents and used without further purification. nickel (II) nitrate hexahydrate Ni(NO3)2.6H2O as precursor agent and cobalt acetate hexahydrate (CH3COO)2CO.4H2O and sodium hydroxide (NaOH) were purchased were purchased from Sigma-Aldrich and ethanol and methanol (99.998%) were used as the solvents without further purification. The water utilised in this work was deionized.

2.2. Preparation of Pure and Cobalt Doped Nickel Oxide Nanoparticles

The pure NiO nanoparticles (NPs) were prepared by separately dissolving stoichiometric amounts of nickel (II) nitrate hexahydrate Ni(NO3)2.6H2O and NaOH in 100 ml distilled water. The obtained NaOH solution was added dropwise to the prepared nickel (II) nitrate hexahydrate in distilled water and then stirred continuously at room temperature for 2 h. The obtained precipitate was separated from the solution by filtration, washed several times with distilled water and ethanol then dried in air at 100 °C to obtain NiO nanocrystals. The obtained samples were annealed at 300 °C for 12 h. For the synthesis of the 2% and 4% Codoped NiO samples the same procedure was used.

2.3. Characterizations

The samples were characterized by using Ultima IV, Rigaku Corporation, Japan X-ray diffractometer (XRD) with Cu K α radiation source of wavelength 1.5406 Å, recorded at room temperature over the 20 range of 20° to 80° to understand the crystallinity and phase orientation of the pure and Co doped NiO nanoparticles. The surface morphology, size distribution and the composition of the elements of the prepared samples were determined with scanning electron microscope (SEM JSM-IT200) using image analyser. The optical absorption/ transmission spectra of NiO and Co doped NiO nanoparticles were recorded using a JASCO V770 Model name V-770 spectrophotometer.

III. RESULTS AND DISCUSSION

3.1. Structural Analysis

As seen in Fig.1, chemically synthesized Pure NiO and cobalt-doped NiO NPs exhibit different diffraction patterns. All of the samples include cubic nickel oxide (ICDD:78-0643), which belongs to the Fm3m space group, according to the XRD results. The energy from the heat can improve the vibration and diffusion of the lattice atoms for crystallization, increasing the intensity of chemically produced NiO NPs.

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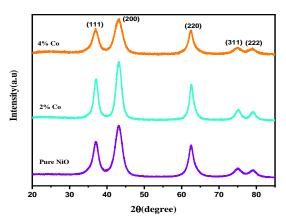


Fig.1 XRD patterns

The calcinated sample's XRD patterns showed Sharpened reflection peaks that show an increase in the size of the crystallites in NiO NPs. It is simple to identify the crystal planes of the bulk NiO at the sites of the peaks appearing at $2\theta = 37.14$, 43.22, 62.54, 75.16, and 78.94, respectively. A face-centered cubic (fcc) NiO phase with a lattice constant (a) of 4.176 (space group Fm3hm [225]) can be used to index all reflections [15]. The relationship can be used to obtain the cubic NiO lattice constants "a" is,

$$\frac{1}{d^2} = \left(\frac{h^2 + k^2 + l^2}{a}\right) \qquad \tag{1}$$

The formula v=a^3 is used to get the unit cell volume. Table 1 displays the computed lattice constant value and unit cell volume.

The crystalline size of pure NiO and cobalt doped NiO NPs are calculated by using Debye-Scherrer's relation [16].

$$D = \frac{k\lambda}{\beta \cos \theta} - \dots$$
 (2)

Where β is the full width half- maximum value of the high intensity peak, k is the shape factor and λ is the wavelength of the X – ray source used in the XRD. The obtained D values are in the range of 97.08 nm, 59.94 nm and 50.95 nm for pure NiO, 2% and 4% Co doped NiO NPs respectively. Figure.1 displays the XRD patterns of nominally composed (2% and 4%) Co substituted NiO NPs. The intensity-corresponding diffraction peaks to the plane include (111), (200), (220), (311) and (222). Moreover, it has been noted that the XRD peak broadening increases with rising Co concentrations when Co is doped up to 2%. There were no longer any cobalt metal peaks, oxides, or other contaminant phases. Using the FWHM for the (2 0 0) peak, the crystalline size and dislocation density of the NPs were estimated. Also, the dislocation density (d) was computed using the following formula to provide additional details on the quantity of faults in the films [20,21].

$$\delta = \frac{1}{D^2} \dots (3)$$

It is clear that the crystalline size of the samples decreases with increasing dopant concentration of cobalt. Also it is clear that the particle agglomerates due to van der wall's forces and they are responsible for ultrafine cobalt nanoparticles. The dislocation density values 1.0644 X 1014 cm-2, 1.0645 X 1014 cm-2 and 1.0647 X 1014 cm-2 increases with doping concentration. The improved crystallization is shown by lower dislocation

densities and larger crystalline size. The following relationships were used to determine micro strain in addition,[22]

$$\varepsilon = \frac{\beta \cos \theta}{4} \dots (4)$$

In the case of chemically synthesized Pure NiO and 2% & 4% Co doped NiO NPs, the micro-strain increases. It is clear that the increase in strain causes an increase in the lattice constant values, a reduction in particle size, and the broadening and small shifts in the XRD peaks (refer to Table 2). The standard and measured d values, (hkl) miller indices, and diffraction angle (20) of the NPs were shown in Table 1 for pure NiO, 2%, 4% co doped NiO NPs. Also calculated microstructural properties such as Crystalline size (D), Dislocation density (δ) and Microstrain (ϵ) relation shown in fig 2. Also Crystalline size (D), Dislocation density (δ) and Microstrain (ϵ), Lattice Parameter (a), Volume (a3) for all the NPs were evaluated by XRD patterns and presented in table 2.

Table 1: The standard and measured d values, (hkl) miller indices, and diffraction angle (2θ) of the pure NiO, 2%, 4% co doped NiO NPs.

hkl	Standard d (A ⁰)	Pure NiO		2% Co: NiO		4% Co : NiO	
		2θ	d (A ⁰)	2θ	d (A ⁰)	2θ	d (A ⁰)
(111)	2.41	37.1	2.41	37.08	2.423	36.8	2.44
(200)	2.08	43.2	2.09	43.2	2.093	43.06	2.09
(220)	1.47	62.5	1.48	62.48	1.486	62.32	1.489
(311)	1.25	75.1	1.26	75.14	1.264	74.96	1.266
(222)	1.20	78.9	1.21	78.72	1.215	78.72	1.215

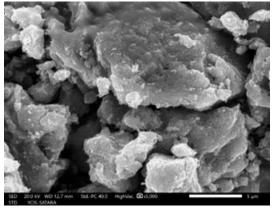
Table 2: Crystalline size (D), Dislocation density (δ), Microstrain (ε), Lattice Parameter (a), Volume (a3) values of NPs for the (2 0 0) plane.

Microstructural Properties	Pure NiO	2% Co: NiO	4%Co: NiO
Crystalline Size (D) nm	97.08	59.94	50.95
Dislocation Density (δ) X 10 ¹⁴ cm ²	1.0644	1.0645	1.0647
Microstrain (ε)	3.221E-05	5.229E-05	6.148E-05
Lattice Parameter (a)	4.183152643	4.184996596	4.19795351
Volume (a3)	73.20000939	73.29685277	73.9797527

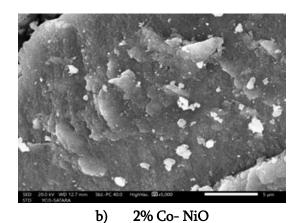
3.2. Surface morphology studies

SEM images of the pure NiO nanoparticles and those doped with 2% and 4% cobalt, taken at various magnifications, are presented in Figure 3 (a, b, c) respectively. The morphological features of all samples were nearly identical, indicating that the addition of cobalt did not affect the crystal structure, thus confirming the

incorporation of cobalt into the Ni lattice site. However, increasing the doping concentration resulted in a significant reduction in particle size and aggregation.



a) Pure NiO



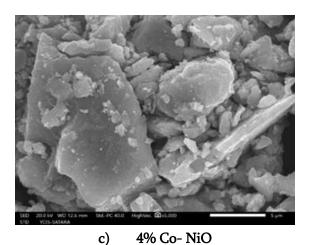


Fig.3 (a,b,c) SEM images

3.4. Optical Analysis The UV-visible absorption spectra of pure and cobalt-doped nickel oxide nanoparticles at 2% and 4% are shown in Fig. 5. The band gap and absorbance of each nanoparticle were examined in the 200–800 nm range in order to examine the impact of Co doping concentration on the optical characteristics.

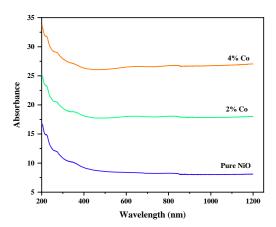


Fig. 5 UV-VIS. absorption spectra

The UV-visible absorption spectra of pure and cobalt-doped nickel oxide nanoparticles at 2% and 4% are shown in Fig. 5. The band gap and absorbance of each nanoparticle were examined in the 200–800 nm range in order to examine the impact of Co doping concentration on the optical characteristics [23]. XRD and SEM studies also supported the rise in crystallite and grain sizes. By using the Tauc relationship, the optical band gap of NiO NPs has been assessed [22]. A number of variables, including oxygen deficiency, band gap, impurity centres, particle size, lattice strain, and surface roughness, affect absorbance in general [21].

$$\alpha h \nu = A (h \nu - Eg)^n \qquad ----- (5)$$

where α is absorption coefficient, and $n=\frac{1}{2}$ for direct band gap semiconductor. An extrapolation of linear region of plot of hv vs $(\alpha hv)^2$ gives the value of band gap Eg as shown in Fig. 6

The direct band gap of pure NiO NPs was calculated to be 3.90 eV. The optical band gap of Co-doped NiO NPs decreased with the increase in Co doping. The Eg values were found to be 3.60 and 3.50 eV for samples that were doped with 2% and 4% of cobalt, respectively. It was found that the optical band gap was gradually decreased with Co doping. The decrease in the optical band gap of NiO with the increase in Co-doping may arise due to the replacement of substituted ions in the NiO lattice. Such Co ions introduce some additional energy levels in the NiO band gap near the valence band edge thereby decreasing the energy of direct transition [23]. The band gap of cobalt oxide (about Eg=1.6 eV) is smaller than that of NiO (3.05 for the present work), therefore, band gap of Co-doped NiO should be smaller than the band gap of pure NiO as suggested by the obtained results [24].

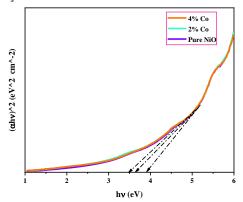


Fig. 6 Bandgap spectra

IV. CONCLUSION

The nanoparticles of Pure and Co-Doped NiO Nanoparticles have been successfully synthesized by a simple precipitation method at room temperature. XRD analysis shows the sample prepared are in a cubical phase. The broad peak of XRD pattern indicates nanocrystalline behavior of the particles. The morphological characteristics of all the samples were almost indistinguishable, suggesting that the introduction of cobalt had no impact on the crystal structure. This finding confirms that cobalt was successfully integrated into the Ni lattice site. The UV-Vis shows an increasing absorption at the edge of UV – region and decreasing in the visible region for both pure and cobalt-doped NiO nanoparticles. The estimated band gap of pure NiO nanoparticles is 3.9 eV. However, as the concentration of Co doping increases, the band gap value decreases to 3.6 eV and 3.5 eV for Co concentrations of 2% and 4%, respectively.

Conflict of interests

Authors declare that they have no conflicts of interests.

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Tungsten Oxide Thin Film Synthesized by Electrodeposition for Electrochromic Applications

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ABSTRACT

Electrodeposited tungsten oxide (WO3) thin films have shown better performance in electrochromic applications due to the formation of finer particles on the substrate surface and improved contact between the substrate surface and film. In the present work, we have synthesized WO3 thin films on FTO at ambient conditions and checked the electrochromic performance in lithium percolate electrolyte solution. In addition, various physical properties of the films were studied. The XRD reveals the amorphous nature of the WO3 thin film materials. In the morphological structure evaluation, the crack structures of WO3 nanomaterials were observed. FTIR optical studies confirmed the W-O materials' stretching vibration nature. The 0.3M of WO3 nanomaterials exhibit a higher coloration efficiency of 192.20 mC cm-2 at 630 nm, fast switching time (coloration time = 1.29s, bleaching time = 1.22 s,). The present report suggests that the anodic electrodeposition of WO3 thin film is highly efficient for electrochromic applications.

Keywords: WO3 thin films, Electrochromic Property, Coloration Efficiency, Cracks Morphology, Nanoparticles.

I. INTRODUCTION

Some materials exhibit reversible changes in color under the influence of light, and heat. These phenomena are respectively called photochromism and thermochromism [1]. Some materials show reversible changes in color under the influence of an electric field. This phenomenon is called Electrochromism. Materials showing Electrochromism are called Electrochromic materials [2] This phenomenon occurs due to electrochemical oxidation and reduction reactions of the electrochromic material caused by an applied electrical current or potential [3]. Electrochromic materials broadly can be categorized into 1) Inorganic and 2) Organic Materials. Inorganic electrochromic materials (EC materials) are mainly oxides of transition elements [4].

In transition metal Electrochromic materials, Tungsten(W) shows a remarkable change of coloration and decoloration upon applying an Electric field. Tungsten Oxide is the most reviewed Electrochromic material due to its Electrochromic properties. Tungsten trioxide powder is found to be yellow to greenish-yellow in color. Berzelius had reported in the year 1815 that the color of tungsten trioxide changes when hydrogen was



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passed over gently warmed tungsten trioxide [5]. Tungsten trioxide (WO₃) can be colored deeply by light irradiation of appropriate energy. This phenomenon is called photochromism [6]. So WO₃ is a photochromic as well Electrochromic material. In this article, we have deposited WO₃ on FTO glass by an electrodeposition method. The precursor solution used in this article is Tungstic acid. In this article concentration of the precursor solution is changed and the electrochromic behavior of the WO₃ film was studied.

II. SYNTHESIS AND CHARACTERIZATION

The AR grade Tungstic oxide H₂WO₄ powder was dissolved in double distilled water. The solution was kept for magnetic stirring with RPM near 400 for 15 minutes. While stirring, the Ammonia was then dropwise added to the Solution. The addition of the Ammonia was restricted till we get a pH equal to 12. After 15 minutes of stirring the solution was filtered with filter paper. We get a clear solution. This solution was then used for Electrodeposition. Meanwhile, FTO glass (of size 1x3 cm²) was washed and cleaned with Acetone. The FTO glass was further cleaned by keeping it in a sonicator for 15 minutes. The electrodeposition was done by a three-electrode system. The FTO glass was used as the working electrode. Platinum was used as the counter electrode. Electrodeposition time was set for 900 seconds. The dried films were then tested for Electrochromism by taking Cyclic Voltammetry using a 608E CHI instrument. UV spectrum and XRD, SEM of the films were taken for further analysis and characterization.

III. RESULT AND DISCUSSION

X-Ray Diffraction Analysis

The X-Ray Diffraction (XRD) of WO₃ deposited on FTO was analyzed for its crystallographic studies as shown in Fig. 1. The XRD analysis of deposited WO₃ does not show any sharp or intense peak. XRD reveals that the prepared WO₃ nanomaterials are of a semi-crystalline nature. The observed WO₃ peaks are well matched with the JCPDS card 01-072-1465 at 2θ values is 17.46, 26.43, 31.21, and 38.80, and the miller indices are (020), (111), (031), and (211) respectively [7]. The observed peaks on FTO, show the peaks (*) at 2θ values are 33.8°, 37.59°, 51.75°, 54.64°, 61.39°, 65.2°, 78.65° [8]. The rest of the part in the graph shows the amorphous nature of the films of WO₃ on substrates of FTO.

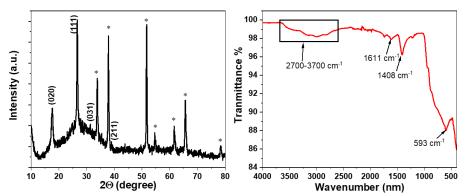


Fig. 1 (a) X- Ray Diffraction plots of WO₃ films, (b) FTIR spectra of WO₃ films.

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FTIR Analysis

The FTIR spectra of the prepared WO₃ samples produced at 0.3M are carried at 4000 cm⁻¹ to 400 cm⁻¹ wavenumber as shown in fig. 2. The pure WO₃ samples have a sharp and intensive FTIR peak near 593 cm⁻¹, assigned to the W–O–W bridging vibration bond at the corner-sharing of the octahedron in the WO₃ crystal [9]. The broadband in the 2700–3700 cm⁻¹ region and 944 indicates that the hydroxide (–OH) group is present in samples. The sharp peaks observed at around 1409 cm⁻¹ indicate the presence of the NH⁺ complex and water molecules in WO₃. In addition, the peak at 841 cm⁻¹ was observed which corresponds to the O–O vibrational bond with W–O–W bridging bond [9].

SEM Analysis

Fig. 3 (a & b) shows the SEM morphological images of tungsten oxide (WO₃) deposited on the FTO substrates at ambient conditions. The WO₃ deposited on FTO depicts the cracked morphological structures with sizes 100-200 nm including the existence of dense interconnected granular morphological structures. The FTO indicate the uniform growth of WO₃ grains with cracks on their entire surface. The observed cracks are more suitable for the discussion of the electrolyte ion intercalation-deintercalation process which is investigated in further electrochromic studies.

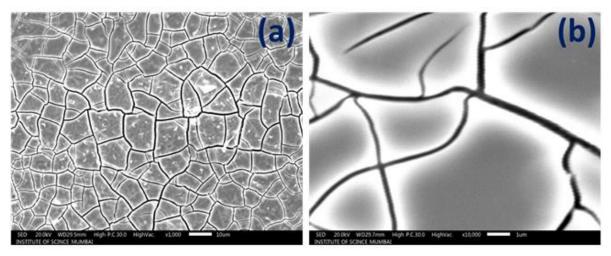


Fig. 3 SEM images of WO₃ films on FTO thin film at higher and lower magnifications.

Electrochromic Analysis

Fig. 4 (a) shows the CVs of WO₃ materials analyzed using a scan rate of 100 mVs⁻¹ in 0.5M LiClO₄ + PC electrolyte. Fig. 4 (a) demonstrates that the current density of WO₃ deposited on FTO is a larger current density, which promotes higher diffusion. Therefore, FTO has been considered in further EC studies. Also, in WO₃ nanomaterials +0.15 V anodic bleaching starts while cathodic coloration starts at -0.36 V. This shows a slight quasi-reversible behavior of WO₃ nanomaterials Strong reversibility of WO₃ deposited on FTO indicates that the films continue to operate as effective intercalation/deintercalation hosts, indicating remarkable endurance. The redox couple is shown below in the coloration and de-coloration states [9].

 $WO_3 + xLi^+ + xe^- \rightarrow Li_xWO_3$ (Bleaching state) (Blue coloring state)

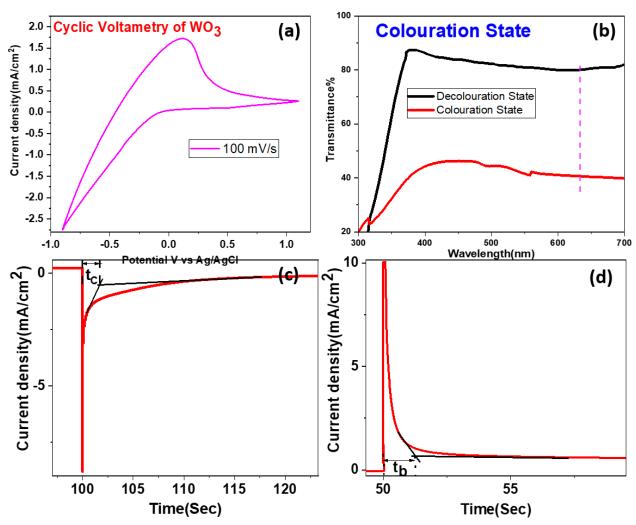


Fig. 4 (a) Cyclic Voltammetry (CV) curves (b) CE analysis coloration curve, (C) coloration state response time curve (d) Bleaching state response time curve of binder-free WO₃ films.

In figure 4(b), we observed the reversible nature of the blue to transparent color [9] and the CE was calculated using the following relations [9].

Coloration Efficiency (CE) =
$$\frac{\Delta OD}{Q_i}$$
 ----- (4)
Optical Density (ΔOD) = $log_{10} \left(\frac{T_b}{T_c}\right)$ ----- (5)

Where ΔOD is optical density, Q_i is the Coulombic charge accumulated during the coloration and decoloration states, and T_b and T_c are the transmittances of the materials during the bleaching and coloration state. Here, the Q_i value observed during the coloration cycles is 0.0018 C, and ΔOD is 0.3444, also the coloration efficiency value for WO_3 deposited onto FTO is 193.20 cm²C⁻¹, at 633 nm wavelength. The required response/switching time of WO_3 was measured using chronoamperometry (CA) analysis of -0.8 to 1.1V for 50 seconds (Fig. 4 (c&d)). The WO_3 electrodes exhibit the coloration states at the negative sweep potential owing to the Li⁺ ions intercalated in bulk materials. Similarly, this material shows the de-coloration

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state at anodic potentials due to Li^+ deintercalation. The observed response time of the WO_3 nanomaterials for coloration is 2.62 s and de-coloration is 3.0 s from the CA analysis.

IV. CONCLUSIONS

One-step WO₃ nanomaterials were successfully deposited on FTO by using electrodeposition. The analysis of XRD and FTIR confirmed that the WO₃ can be successfully deposited on various substrates. The SEM analysis shows that WO₃ is a crack morphology. The CV analysis revealed that the as-deposited WO₃ is highly reversible at a potential of -0.9V to 1.1V. The observed maximum coloration efficiency of the FTO is sss193.20 cm²C⁻¹ at 633 nm wavelength. The fastest electrochromic coloration and beaching response times of nanostructured WO₃ are 1.29 and 1.22 s. Thus, prepared one-step binder-free WO₃ nanostructured materials on FTO substrate are highly efficient for electrochromic (EC) applications.

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Effect of Composition on Structural and Magnetic Properties of Nano-Crystalline Mg_{0.6-x}ni_xzn_{0.4}Fe₂O₄ Spinal Ferrite

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ABSTRACT

In the present work nanoparticles of Magnesium Nickel Zink Ferrite ($Mg_{0.6-x}Ni_xZn_{0.4}Fe_2O_4$) for x=0.3 synthesized by sol-gel auto combustion method. Prepared sample were sintered at different temperature such as 150°C, 300°C and 450°C. Formation of single phase cubic spinel structure without addition of other peaks confirmed from XRD pattern. Infrared spectra were recorded at room temperature in which wave number ranging from $250-500~cm^{-1}$. Surface morphology of sintered sample was studied by using SEM. The magnetic properties of prepared sample for different sintering temperature are carried out by using VSM. Chemical composition for prepared sample is confirmed by using EDAX.

I. INTRODUCTION

Now a day spinal ferrite nanocrystal has been widely investigated due to their remarkable electrical, magnetic properties and wide practical application in memory storage system, medical diagnosis, magneto-caloric refrigeration and ferrofluide technology [1]. To see the demand of high performance device, an important step is to synthesis ferrite crystals in nanoscale. At the nanoscale crystal exibit in a single domain state hence the domain wall resonance is avoided and material can work at higher frequencies [2]. Large number of techniques are used to the formation of nano-sized ferrites such as organic precursors [3], cathodic electrophoretic deposition (EDP) [4], mechanochemical synthesis [5], reverse micelle [6], electrochemical deposition [7] and utilizing egg-white [8]. More recently, cost effective sol-gel auto combustion method is used.

II. EXPERIMENTAL

Magnesium Nickel Zink nanoparticle ferrite was synthesized by sol-gel auto combustion method by using precursor such as zinc nitrate, ferric nitrate, magnesium nitrate and citric acid. All reagents are analytical



reagent (AR) grade. The stoichiometry formula used for the preparation of nanoparticles is $Mg_{0.6-x}Ni_xZn_{0.4}Fe_2O_4$ (where x=0.3). For the formation of sol all the analytical reagent grade precursors are dissolved in distilled water separately. Then transfer all the solution in 1000ml biker put it on magnetic stirrer. Start continuous stirring and simultaneously heating to the solution for 4 hour. Then sol gets converted into gel formation. After completion of half hour gel get converted into ash form. After that prepared powder was cursed by using agate mortar for the formation of nanoparticles. Lastly prepared powder was sintered at different temperature such as $150^{\circ}C$, $300^{\circ}C$ and $450^{\circ}C$ for an hour.

III. RESULT AND DISCUSSION

Prepared sample was characterized by using X-ray diffraction (XRD), Scanning electron microscopy (SEM), Energy dispersive analyzing X-ray (EDAX), Fourier transformation infrared spectroscopy (FTIR) and Vibrating sample magnetometer (VSM) and results are discussed below.

3.1. XRD

The variation of diffraction intensity verses diffraction angle 2θ for the composition of Mg_{0.6-x}Ni_xZn_{0.4}Fe₂O₄ nanoparticles for x = 0.3 for different sintering temperature such as 150° C, 300° C and 450° C is show in fig. at this temperature, the single phase spinel, Mg_{0.6-x}Ni_xZn_{0.4}Fe₂O₄ was formed. There is a formation of most instance pack (311) which shows Fe₂O₄ and all other miller indices (220), (400), (422), (333) and (440) matches well with the reflections of the magnesium-nickel-zinc ferrite which reported in the standard card. The 2θ position are in agreement with standard JCPDS. The value of these peak positions are used to find the value of interplaner spacing (d) among the Bragg planes. By using Scherer formula average crystalline size (D) of all powder samples was calculated and is gradually decreases as sintering temperature go on increasing. In addition of these lattices parameter (a) can be calculated by using Millar indices (hkl) and interplaner spacing (d). These values found to be increases as sintering temperature decreases.

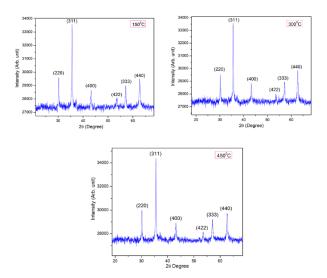


Fig. XRD of Mg0.6-xNixZn0.4Fe2O4 for x = 0.3 at temperature 150°C, 300°C and 450°C

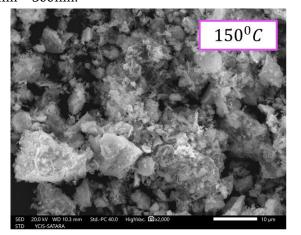
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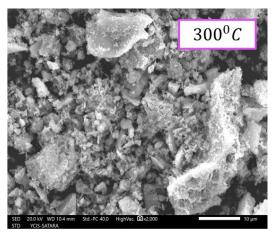
Different parameters calculated from XRD:

Temperature	150°C	300°C	450°C
X-Ray density (gm/cc)	5.245	5.156	5.128
Lattice Constant (Å)	8.311	8.359	8.374
Ionic Bond Length (A-O) (Å)	1.799	1.803	1.81
Ionic Bond Length (A-O) (Å)	2.07	2.089	2.093
Ionic radii RA (Å)	0.399	0.403	0.413
Ionic radii R _B (Å)	0.677	0.689	0.6936
Particle size (nm)	38	37	34

3.2. SEM

Scanning electron microscopy (SEM) of $Mg_{0.6-x}Ni_xZn_{0.4}Fe_2O_4$ nanoparticles for x=0.3 for different sintering temperature such as $150^{\circ}C$, $300^{\circ}C$ and $450^{\circ}C$ is show in fig. Average grain size are calculated it is found to be 200nm-300nm.





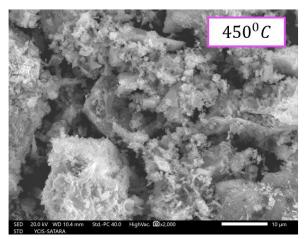


Fig. SEM of Mg0.6-xNixZn0.4Fe2O4 for x = 0.3 at temperature 150°C, 300°C and 450°C

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3.3. EDAX

Energy dispersive analyzing X-ray (EDAX) analysis of $Mg_{0.6-x}Ni_xZn_{0.4}Fe_2O_4$ nanoparticles for x=0.3 for different sintering temperature such as $150^{\circ}C$, $300^{\circ}C$ and $450^{\circ}C$ is carried out for the conformation of element which are present in the prepared sample those which are used in precursor. The presence of elements Fe, Mg, O, Ni and Zn is clearly shown in all area of the sample.

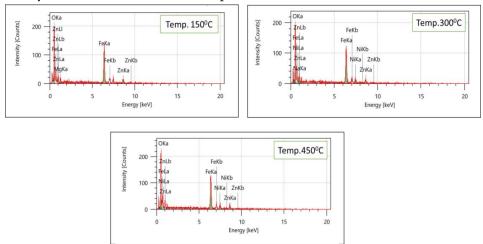


Fig. EDAX of Mg0.6-xNixZn0.4Fe2O4 for x = 0.3 at temperature 150°C, 300°C and 450°C

3.4. FTIR

FTIR spectrum analysis can be used for identify information about molecular bond attachment as a residual functional group of the chemical which are used in the synthesis of the sample. The formation of Mg_{0.6-x}Ni_xZn_{0.4}Fe₂O₄ nanoparticles for x = 0.3 for different sintering temperature such as 150°C, 300°C and 450°C between 250–500 cm⁻¹ is investigated by using Fourier transform infrared spectroscopy (FTIR) and results are presented in fig. from fig. high wave number ν_1 = 350 cm⁻¹ and low wave number ν_2 = 300 cm⁻¹ shows as the tetrahedron complex (M_{tetra}-O) and octahedral complex (M_{octa}-O). The vibrational mode for tetrahedral cluster are generally higher than the vibrational mode of octahedral cluster which is observed due to longer and shorter bond length of each cluster.

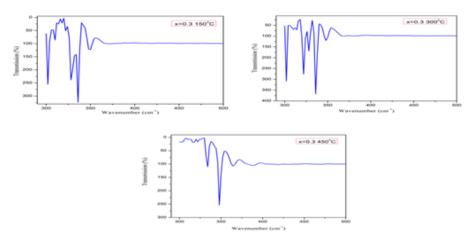


Fig. FTIR spectra of Mg0.6-xNixZn0.4Fe2O4 for x = 0.3 at temperature 150°C, 300°C and 450°C

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3.5. VSM:

The magnetic characteristic of $Mg_{0.6-x}Ni_xZn_{0.4}Fe_2O_4$ nanoparticles for x=0.3 for different sintering temperature such as $150^{\circ}C$, $300^{\circ}C$ and $450^{\circ}C$ were carried by using Vibrating Sample Magnetometer (VSM) at room temperature. VSM of the sample is shown in fig. The saturation magnetization is quite high of 32emu/gm. From graph there is a formation of loop which shows the prepared material is ferromagnetic in nature at room temperature.

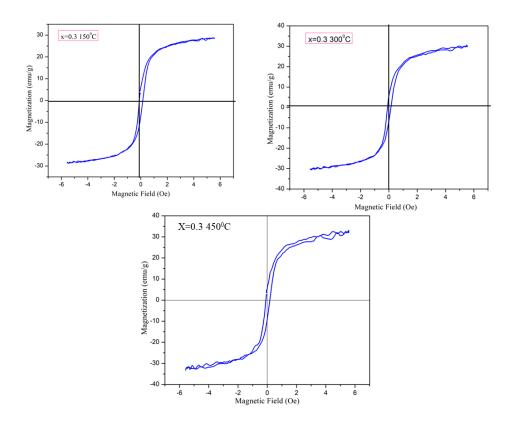


Fig. M-H Hysteresis loop of Mg0.6-xNixZn0.4Fe2O4 for x = 0.3 at temperature 150°C, 300°C and 450°C

IV. 4. CONCLUSION

 $Mg_{0.6-x}Ni_xZn_{0.4}Fe_2O_4$ for x=0.3 nanoparticle have been successfully synthesized by using metal nitrate and citrate sol-gel auto combustion route with enhanced magnetic properties. X-ray diffraction confirms the formation of single phase cubic spinal structure of sample. SEM analysis revealed average grain size of 200nm to 300nm. The magnetic properties of prepared sample for different sintering temperature are carried out by using VSM. FT-IR Spectra confirmed the formation of ferrite.

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Analytical Method Development and Validation of RP-HPLC Method for The Estimation of Methocarbamol in Bulk and Formulation

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ABSTRACT

A Reverse Phase High Performance Liquid Chromatographic (RP-HPLC) method was developed and validated for the estimation of Methocarbamol which is a new antiviral drug. The RP-HPLC was succeeded on a Phenomenex Luna® LC C18 column (150×4.6mm, $5\mu m$). The mobile phase was effective according to the polarity of studied drug. The mobile phase was consisting of Acetonitrile: Methanol: Water in the ratio of 30:50:20~v/v/v using at flow rate of 1ml/min. with injection volume of $20~\mu L$ was selected for this present work. Detection was made by using UV detector at 274nm. Retention time was found to be 1.9min. The developed method was validated according to the ICH guidelines. The calibration curve was linear for Methocarbamol in the concentration range of $10-50~\mu g/ml$ was good. The developed method was validated for Linearity, Precision, Accuracy and Robustness of Methocarbamol drug and was accurate, precise and reliable for the analysis of Methocarbamol in formulation. The Relative Standard Deviation for all the parameters were found to be less than 2 which shows the validated method and results obtained by this method is with fair agreement. Hence, this developed method can be easily effortlessly adopted for routine analysis for Methocarbamol in bulk and formulation.

Keywords: Methocarbamol, Method Development, Validation, RP-HPLC, ICH.

I. INTRODUCTION

High-Performance Liquid Chromatography (HPLC) is a technique in analytical chemistry commonly used to separate, identify, and quantify each component in a mixture. Analytical method development is the process of selecting an accurate assay procedure for the determination of composition of formulation. The analytical method must be developed using the protocol and acceptance criteria set out in International Council for Harmonization (ICH) guidelines Q2(R1). An analytical procedure is developed to test a defining characteristic of a drug substance or drug product against the predetermined acceptance criteria for that characteristic. Analytical method development and validation can be best understood as the process of showing that the analytical procedures are adequate for assessing the drugs, particularly the Active Pharmaceutical Product (API). Analytical test method validation provides a documented process,

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demonstrating that the analytical procedure employed for a specific test is suitable for its intended purpose, provides evidence of method's performance and ensures quality and reliability of results¹.

The chemical name of methocarbamol is 3-(2-methoxyphenoxy) -1,2 propanediol 1-carbamate Its molecular formula $C_{11}H_{15}NO_5$ and Its molecular weight is $241.41g/mol^{2,3}$.

$$O \rightarrow O \rightarrow NH_2$$

Fig.1: Structure of Methocarbamol

Methocarbamol is a muscle relaxant used to treat acute, painful musculoskeletal spasms in a variety of musculoskeletal conditions. There is, however, little published data on the drug's effectiveness and safety in treating musculoskeletal problems, particularly neck and back pain^{4,5}.

Methocarbamol may inhibit the effects of pyridostigmine bromide. Therefore, persons with myasthenia gravis who are using anticholinesterase drugs should utilize methocarbamol with caution⁶.

Side effects: -

- Most commonly drowsiness, blurred vision, headache, nausea, and skin rash⁷.
- Possible clumsiness (ataxia), upset stomach, flushing, mood changes, trouble urinating, itchiness, and fever 7,8.
- Bothtachycardia(fast heart rate) andbradycardia(slow heart rate) have been reported9
- May cause respiratory depression when combined with benzodiazepines, barbiturates, codeine, or other muscle relaxants¹⁰.

Although methocarbamol can cause jaundice, there is little evidence to support the claim that it also damages the liver. No laboratory evaluations of liver damage indicators, such as serum amino transferase (AST/ALT) levels, were performed during methocarbamol clinical trials to confirm hepatotoxicity. Although unlikely, it is impossible to rule out that methocarbamol may cause mild liver injury with use.

There is currently no known mechanism of action for methocarbamol. Instead of having a direct impact on skeletal muscles, its effect is assumed to be restricted to the central nervous system

In the literature survey, it was found that few RP-HPLC¹¹and UV-Vis Spectrophotometric methods were reported for the determination of Methocarbamol in the formulation.

The objective of this work is to establish the ideal chromatographic conditions for estimating methocarbamol in bulk and a formulation using the RP-HPLC method and to validate the results following ICH guidelines.

II. MATERIAL AND METHODS

Chemicals and reagents:

Methocarbamol was obtained as gift sample from Callidus Reserach Laboratories Pvt. Ltd Pune Maharashtra India.Acetonitrile Li Chrosolv® and Methanol Li Chrosolv® was purchased from Merck Life Science Private LTD, Mumbai.Robinax500mg tablet was purchased local market.

Instrumentation:

Younglin Acme 9000 with UV detector (UV730D), Software (Autochro-3000),Ultras onicator(Oscar Microclean 103), RC membrane 0.45 μ m, 25mmSyringe filters of Phenomenex and, Ultipor® N₆₆® Nylon 6,6 membrane 0.45 μ m, 47mm(Pall Life Sciences Pvt. Ltd, Mumbai) filters were used, electronic balance (Shimadzu AY220).

Chromatographic equipment and conditions

Chromatographic separation was achieved on a Phenomenex Luna® LC C18 Column (150 \times 4.6mm, 5µm). The mobile phase used for the separation of Methocarbamol was Acetonitrile: Methanol: Water in the ratio of 30:50:20 v/v/v. Flow rate was set at a 1ml/min at ambient temperature 30°C, an injection volume of 20µL. Using UV-Visible detector (UV730D) at wavelength of 274nm. The mobile phase was ultrasonicated for degassing and filtered through 0.45µm membrane nylon filter using vacuum pump before pumping into HPLC system.

Preparation of Mobile Phase

HPLC grade Acetonitrile, Methanol and Water were used for the preparation of mobile phase in the ratio 30:50:20v/v/v. Each component of mobile phase was filtered twice using $0.45\mu m$ membrane filter and degassed for 15min by sonicating each component of mobile phase.

III. PREPARATION OF SOLUTION

Preparation of Standard stock solution

Standard stock solution of Methocarbamol was prepared by transferring 10mg in 10 ml volumetric flask by using methanol as a diluent and volume was made up to mark and sonicated for 5min. (Conc.= $1000\mu g/ml$). 2ml standard stock solution was pipette out and transferred in to10ml of volumetric flask and volume was made up to the mark with same diluent and further added 20 ml of same diluent to get concentration $100\mu g/ml$.

Preparation of sample solution

Twenty Robinax 500mg of uncoated tablets were weighed, crushed, finely powdered and mixed well. A portion of tablet powder equivalent to weight of 10 mg of Methocarbamol was transferred to a 10 ml of volumetric flask and volume was made up to the mark with same diluent (Methanol) and sonicated for 15 minutes to complete dissolution of drug. The solution was filtered through Whatman filter paper no.1 to remove insoluble residue. The above prepared solution was further diluted to get required concentrations then analyzed the by proposed procedures.

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Analytical Method Development [19]

The proposed RP-HPLC method of analysis was validated following ICH Q2 (R1) guidelines by studying the parameters like system linearity, accuracy, assay, precision, suitability, specificity, LOD, LOQ and robustness.

IV. RESULTS AND DISCUSSION

Method Development The proposed RP-HPLC method was developed and optimized for a series of trials in a terms of mobile phase selection, composition, wavelength, choice of stationary phase of column, flow rate and column temperature. Methocarbamol showed the absorbance maxima at 274nm. Hence, the wavelength was selected as a working wavelength for the proposed RP-HPLC method.

Linearity and Range

The calibration curve was constructed between concentrations versus peak area by preparing in the concentration range of $10-50\mu g/ml$. The regression equation was found to be Y=11.38x+48 and correlation coefficient of Methocarbamol was noted at 0.997 (Fig. 2). Overlay of chromatograms of concentration 10-50 $\mu g/ml$ of Methocarbamol is shown in Fig.3. The ranged from $10-50\mu g/ml$.

Sr. No.	Concentration(µg/mL)	Peak Area		
1	10	169		
2	20	275		
3	30	379		
4	40	497		
5	50	627		

Table 1: Results of linearity

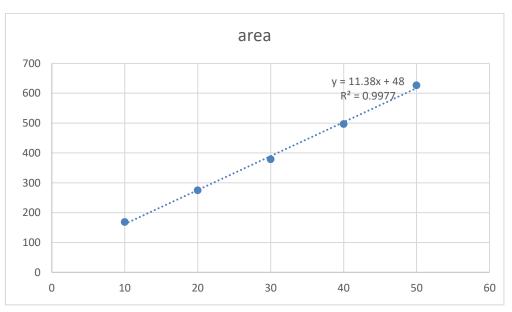


Fig. 2: Calibration curve of Methocarbamol

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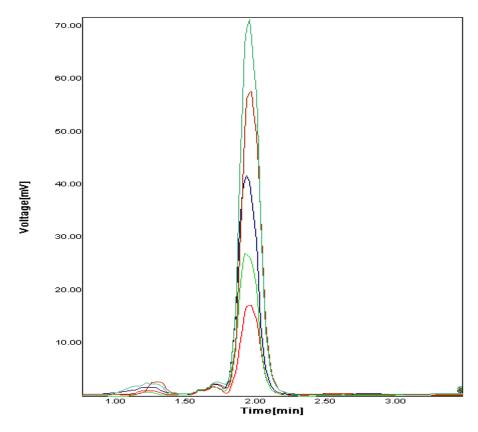


Fig. 3: Overlay of chromatograms of concentration 10-50µg/ml of Methocarbamol

Accuracy

The accuracy of the method was validated by analyzing three quality control samples of Methocarbamol representing three concentration levels covering the specified linearity range and then calculating the percentage recovery. It was obtained from 98.8-100% for the method which confirms the accuracy of developed method (Table 2).

Table 2: Accuracy result of Methocarbamol

Sr. no.	Recovery	Concentration	Amount recovered	% Recovery
	level in %	(μg/mL)	(μg/mL)	
1	80	16	15.90	99.37
2	100	20	19.6	98
3	120	24	23.9	99.5

Assay

The proposed method was successfully adopted for the determination of Methocarbamol in Robinax 500mg uncoated tablet. Percentage recovery of Methocarbamol was found to be 101.4% (Table 3). The method can be employed for routine analysis of estimation of Methocarbamol in the formulation.

Table 3: Assay result of Methocarbamol formulation

Tablet form	Amount taken	Amount found	% Content
Robinax 500mg	20μg/mL	20.29μg/mL	101.4

Precision

The % RSD values for intra-day and inter-day precisions were found to be < 2% for the proposed method which confirms the good precision of the method (table 4).

Table 4: Intraday and Interday Precision results of Methocarbamol

Injection	Peak Area		
	Repeatability Intermediate precision		te precision
		Day-1	Day-2
1	395	395	412
2	402	384	408
3	410	389	425
4	408	395	412
5	412	402	415
6	395	386	408
SD	7.50	6.73	6.31
%RSD	1.85	1.71	1.52

System suitability and Specificity

All the system suitability parameters such as retention time, tailing factor and theoretical plates were studied from standard chromatogram and to evaluate system suitability are given in Table 5. The analytical parameter of specificity study is to determine whether the effect of excipients and other additives that are usually present in the pharmaceutical formulations of Methocarbamol are interfering with the peaks of the analytes or not in optimum chromatographic conditions. The specificity of the study was determined by comparing test results of standard solution and sample solution. Chromatograms were observed and compared for interference of excipients (Fig.4)

Table 5: System suitability results of Methocarbamol

Sr. No.	Parameters	Observed Value
1.	Retention Time	1.9
2.	Theoretical Plates	2127
3.	Tailing Factor	1.13
4.	Resolution	2.9

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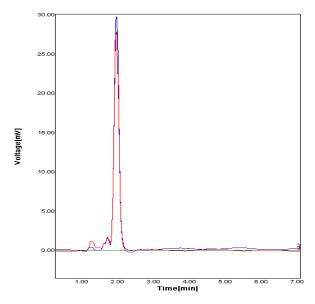


Fig. 4: Overlay of 20μg/ml standard solution chromatogram (Red), 30μg/ml of sample solution chromatogram (Blue) and blank (Green)

Limit of Detection & Limit of Quantification

The developed method was highly sensitive with LOD of 6.79µg/ml and LOQ of 20.39µg/ml.

Robustness

The robustness of the developed method was accessed by small changes in method parameters such as flow rate (± 0.1 ml/min), mobile phase composition ($\pm 1\%$) and detection wavelength (± 1 nm). The %RSD of robustness was found to be less than 2% of the proposed method (Table 6).

Table 6: Robustness result of Methocarbamol

Parameters	Area
Wavelength of UV detector	
273	395
274	390
275	394
Mean ± SD	393± 2.64
% RSD	0.673
Flow Rate	
0.9 mL/min	389
1 mL/min	394
1.1 mL/min	382
Mean ± SD	388.6± 5.5
% RSD	1.41

Table 7: Summary of Methocarbamol

Sr. No.	Parameters	Methocarbamol
1.	Linearity range (µg/ml)	10-50μg
2.	Regression equation	Y=11.38X+48
3.	Slope	11.38
4.	Intercept	48
5.	Regression Coefficient	0.997
6.	% Recovery (Accuracy)	98
7.	LOD (µg/ml)	6.78
8.	LOQ (µg/ml)	20.38

V. CONCLUSION

A novel RP-HPLC method was developed and successfully validated as per ICH guidelines for the estimation of Methocarbamol. All the results of various parameters were found to be within the acceptance limits. Hence the proposed RP-HPLC method for the analysis of Methocarbamol in bulk and its formulation was found to be specific, precise, accurate and fast.

VI. ACKNOWLEDGEMENT

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Smoking Status in Young Generation: A Review of Available Reports

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ABSTRACT

India is the world's fastest growing large economy, is Home to over 11% of the world's cigarette smokers but also has significantly larger proportion of population including in smoking tobacco in its alternative forms (e.g. bidis, hookah, chilam, shisha, and water pipes). In Maharashtra around 35% of men, 17% of women and 26.6% of adults either smoke tobacco or use smokeless tobacco. This increasing number of smoking habits in adults is a sign of danger for the government, because even after performing numbers of awareness programs by the Maharashtra State Government the numbers are rising. This study aimed to develop a questionnaire to assess smoking habits, attitudes, knowledge, and needs among the young generation. A questionnaire was developed starting from literature review and existing questionnaires which includes a total of 30 questions. Around 300 participants participated in the survey, out of which 39 females smoke cigarettes and 141 male smokes regularly, occasionally or only under the stressful condition patterns. This questionnaire will be used in a survey among students from College and universities to assess addiction habits among students and to spread more awareness about hazardous effects of smoking on health as a regular smoker or passive smoker. **Keywords**: Smoking, Tobacco, Student's, Cigarettes, Health care etc.

I. INTRODUCTION

to Health is the most important factor of life [1]. Smoking is the leading cause of death worldwide [2]. Tobacco use among youth is increasing day by day and it's estimated that most of the tobacco users start using tobacco products before the age of 18 years [3, 4]. Tobacco smoking is the biggest preventable cause of noncommunicable disease affecting both users and bystanders [5, 6]. The WHO states that there are more than 1.1 billion smokers globally and predicts 1 billion premature smoking related deaths during the twenty first century [7]. Globally out of every 10 girls 1 girl and out of every 5 boy's 1 boy use tobacco as smoking or in any other form [8, 9]. Smoking during adolescence and early adulthood has profound public health implications [10, 11]. Smoking has been consistently linked to heart disease, cancers, and premature mortality [12]. Smoking is a leading cause of illness and death worldwide [12]. Both active and passive smoking has dangerous effects on health, and the youth smoking habit is the leading cause of concern nowadays [13]. Smoking not only affects the smoker, but it also has detrimental effects on other people's health, especially children and women. Youth smoking is a time-bomb and needs to be curbed urgently, given its multifaceted

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harmful effects. India represents a complex public health challenge [14]. Each year in India more than 1 million adults die due to smoking and smokeless tobacco use accounting for 9.5% of overall deaths [15]. According to the Global Adult Tobacco Survey, the overall prevalence of smoking tobacco use is 10.38% and smokeless tobacco use is 21.38% in India [16]. Of all adults, 28.6% currently consume tobacco either in smoke or smokeless form, including 42.4% of men and 14.25 women [17-20]. There are 267 million tobacco users in India [21, 22], making it the country with the second largest number of tobacco users in the world (behind China) [23]. Approximately 100 million people ages 15 and older currently smoke tobacco [24, 25]. Tobacco use is higher in rural areas, among those with lower socioeconomic status and lower levels of education [26]. Various forms of tobacco use are responsible for an estimated 27% of all cancers in India [27]. Tobacco causes a substantial economic burden. Total costs attributed to all disease and deaths for those above 35 years was USD 27.5 billion [28]. In 2011, India banned food products containing nicotine, however a substantial number of people continue to use such products [29-33]. Tobacco harm reduction products such as ecigarettes and heated tobacco products face a nationwide government ban. Electronic cigarettes is the recent invention that can deliver nicotine without combustion. This can be a viable option for those who are unable to quit smoking [34, 35].

Firstly, smoking poses health risks that are often ignored by the youth who consider it a fashion statement [36]. Smoking can cause various types of cancer, including lung, bladder, pancreatic, and oral cancer. It can also lead to heart diseases, chronic obstructive pulmonary diseases, and stroke. Youth who start smoking early find it challenging to quit later, leading to long-term health effects. The addiction to nicotine makes smoking cessation an uphill task, leading to premature death. Smoking has social and psychological effects that impact youth's mental health and self-esteem. Smoking seems like an act of independence and rebellion by the youth, but it has negative social effects on their lives.

Smokers are often shunned from social events, and being ostracized by peers can lead to depression and low self-esteem. Moreover, addiction to nicotine can lead to irritability, anxiety disorder, and mood swings, further increasing stress levels and hampering the mental well-being of youth. Smoking has financial repercussions, leading to reduced social mobility, and ultimately leaving the youth dependent on others. The habit is expensive, and a smoker who spends around 22 rupees daily can quickly accumulate into thousands of rupees every year [37], leading to a strain on his financial capability. Moreover, smoking can lead to decreased productivity and physical and mental sickness, forcing youth to take time off work or limit their work opportunities, leading to a less-empowered life. 3 Passive smoking has serious side effects, particularly for non-smoking children and women. Young people, who passively inhale smoke, risk developing fatal diseases like lung and heart diseases, cancer, and respiratory problems, impeding their physical and mental growth. Pregnant women who come in contact with secondhand smoke may pass on serious health risks to their unborn child, leading to premature death or disability [38].

II. METHODOLOGY

A cross-sectional descriptive survey was conducted among university students to investigate the perception, level of knowledge, smoking trends, and its association with various diseases. The objectives of this study were explained to the respondents before taking their consent. To acquire the trust of participants, information about their national identity card, residents, name, and the mobile number was avoided. A Google form was created under the guidance of a project guide containing 30 questions and circulated in whatsapp groups and individual contacts of students, and asked them to fill the form while helping them with their queries.

III. RESULTS

About 400 participants were approached, 301 questionnaires were found complete which complies with the criteria of further analysis. The targeted audience age was in the range of 15-35 years old. 200(66.4%) of the respondents were male and 101(33.6%) were female. About 283(94.33%) of the respondents were students of graduation, diploma or 12th boards etc. 69(22.9%) students were regular smokers while 70(23.3%) smoked occasionally and 42(14%) students preferred smoking only in stress-full conditions or when they were under any stress. 120(39.9%) of the targeted population claimed to be non-smokers(Fig.1). After smoking 115(38.2%) population use clove cigarettes or bidis as another addiction, 44 chews tobacco, 78(25.9% population uses Nicotine replacement products, 112(40.5%) uses E-cigarettes and 21 supari while 27 people use cigar and 21 people uses tobacco pipes. For 155 people it is very easy to get tobacco products but 77 got it somewhat easy and it is not easy at all for 69 persons (Fig.2)

The prevalence of smoking among different age groups was 7.3% in 14-17 years old, 30.9% in 18-21 years, and 15.3% in 22 years old or older and 37(12.3%) of the population never became a regular smoker. Further details are given in table-1. The 135(44.9%) population thinks that smoking is cool out of which 103 are males and 32 are females. But 126 (68 Male/58 Female) think that smoking cigarettes isn't a cool thing (Fig.3). 6 students have tried smoking before the age of 8-9 years old, while the maximum number of population 100 tried a single puff when they were 14-17 years old, out of which 29 are female candidates and 66 students tried it after the age of 18-22 years old or older. After the age of 14 years 28 (99.3%) of the population had tried whole cigarette, 44(14.6%) 16-17 years old, 61(20.3%) 18-21 years old and 21(7%) after the age of 22 or older (Table-1).

14.3% population craved cigarettes if they didn't smoke regularly, while 23.6% people claimed that smoking relaxes them, 15.99% smoking helps them in better concentration and focus while 18.3% population feels less stressed after smoking. 60 people gets buzz after smoking and 53 enjoyed the taste (further details in Table-1). 20.3% population smokes 2-5 cigarettes in one day in which 14 are females and 47 are male students. 6 females smokes 6-10 cigarettes per day and 15 females smoke 1 or less than 1 cigarette per day. While in male population 47 smokes 2-cigarettes per day, 34(6-10 per day), 20(11-20 per day) and 9(21 or more cigarettes

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per day)(Fig.6). The most common period of time for which the experimental smoking phase lasts is at least 1 year with 76 votes and at least 6 months with 46 votes.

The money expenditure on cigarettes of 64(21.3%) population is three thousand rupees while 50 people spend more than 5 thousands and 60 people spend 1 or 2 thousands. 92 persons have smoked 1 or more cigarettes per day for 30 days straight and 164 haven't. (32.3%) of the population smoke their first cigarette after 60 minutes of waking up, 34(11.3%) after 31-60 minutes, 21(7%) 6-30 minutes, and 11(3.7%) within 5 minutes. The most preferred places for smoking are friend's home, social events, and in public places (e.g. parks, shopping centers, street corners) with 87, 86 and 84 respective votes followed with at home 47, school 30, and at work 45(Fig.5). When the audience were asked about will they smoke even if they are so ill that they are in bed most of the day, 26.2 % (68 males and 11 females) population said yes and 57.1% people said no.

Talking about the cigarette habits in the younger generation, 100(32.2%) of the population thinks that about half the people of their age smoked, 56(18.6%) people think that almost every one of their age smoke and 49 people said that it's not at all common to smoke. About 52(17.3%) people said yes when they were asked about whether they had discussed the reasons why people smoke in their school, and 140(46.5%) said no. When asked about while they were growing up, did their parents/guardians smoke inside their home, 34(11.3%) said yes and 209(69.4%) said no. Most of the population don't have any brothers or sisters who lived with them smoke 53.5% and 11.3% have addicted siblings. Near about 60 person's parents smoked in their house (Table-1)

In this survey it is found that the rate of smoking amongst is increasing because almost 50% target audience confirmed the smoking habit of their friends who have been allowed smoking in their workplace or in designated smoking area. 32.9% of the population smoke cigarettes during the past 30 days almost every day, and 18.9% smoked for some days while 56 people didn't smoke. Although 67.1% of the population believe that smoking cigarettes could be harmful to their health. Some of the targeted audience are suffering from heart disease, eating disorders, manic depression etc. Hence 42.5% of the population have agreed that health issues, self-initiation including disease prevention can be the reason to quit smoking, 41.9% people are interested in quitting smoking very strongly (89 males & 37 females), 58 strongly(Fig.4), and if they decided to quit smoking completely, 41.5% population is very strongly confident that they will succeed.

IV. CONCLUSION

The average age of being a regular smoker was discovered to be 18-21 years in this study. The possible reason could be the social influence because, at this age, students are influenced more by their companions than guardians. A comparable pattern was found in a study claiming that the average age of onset of smoking is 18 years for males and 24 years for females. Several factors were found associated with smoking and may have a critical impact on smoking initiation; however, anxiety, stress, and social influence were the fundamental reasons cited by the people. A possible explanation could be that at a certain age students tend to be friends with smokers and would prefer not to be left out of the group of companions merely on the reason for not smoking cigarettes. Several youths believe that "smoking makes you cool" and that smokers have more

friends. There exist many perceptions that relate smoking with the facts that it enhances one's image, relieves boredom, and helps in easing stress-related issues. This study suggests that smoking initiation among young adults is stimulated by smoker peers, the attitude of family members, their educational performance, gender, ethnic belonging, socioeconomic status, and psychological distress. About half of the respondents do not believe to be at risk of any disease associated with smoking while the other half believe to be at risk of respiratory problems or might have suffered from respiratory problems due to cigarette smoking. That most of the students is aware of the harms of both active and passive smoking on health but proper counseling and training were required for smoking cessation and that training should be the part of the education. The administrative staff of universities and accredited bodies should work in the same direction for the implementation of separate integrated programs about smoking awareness and cessation. Health education programs should be promoted considering the baseline data of the students' own beliefs relating to their behaviors about smoking attitudes. In conclusion, the youth smoking habit is a matter of grave concern, and its effects range from physical, mental, social, and financial implications. The government and other stakeholders must implement policies and programs that educate the youth on the harmful effects of smoking and provide assistance to help people quit smoking altogether. The youth must also take responsibility for their lives and say no to smoking, as their health, future, and that of those around them are at stake. Therefore, it is essential to create awareness among the youth about the risks of smoking and reduce the prevalence of smoking habits among them.

Table: 1 Smoking behavior and exposure

Questions		Anchors	Responses	
Age(years)			15-35 years	
Sex		Male	200 (66.4%)	
		Female	101(33.6%)	
		Transgender	0	
Do you use any	of the following tobacco or nicotine	Chewing tobacco	44(14.6%)	
products? Chew	ring tobacco or snuff_cigars_tobacco_			
pipes, clove ciga	arettes or bidis, nicotine replacement	Cigar	27(7%)	
products such a	as gum patch, or any other tobacco			
products besides	s cigarettes?	Tobacco pipes	21(7%)	
		Clove cigarettes	115(38.2%)	
		Nicotine replacement products	78(25.9%)	

Questions	Anchors	Responses
	E-cigarettes	112(40.5%)
	Mawa supari	66(21.9%)
	None	125(41.5%)
How easy would it be for you to get tobacco products if you wanted some?	Very easy	155(51.5%)
	Somewhat easy	77(25.6%)
	Not easy at all	69(22.9%)
Do you smoke?	Yes	69(22.9%)
	No	120(39.9%)
	Occasionally	70(23.3%)
	When I am under stress	42(14%)
When did you become a regular smoker?	I have never being a regular	37(12.3%)
		3(1%)
	Refore age of 10	
		6(2%)
	10-13 years old	
		22(7.3%)
	14-17 years old	93(30.9%)
	18-21 years old	
	,	46(15.3%)
	22 years old or older	
		94(31.2%)
	NA	
Why did you become a regular smoker?	I have never been a regular	39(13%)
		433(14.3%)
	I craved cigarettes if I didn't	
	,	44(14.6%)

Questions		Anchors	Responses	
	_	I was around smokers a lot of		
		the time	41(13.6%)	
-		I found smoking pleasurable	60(19.9%)	
		I got a "buzz" when I smoked	53(17.6%)	
		I enjoyed the taste	71(23.6%)	
		Smoking relaxed me	48(15.9%)	
-	_	Smoking helped me focus and		
		concentrate better	55(18.3%)	
		Smoking made me feel less	30(10%)	
			13(4.3%)	
	_	I smoked to fit with other	,	
		people	4(1.3%)	
-	_	I liked the image of the smoker		
			8(2.7%)	
	_	Smoking helped me to control my weight		
_		, ,	6(2%)	
	_	Since others in my family		
		smoked, it was easy to see myself as a smoker too	96(31%)	
-		Other		
-		NA		
Do you think the	at smoking is cool?	Yes	135(44.9%)	
		No	126(41.9%)	
		Don't know/not sure	40(13.3)	

Questions		Anchors	Responses	
How old where a single puff?	you when you tried a cigarette, even	I have never smoked cigarette	111(36.9%)	
3 1		7years old or younger	3(1%)	
		8 or 9 years old	6(2%)	
		10 or 11years old	21(7%)	
		12 or 13 years old	20(6.6%)	
		14 or 15 years old	24(8%)	
		16 or 17 years old	50(16.6%)	
		18 or 21 years old	50(16.6%)	
		22 year old or older	16(5.3%)	
How old were cigarette?	you when you smoked an entire	I have never smoked cigarette	111(36.9%)	
eigarette.		7 years old or younger	0	
		10 or 11 years old	10(3.3%)	
		12 or 13 years old	25(8.3%)	
		14 or 15 years old	28(9.3%)	
		16 or 17 years old	44(14.6%)	
		18-21 years old	61(20.3%)	
		22 years old or older	21(7%)	
· ·	your experimental smoking phase	Less than 1 month	10(3.3%)	
indicate the lensmoking before	ngth of time you experimented with you stopped completely. If you are please indicate the amount of time	At least 1 month, but less than 6 months	13(4.3%)	

Questions	Anchors	Responses
you experimented with smoking before becoming a regular (daily or almost daily) smoker.	At least 6 months, but less than 12 months (1 year)	46(15.3%)
	At least 1 year, but less than 2 years	76(25.2%)
	•	19(6.3%)
	4 years or more	
		30(10%)
	Don't know/ not sure	
		107(35.5%)
	NA	
How many cigarette did you smoke in a day?	Less than 1 Cigarette per day	19(6.3%)
	1 Cigarette per day	25(8.3%)
	2-5 cigarette per day	61(20.3%)
	6-10 Cigarette per day	40(13.3%)
	11-20 Cigarette per day	23(7.6%)
	21 or more cigarette per day	9(3%)
	NA	124(41.2%)
How much do you spend per month on smoking?	1 k	30(10%)
	2 k	30(10%)
	3 k	64(21.3%)
	More than 5 k	50(16.6%)
	NA	127(42.2%)
At any time in your life, have you smoked 1 or more cigarettes per day for 30 days straight?	Yes	92(30.6%)
more eigarettes in a may ma manays straight.	No	164(54.5%)

Questions		Anchors	Responses	
		NA	45(15%)	
	waking up, do you smoke your first	After 60 minutes	97(32.2%)	
Cigarette?		31-60 minutes	34(11.3%)	
-		6-30 minutes	21(7%)	
-		Within 5 minutes	11(3.7%)	
=		NA	138(45.8%)	
Where did you s	moke usually?	At home	47(15.6)	
-		At school	30(10%)	
-		At work	45(15%)	
-		At friend's home	87(28.9%)	
-		At social events	86(28.6%)	
-		In public places (e.g. parks, shopping centers, street	84(27.9%)	
_		, , , , , , , , , , , , , , , , , , ,	121(40.2%)	
		NA		
Do you smoke e bed most of the	ven if you are so ill that you are in	Yes	79(26.2%)	
Sea most of the	,	No	172(57.1%)	
-		NA	50(16.6%)	
Is it common cigarettes?	for people of your age to smoke	Not at all common	49(16.3%)	
		Less than half the people my	42(14%)	
_			100(32.2%)	
		About half the people my age		

Questions	Anchors	Responses
	smoked	56(18.6%)
	Almost everyone my age smoked	54(17.9%)
	Don't know/Not sure	
When you were in school, did you discuss the reasons why people smoke in any of your classes?	Yes	52(17.3%)
reasons will people amount in just just a same	No	140(46.5%)
	I didn't attend	63(20.9%)
	Don't know/Not sure	46(15.33%)
While you were growing up, did your parents/guardians ever ask nearby smokers to stop	Yes	106(35.2%)
smoking?	No	151(50.2%)
	Don't know/Not sure	44(14.6%)
While you were growing up, did any of your parents/guardians smoke inside your home?	Yes	53(17.6%)
	No	209(69.4%)
	Don't know/Not sure	39(13%)
. While you were growing up, did any of your brothers or sisters who lived with you smoke?	Yes	34(11.3%)
	No	161(53.5%)
	Don't know/not sure	69(22.9%)
	I don't have any brother or sister who lived with me while I was growing up	37(12.3%)
While you were growing up, what was your oldest age when at least one of your parent/guardians	None of my parents/guardians	171(56.8%)
smoked?	ир	10(3.3%)
	6 years old or less	12(4%)

Questions	Anchors	Responses
	7-10 years old	30(10%)
	11-13 years old	30(10%)
	14-21 years old	48(15.9%)
	Don't know/not sure	
Did any of your closest friends smoke cigarettes?	None	76(25.2%)
	Yes	60(19.9%)
	Most of all	138(45.8%)
	Don't know/not sure	27(9%)
23. Is smoking allowed in any of the following areas in your workplace?	In my work area	58(19.3)
	In common area (lobbies, rest rooms, lunch rooms	79(26.2%)
	In designated smoking areas	93(30.99%)
	Don't know/not sure	63(20.9%)
	Smoking was not allowed anywhere in my work place	71(23.6%)
	I was not working during my experimental smoking phase	51(16.9%)
	I don't smoke	69(22.9%)
During the past 30 days (1 month) on how many days did you smoke cigarettes?	Every day or almost every day	99(32.9)
	Some	57(18.9%)

Questions	Anchors	Responses
	No days	56(18.6%)
	NA	89(29.6%)
Do you believe that smoking cigarettes could be	Yes	202(67.1%)
harmful to your <u>health?</u>	No	62(20.6%)
	Don't know/not sure	37(12.3%)
Have you ever suffered from any of the following health problems?	Heart disease	11(3.7%)
	Cancer	5(1.7%)
	Stroke	7(2.3%)
	Chronic bronchitis/ Emphysema	6(2%)
	Chronic cough	7(2.3%)
	Asthma	9(3%)
	Stomach or Duodenal ulcers	9(3%)
	Epilepsy, Seizures or Fits	10(3.3%)
	Previous Head injury	9(3%)
	Brain tumor	3(1%)
	Eating disorders	15(5%)
	Liver disease	6(2%)
	Manic-depression disease	22(7.3%)
	Kidney disease or Dysfunction	9(3%)

Questions	Anchors	Responses
	None	280(93%)
What will be the main reason if you quit smoking?	Advice of physician	28(9.3%)
	Health reasons, self-initiated including disease prevention	128(42.5%)
	Pressure from others, excluding physician	65(21.6%)
		55(18.3%)
	NA	
	Other	
How interested are you in quitting smoking?	Strongly	58(19.3%)
	Very strongly	126(41.9%)
	A little	46(15.3%)
	Not at all	11(3.7%)
	I don't smoke	60(19.3%)
If you decide to quit smoking completely, how confident are you that you will succeed?	Strongly	56(18.6%)
	Very strongly	125(41.5%)
	Some	42(14%)
	A little	10(3.3%)
	Not at all	10(3.3%)
	NA	58(19.3%)

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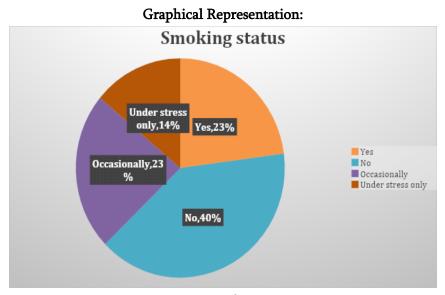


Figure 1: Smoking Status

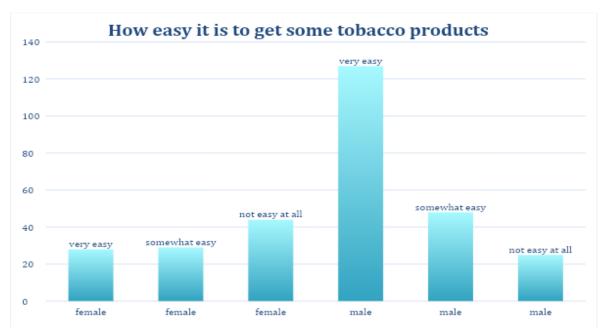


Figure 2: How easy it is to get some tobacco products

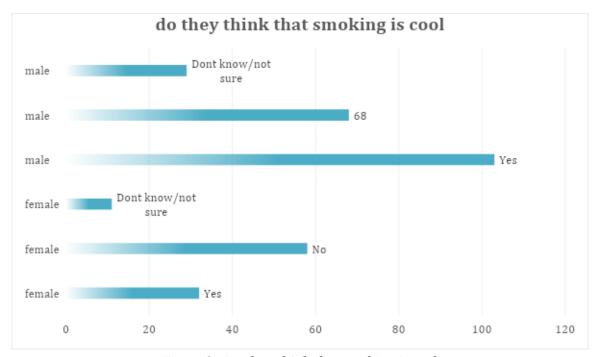


Figure 3: Do they think that smoking is cool

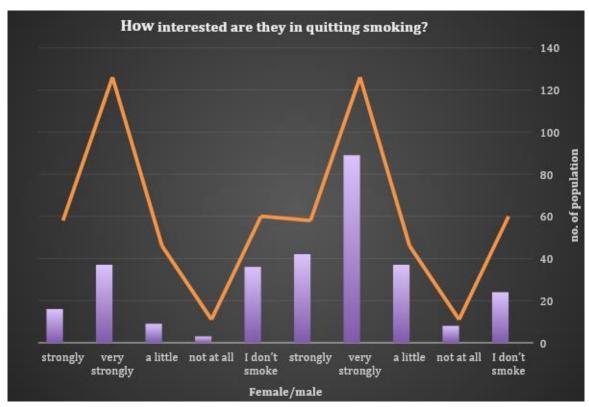


Figure 4: How interested are they in quitting smoking

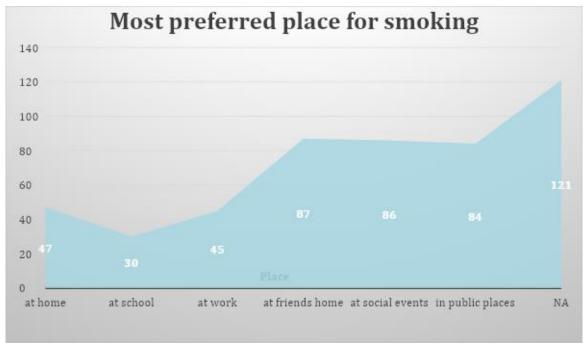


Figure 5: Most preferred place foe smoking

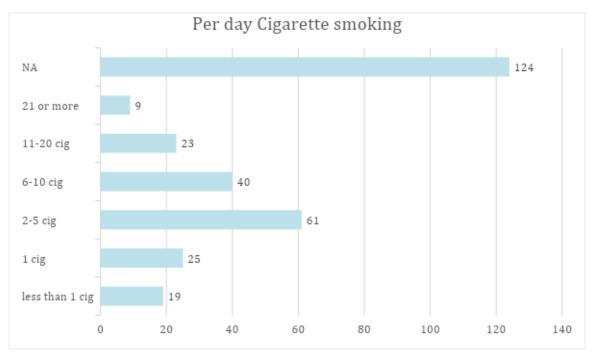


Figure 6: Per day cigarette smoking



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Green Approach to the Design of Synthesis of Benzopyran Derivatives by Using as Greener Gel Entrapped Catalysts

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ABSTRACT

A protocol has been developed for the efficient synthesis of structurally diverse terahydrobenzo[b]pyran via three-component reactions of dimedone, malanonitrile with various aldehydes and in the presence of gel entrapped NaOH as a catalyst.

Keywords: Gel Entrapped Base Catalyst, terahydrobenzo[b]pyran, recyclability

I. INTRODUCTION

Multicomponent reactions (MCRs) have attracted considerable attention owing to high synthetic efficiency, and, in many cases, the facile construction of novel molecular libraries. These methodologies are of particularly great utility when they lead to the formation of privileged medicinal scaffolds. Tetrahydrobenzo[b]pyransare an important class of heterocyclic scaffolds in the field of drugs and pharmaceuticals. These compounds are widely used anti-coagulant, anti-cancer and ancaphylactiaspasmolytic agents.¹⁻⁴ In addition, they have been shown to act as cognitive enhancers, for the treatment of neurodegenerative disease, including Huntington's disease, amyotrophic lateral Sclerosis, Alzheimer's disease, AIDS associated dementia and Down's syndrome as well as for the treatment of Schizophrenia and myoclonus.^{5, 6} The polyfunctionalized benzopyrans are used as cosmetics, pigments and biodegradable agrochemicals. Other than their biological importance, some tetrahydrobenzo by pyrans have been widely used as photoactive materials.8 Looking at their importance from pharmacological and industrial point of view, several methods for the multi-component synthesis of tetrahydrobenzo[b]pyrans have been reported. These include both homogeneous as well as heterogeneous conditions, catalyzed by Na₂SeO₄, hexadecyldimethylbenzyl ammonium bromide,9 NaBr,10 tetra-methyl ammonium hydroxide (CH3)4 N+OH-,11 TEBA, 12 KF-montmorillonite, 13 KF-alumina, 14 organocatalysts, 15 acetic acid, 16 diammonium hydrogen phosphate¹⁷ and hexadecyltrimethylammonium bromide. ¹⁸ Microwaves¹⁹ and ultrasonic irradiation²⁰ have also been used to promote the reaction. Although the literature on synthesis of tetrahydrobenzo[b]pyrans enjoys a rich array of versatile methodologies, new efficient approaches can be valuable additions to the contemporary arsenal of synthetic strategies.



The concept of gel entrapped base catalysts (GEBCs) combines the advantages of alkali and organic bases with those of heterogeneous supports. 21 These catalysts are prepared by immobilization of alkali or organic bases by entrapping them in an aqueous gel matrix of agar-agar which is a polymer composed of repeating agarobiose units alternating between 3-linked β -D-galactopyranosyl (G) and 4-linked 3, 6-anhydro- α -L-galactopyranosyl (G) units. The use of GEBCs in organic transformations abates the amount of bases used and affords easy and efficient separation of products from the catalyst simply by filtration. Often, bases like alkalis absorb moisture when exposed to air and get spoiled. On the contrary, the GEBCs do not absorb moisture on exposure to air and remain intact. They also provide excellent opportunity of recyclability and reusability which is rarely possible using bases alone as catalyst. Further advantages of GEBCs include their ease of handling and being less corrosive. However, despite of their well recognized advantages, there have been only limited and sporadic reports dealing with the use of GEBCs in organic synthesis. 22

In continuation to our research work devoted to the development of green methodologies for MCRs. 23 we report herein an efficient synthesis of tetrahydrobenzo[b] pyransfrom dimedone, malanonitrileand aryl aldehydes in the presence of Gel entrapped NaOH as a catalyst.

II. RESULTS AND DISCUSSION

We focused our initial studies on synthesis of Gel entrapped NaOH (acronymed as GENaOH). A series of experiments were under taken in which different concentrations of NaOH (5-25 %) were dissolved in a varying amount of agar-agar in water. After a considerable experimentation, we found that 20 % w/w of agaragar aqua gel containing 10 % NaOH resulted in the formation of soft gel that served as GEBC in the present work. The GENaOH was light yellow jelly like substance that could be cut into pieces .The changes in physical nature of GENaOH were studied in different solvents. The GENaOH swelled in water and become soft. The nature of gel remained intact in organic solvents like ethanol, acetone, dichloromethane, toluene and isopropanol. The TGA analysis of agar-agar and GENaOH are displayed in fig. The TGA profiles shows three different weight losses at different temperatures. The forth weight loss which occure below 150 °C for GENaOH as well as agar could be due to removal of physisorbed or occluded water. The second step of decomposition which is initial above 240 °C in both agar-agar as well as GENaOH differed in their amount of respective weight losses (GENaOH ~ 8%, agar- agar 63.5% could be assigned to thermal decomposition of agar polymer was agaragar. The decomposition of remaining polymer matrix is accompanied with ~21 % weight loss. Third step in the temperature range of 440-480 °C. On the other hand the additional exothermic weight loss centered at 710 °C is observed and could be assigned the decomposition of carbonates frame if any. The entrappment of NaOH in gel matrix is evidenced by the comparatively large residual weight observed in the TGA profile of GENaOH than that of agar-agar.

In order to assess the catalytic activity of GENaOH in the synthesis of tetrahydrobenzo[*b*]pyrans (**Scheme 1**), an equimolar mixture of dimedone, malanonitrile and benzaldehyde (5 mmol each) was stirred in the presence of 1 gm of GENaOH in ethanol at ambient temperature till the completion of reaction as monitored by thin layer chromatography. The reaction proceeded efficiently yielding the corresponding

tetrahydrobenzo[*b*]pyran in 91% yield in just 5-15 minutes. In order to check the generality of this methodology, a series of tetrahydrobenzo[*b*]pyrans were prepared by reaction of dimedone, malanonitrile with various aryl aldehydes. We were gratified to find that with both electron-poor and electron-rich benzaldehydes, the corresponding products were obtained in excellent yields. The reaction of the sterically hindered *o*-nitrobenzaldehyde even gave higher yields high lightening the general applicability of the protocol. The striking feature of all the reactions was the isolation of products. During the course of the reaction the product precipitates out and can be isolated simply by filtration. The product obtained after sufficient washing with water was found to be practically pure. The identity of all the compounds was ascertained on the basis of IR, ¹H NMR, ¹³C NMR and mass spectroscopy data. The physical and spectroscopic data are in consistent with the proposed structures.

It has been well established that in case of the GEBCs, the reagent trapped in the gel may leach into the solvent. To study the leaching of NaOH in solvent, 1 gm GENaOH was stirred in 5 mL of ethanol at room temperature. The GENaOH was filtered and water (3 mL) was added to the filtrate. The NaOH leached out was determined by titration with 0.1 N succinic acid solution using phenolphthalein as an indicator. The study revealed that only 3.91 % NaOH leached out from gel into ethanol. Using the amount of NaOH same as that leached out, the reaction between dimedone, malanonitrile and benzaldehyde did not gave quantitative yield of the corresponding product. This clearly demonstrated that catalysis was solely due to intact GENaOH rather than leached NaOH.

A proposed mechanism for the formation of tetrahydrobenzo[b]pyrans using GENaOH. The mechanism suggests that in step-1 Knoevenagel condensation takes place to form the α -cynocinnamonitrile derivative. In step-2 the active methylene of dimedone react with the electrophilic C=C double of α -cynocinnamonitrile giving the intermediate 6, which tautomerizes into 7. The latter is then cyclized by nucleophilic attack of the OH group on the cyano (CN) moiety, giving intermediate 8. Finally, the expected product 4 is afforded by tautomerizeation (8-4).

The use of catalyst is especially interesting when it can be used several times. To investigate the possibility of catalyst recycling, the reaction of dimedone, malanonitrile with benzaldehyde using GENaOH in ethanol was carried out. After completion of the reaction, the GENaOH was recovered by simple filtration, washed with ethanol and reused in another reaction with identical substrates. The catalyst could be reused for five runs without noticeable drop in the yield of product.

III. EXPERIMENTAL

Infrared spectra were recorded on a Perkin-Elmer FTIR spectrometer. The samples were examined as KBr discs ~5% w/w. ¹H NMR and ¹³C NMR spectra were recorded on a Bruker Avon 300 MHz spectrometer using DMSO/CDCl₃ as solvent and TMS as internal reference. Mass spectra were recorded on a Shimadzu QP2010 GCMS with an ion source temperature of 280 °C. The thermal gravimetric analysis (TGA) curves were obtained by using the instrument STA 1500 in the presence of static air at a linear heating rate of 10 °C/min

from 25 ° to 1000 °C. Melting points were determined in an open capillary and are uncorrected. All chemicals were obtained from local suppliers and used without further purification.

Preparation of gel entrapped NaOH

To a boiling mixture of agar-agar (20 Mg) in water (60 mL) was added a solution of NaOH (10 gm) in water (100 mL). The resultant solution was boiled with stirring for five minutes and cooled in ice bath to yield the desired GENaOH.

General procedure for the multi-component synthesis of tetrahydrobenzo[b]pyrans

A mixture of dimedone (5 mmol), malanonirile (5 mmol) and aryl aldehyde (5 mmol) was stirred in the presence of GENaOH (1 gm) in 5 mL of ethanol at ambient temperature till the completion of the reaction as monitored by TLC. The resulting crude product was filtered off, washed with water and recrystallized from ethanol to afford the desired product.

Scheme 1: GENaOH catalyzed multicomponent synthesis of tetrahydrobenzo[b]pyrans

Spectral data of representative compounds

2-Amino-3-cyano-5,6,7,8-tetrahydro-7,7-dimethyl-5-oxo-4-phenyl-4H-benzopyra: IR (KBr): υ 3396, 3323, 3213, 2961, 2199, 1976, 1660, 1371 cm⁻¹; ¹H NMR (300 MHz, DMSO-d₆): δ 1.05 (s, 3H), 1.12 (s, 3H), 2.21 (d, 1H), 2.22 (d, 1H), 2.44 (s, 2H), 4.39 (s, 1H), 4.50 (s, 2H), 7.17-7.31 (m, 5H); ¹³C NMR (75 MHz, DMSO-d₆): 27.39, 28.92, 32.13, 35.88, 50.52, 59.03, 113.36, 120.03, 126.92, 127.50, 128.57, 144.78, 158.91, 162.73, 196.05; MS (EI): m/z = 294 (M⁺).

IV. CONCLUSION

We have described a general and highly efficient procedure for the preparation of multi-component synthesis of tetrahydrobenzo[b]pyrans from dimedone, malanonitrile and aryl aldehydes in the presence of gel entrapped NaOH. The method offers several significant advantages, such as high conversions, easy handling, clean reaction profile, no energy consumption, high conversions, cost effective short reaction time and green methodology which make it a useful and an attractive addition to the existing methodologies.

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Synthesis and Characterization of CuO -Co₃O₄@NiO core shell Nanoplates

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ABSTRACT

The research work presents synthesis and characterization CuO –Co3O4 composite supported on NiO nanoplates. Synthesis of NiO nanoplates by co precipitation method. The coreshell paticles were developed by the impregnation method using aqueous solutions of copper and cobalt nitrates. The structural and morphological properties of synthesized core shell CuO –Co₃O₄@NiO have been determine by characterisation techniques such as UV-DRS, X-ray diffraction analysis (XRD) and scanning electron microscopy (SEM).

Keywords: -NiO nanoplates, CuO-Co3O4 Coprecipitation method, XRD, SEM

I. INTRODUCTION

Recently, In the Nanotechnology field the development of advanced core-shell materials is proposed. Due to enormous application this class of nanostructure has received considerable attention It has uses in physics [1-3], chemistry [4-6], and biological area [7-9] because of the collective properties and function of the core and shell. Core shell nanoparticles consist of various types of inorganic nanoparticles like metal oxides.

Metal oxide nanoparticles have drawn large attention as they possess distinctive chemical, electronic, mechanical, magnetic and optical properties which are significantly unlike from those of analogous bulk ones. Transition metal oxides shows a expansive structural variety due to changeable oxidation states so being measured as potential materials for many applications. Nanoscale transition metal oxides are acquiring unbroken significance than its bulk equivalents. Nanoparticles expose unique properties because of their small size and high surface area. Owing to chemical stability, novel optical, electronic, magnetic, thermal and mechanical properties, nickel oxide (NiO) is remarkable transition metal oxide nanoparticles. In view of all the mentioned properties NiO material has potential application in catalyst, battery electrodes, gas sensors, electro chromic material etc. Various methods have been employed to synthesize metal oxides like solvothermal, hydrothermal, chemical bath deposition, chemical precipitation, microwave assisted, electrophoretic deposition and sonochemical with different morphologies. From all said methods Coprecipitation is a easy and cost effective method for synthesizing nanoparticles that can be made in a variety of sizes [13]. The core shell formation with NiO leading to modification of their properties and made desirable for many applications [10]. Co₃O₄ and CuO are the promising materials in formation of core shell nanostructure [11-12].



In the present work, we report a promising strategy to improve the performance of Nickel Oxide,we have describe a simple method to synthesize CuO–Co₃O₄@NiO core shell Nanoplates .Structure determination of synthesizing material were characterized by UV-DRS, X-ray diffraction (XRD) and scanning electron microscopy (SEM) .

II. EXPERIMENTAL

Material

The chemicals used are nickel nitrate (Ni(NO3)2.6H2O(SigmaAldrich 99.99%), Cobalt nitrate (Co(NO3)2.6H2O) (SigmaAldrich 99.99%), (Cu(NO3)2.3H2O) copper nitrate(SigmaAldrich 99.99%), sodium hydroxide (NaOH, Merck 99%) Triton X100 (Sigma-Aldrich). Double distilled water (DDW) was used as a solvent in all the experiments.

Preparation of NiO Nanoplates

The NiO nanoparticles were synthesized by the coprecipitation method using Nickel nitrate Ni (NO3)2.6H2O (1M) used as precursor and Triton X100 as surfactant was dissolved in 100 ml double distilled water. The sodium hydroxide (0.1M) was slowly added drop wise under continuous stirring. The green colored precipitates of Nickel hydroxide were obtained. The mixtures were stirred for 3 h at 80.0°C The precipitate obtained was filtered and washed with double distilled water .The washed precipitate was dried at 80 °C for 12 h. The dried precipitate was calcined at 450°C for 5h.

Preparation of CuO-Co₃O₄@NiO core shell Nanoplates

CuO–Co₃O₄@NiO core shell Nanoplates was obtained an impregnation method. The method involve loading aqueous solution of stochiometric amount of (Cu(NO₃)₂.3H₂O) copper nitrate and Cobalt nitrate (Co(NO₃)₂ of of.6H₂O) on prepared NiO Nanoplates. The mixture obtained was refluxed at 110°C for 12 h then filtered and washed with double distilled water. The product obtained was dried at 100°C in the oven and calcined at 750 °C for 4 h in air. The synthesized CFA@CuO catalyst was characterized by UV DRS, XRD and SEM techniques.

III. RESULT AND DISCUSSION

UV- DRS absorption spectra of the synthesized CuO- Co_3O_4 @NiO core shell Nanoplates recorded in the range 200- 1000 nm are shown in Fig. 1. Spectra reveals peaks at 245 , 320, 380 and 690 nm confirm the formation of product.

In XRD analysis Fig.2., the diffraction peaks of CuO–Co₃O₄@NiO core shell Nanoplates at 37.26,62.93.73.34,79.20 originate from crystal planes (111), (220), (311) and (222) of NiO (JCPDS No.47-1049). The formation of CuO and Co₃O₄ on the surface NiO of was confirmed by the XRD pattern show peaks at 38.78, 48.84, 53.42, 67.98 of CuO (JCPDS card No. 05-661). The peaks at 36.93, 44.93, 59.39 and 65.33 of Co₃O₄ (JCPDS card No: 74-2120). No extra peak is observed which confirms the purity of product.

To characterize and analyze the morphology, the synthesized material are analyzed by SEM as shown in $\underline{\text{Fig.3}}$. The scanning electron microscopy is used to determine the shape or morphology of the synthesized material. The particles have plate-like morphology and they are aggregated together. In the aggregates, the size of the particles is not uniform .

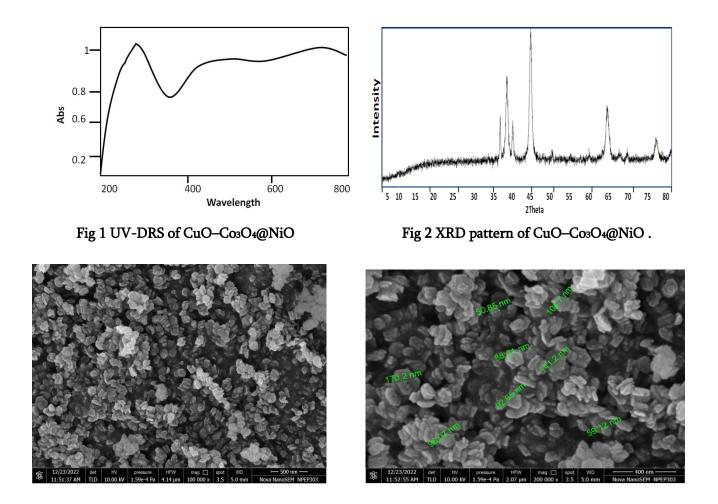


Fig 3 SEM pattern of CuO-Co₃O₄@NiO

IV. CONCLUSION

CuO-Co₃O₄@NiO core shell Nanoplates have been effectively synthesized using an impregnation method. By this method get an opportunity to synthesize nanoparticles with controlled morphology. Characterization of the precursors and the oxides by various analytical techniques UV DRS and XRD indicate the formation of core-shell nanoparticles. The SEM images of CuO-Co₃O₄@NiO show core-shell morphology.

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Development And Evaluation of Dental Gel Containing Clove Oil and Neem Oil for The Treatment of Periodontal Diseases

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ABSTRACT

Aim: The goal of the study was to formulate and evaluate a dental gel for the treatment of periodontal diseases that contained clove oil and neem oil as its primary ingredients.

Methods: It is chosen moreover the treatment of periodontitis because it has a broad spectrum of antibacterial activity against a variety of periodontal infections. Clove oil and neem oil gel is developed using Carbopol 940 as the gelling agent, polyethylene glycol as the cosolvent, methyl and propyl parabens as the preservatives, and the necessary amount of distilled water as the vehicle.

Results: Clove oil and neem oil both performed satisfactorily in tests for physical characteristics such as acid value, saponification value, solubility, density, refractive index, and specific gravity. The produced gel was tested for a number of characteristics, including drug content, pH, spreadability, extrudability, and antibacterial activity. The formulation F4 is an acceptable dosage form for the treatment of periodontitis, according to *in-vitro* tests. Neem oil and clove oil indicated a zone inhibition that was around 26.04±0.6 mm.

Conclusion: The gel formulations of clove oil F4 exhibited good physicochemical properties as well as good drug content in comparison to other formulations, according to the outcomes of the current investigation.

Key words: Periodontitis, Tooth gel, antimicrobial activity, Carbopol-940, Herbal.

I. INTRODUCTION

The popularity of therapeutic herbs is booming in both developed and developing countries. One of the most active study fields worldwide is herbal medicine. The usefulness of herbal treatments in both treating and preventing oral disorders has recently been the subject of substantial research. Herbs have traditionally been used to cure a variety of oral disorders as well as to clean teeth and gums. One of the most significant issues with oral health is oral diseases such periodontal disease, dental caries, and oral cancer. The interactions between oral illnesses and the microbial species that make up the microbiota of the mouth are well-established. An increase in the prevalence of diseases has resulted in a significant need for alternative medicines, products, and solutions for secure, affordable, and efficient contraceptive methods. Historically, A rise in the prevalence of diseases, especially in developing countries, an increase in the resistance to pathogenic bacteria in the current use of chemotherapeutics and antibiotic opportunistic infections in

vulnerable people, and commercially viable options for secure, affordable, and beneficial oral contraceptives are all contributing factors. In a developing nation like India, allopathic medication is also exceedingly costly and unsuccessful at both preventing and treating mouth and oral disease. So, the practice of herbal treatments in traditional medicine and other products is still regarded as one of the best alternatives to synthetic over natural medications. [1,2]

All groups, ethnicities, races, genders, and socioeconomic levels are affected by periodontal disease, which is acknowledged as a major public health issue worldwide. The gums, supporting alveolar bone, periodontal ligament, dental cementum, and buildup of bacterial pathogens are all characterized by inflammation and deterioration. It is a localized inflammatory response brought on by a periodontal pocket's bacterial infection along with subgingival plaque. Periodontal disease is mostly brought on by bacteria, but periodontitis may not always lead from the presence of microbial pathogenic agents. [3,4] Gingivitis and periodontitis are two inflammatory conditions caused by plaque that are frequently referred as periodontal disease. The early stage of the disease, known as gingivitis, is characterized by swelling, minor bleeding, and redness of the marginal gingiva. It is caused by an accumulation of supragingival plaque. The microbiota changes during gingivitis, moving from a Gram-positive anaerobic flora to a more Gram-negative one. The degradation of the alveolar bone and the separation of the periodontal ligament supporting the tooth are signs of periodontitis, a more advanced stage of periodontal disease. [5] According to Morris, 40-45% of adults in the United Kingdom have moderately damaging periodontal disease, and 5-10% have a severe form of the condition. They also noted that the main cause to periodontal disease, visible plaque, is observed in 72% of individuals. In the US, half of all individuals have gingivitis that affects at least three to four teeth; two thirds have subgingival calculus; and approximately one third have periodontitis. [6,7]

Moreover, it has been linked to the bacteria *Porphyromonas gingivalis* [8], the *Tannerella forsythia* [9], the *Actinobacillus actinomycetemcomitans*, the *Treponema denticola*, the *Dialister pneumosintes*, the Bacteroides *forsythus*, the *Capnocytophaga* species, and *Eikenella corrodens*. [10] The traditional methods for treating periodontal disease, including oral, topical, and systemic dosage forms, have significant drawbacks, including superinfection, low or non-compliance, low levels of antibiotics in gingival crevicular fluid, systemic side effects, short duration, and high relative costs. [11] Poor oral hygiene, alcohol, stress, cigarettes, nutrition, immune system problems, and systemic diseases are the main causes of periodontitis. On the tooth's supporting tissue, gram-negative and gram-positive bacteria combine to produce a bacterial plaque, which grows over time. Collagenase's enzymes, antigens, bacterial lipopolysaccharides, endotoxins, ammonia, and hydrogen sulphide are all released by these bacteria. In response, the flow of gingival crevicular fluid, which carries a significant amount of β -glucuronidase, elastase, prostaglandin, neutrophil, and proteoglycans conducive to gingival inflammation, increases in the gingival crevice. [12] The goals of periodontal therapy are to treat inflammatory tissue, lessen the number of pathogenic germs, and heal diseased pockets.

New advances in dentistry have encouraged the use of herbal and natural remedies to treat a variety of oral illnesses. Neem oil and clove oil are two products with many advantages that have grown in significance in herbal remedies. [13] Clove oil is extremely helpful in dentistry since it has minimal intrinsic toxicity and a wide range of biological effects, including analgesics, bactericidal, antispasmodic, anti-neuralgic, carminative,

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anti-infectious, antiseptic, insecticide, stimulant, and stomachic properties. ^[14] The neem tree has been deeply rooted in Indian culture. The neem leaves are cheap and easily available as well as widely accepted socially in the Indian society. It has been tested for its antibacterial activity, including its therapeutic use for gingivitis and periodontitis. ^[15,16,17] The present study was aimed to formulate dental gel containing clove oil and neem oil for the treatment of periodontal disease and then evaluated for their physicochemical properties including drug content, spreadability, extrude ability, *in-vitro* antibacterial activity.

METHODS AND MATERIAL

MATERIALS AND METHODS

Materials:

Clove oil and neem oil is purchased from local market in Solapur. Carbopol 940 (research lab.Ltd),methyl paraben and propyl paraben (ozone international Mumbai),Glycerin (Vikash pharma),propylene glycol (Memba. chem. Corporation Mumbai).

Method:

Carbopol 940 gels were prepared by soaking Carbopol 940 in water and by neutralizing with triethanolamine to pH 6.4. Weighed amount of methyl and propyl paraben were added to the water prior to the addition of Carbopol 940 [18]. In another beaker, the needed quantity of propylene glycol was placed in another test tube to which accurately measured the amount of clove oil and neem oil corresponding to its MIC was incorporated and finally this mixture was added to the beaker containing Carbopol with stirring [19]. The sweetening agent was also added to the polymer dispersion and stirred continuously till it forms a homogenous product [20]. The volume was made up with distilled water and stirring was done vigorously. All the formulation were then subjected to evaluation tests in order to select the best formulation. Table 1 contains a list of several gel formulations ingredients.

Physicochemical characteristics of clove oil:

The physicochemical properties of the clove oil and neem oil, such as their acid value, saponification value, solubility, density, refractive index, and specific gravity, were examined. The results are listed in Table 2.

Evaluation of gel formulation

Physical appearance:

• Color

On a white background, the formulation's color was checked.

• Consistency

The consistency was tested by applying on skin.

Greasiness

The greasiness was tested by the application on to the skin.

Odor

The odor of the gels was tested by mixing the gel in water and taking the smell.

Determination of pH:

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The pH of gel was determined using digital pH meter by immersing the glass electrode completely into the gel system. [21]

Determination of viscosity:

Brooke field viscometer was used to measure the viscosities of the formed gels; spindle number 7 and spindle speed of 60 rpm at 25 °C were used for gels; the corresponding dial reading on the viscometer was recorded [22] in table 3.

Determination of spreadability:

Using a modified wooden block and glass slide apparatus, spreadability was evaluated. The apparatus was made up of a pulley and a wooden block with a fixed glass slide. with the use of a string, a pan was tied to another glass slide that could be moved. For the purpose of determining spreadability, a fixed glass slide containing a measured amount of gel was placed. A moveable glass slide with a pan attached was then put on the fixed glass slide, causing the gel to be sandwiched between the two slides for five minutes. Time taken for the slides to separate was noted²³. Spreadability was determined using following formula:

$$S = M.L/T$$

Where S is the spread ability in grams.cm/sec, M is the mass in grams, T is the time in seconds.

Determination of extrudability:

Standard collapsible aluminum tubes with caps were filled with the gel compositions, and the ends were crimped to the end. The tubes weights were recorded. The tubes were clamped after being placed between two glass slides. 500 gm was placed over the slides and then the cap was removed. The extruded gel's volume was collected and weighed. Calculated extrudability percentages are as follows: (>90% extrudability: excellent, >80% extrudability: good, >70% extrudability: fair). [24]

Determination of homogeneity:

All the developed gels were tested for homogeneity by visual inspection after the gels have been set in the container. [25] They were tested for their appearance and presence of any aggregates.

Determination of drug content:

For the determination of drug content of gel formulation, by thoroughly dissolving 1 g of the gel in 100 ml of solvent (a mixture of Methanol and phosphate buffer pH 6.8 for the formulation of clove oil and neem oil). The solutions were kept for shaking for 4 hr. and then kept for 6 hr. for complete dissolution of the formulations. The dissolved solutions were filtered through 0.45 mm membrane filters and proper dilutions were made and solutions were accustomed to the spectrophotometric analysis. [26] The linear regression equation constructed from the calibration data was used to calculate the drug content.

Determination of antimicrobial activity:

Clove oil and neem oil gel were tested for antibacterial properties using the agar cup plate method. The clove oil and neem oil formulation of about 2% were aseptically placed in cups of previously inoculated agar cultured media plate. The plates were kept at room temperature for 30 mins just before to incubation at 37°C for 24 hrs. The antibiotic i.e., Penicillin and Antifungal i.e., Amphotericin B was used as standards for obtaining comparative results. Plates were examined after 24-48 hrs. incubation for the appearance of the

zone of inhibition. Antimicrobial and antifungal activity was determined by measuring the diameter of zones of inhibition (millimeters) of microbial growth.^[25]

RESULTS AND DISCUSSION:

The following metrics were used to characterize the purchased clove oil and neem oil: acid value, saponification value, solubility, density, refractive index, and specific gravity (table 2).

The formulations were developed by using clove oil and neem oil of same concentration and Carbopol 940 at different concentrations. Formulation composition is given in (Table-1). Physical properties of each of the five batches of formulations were evaluated. All of the gel formulations were a light orange color and smelled strongly of neem and clove oils. The pH of all formulations ranged from 6.7 to 7.2, which corresponds to the buccal cavity's usual pH range of 6.2 to 7.6, supporting the claim that the formulated gels were irritant free to the skin.

Table no.1: Composition of Gel formulation

Ingredients	F1	F2	F3	F4	F5
Clove oil (ml)	0.5	0.5	0.5	0.5	0.5
Neem oil(ml)	0.5	0.5	0.5	0.5	0.5
Carbopol 940 (g)	0.3	0.4	0.5	0.6	0.1
Poly ethylene glycol (ml)	15	15	15	15	15
Glycerin (ml)	5	5	5	5	5
Methyl paraben (g)	0.18	0.18	0.18	0.18	0.18
Propyl paraben (g)	0.02	0.02	0.02	0.02	0.02
Aspartame (g)		0.4	0.4	0.4	0.4
Distilled water (ml)	q. s				

Table no.2: Physicochemical characteristics of clove oil and neem oil.

Sr.no.	Parameter	Clove oil	Neem oil
		procured	procured
1	Color	Pale yellow	Greenish yellow
2	Odor	Aromatic	Strong pungent
3	Acid value (mgKOH/g)	3.66	4.48
4	Saponification value	42.07	195
	(mgKOH/g)		
5	Solubility	soluble in	soluble in
		methanol	methanol
6	Density(g/ml)	1.02	0.918
7	Refractive index(n)	1.492	1.462
8	Specific gravity at 15°C	1.042	0.932

Table no.3: Characteristics of gel formulations

Formulatio ns	Appearanc e	pН	Spreadabilit y(g-cm/sec)	Extrudabil ity (%)	Homogene ity	Viscosity(c ps)	Drug conten t (%)
F1	Pale orange	6.7	18.24	92.20	Good	41330	95.03
F2	Pale orange	6.8	18.12	93.23	Good	41650	95.40
F3	Pale orange	6.7	16.52	90.16	Very good	42370	95.60
F4	Pale orange	6.9	17.86	94.28	Very good	42430	96.10
F5	Pale orange	6.8	15.64	89.30	Good	45420	90.80

Table sno.4: Antimicrobial activity of formulation (F4), clove and neem oil and tetracycline and Amphotericin B (standard)

Microorganisms	Zone of inhibition in	Clove and neem oil(mm)	Penicillin (mm) Standard	Amphotericin B(mm)	
	mm(F4)			Standard	
Staphylococcus aureus	26.04±0.6	31.33±0.4	22.08±0.5	-	
Candida albicans	25.33±0.4	26.02±0.4.	-	35.33±0.6	
n=3, Mean ±S. D					

Table no.5: Antimicrobial activity of clove and neem oil gel formulation

Formulation	Zone of inhibition(mm) (Staphylococcus aureus)	Zone of inhibition (mm) (Candida albicans)
F1	17.5±0.4	22.5±0.5
F2	16.2±0.1	21.02±0.4
F3	17.05±0.2	23.2±0.2
F4	19.5±0.5	25.33±0.6
F5	16.8±0.3	17.5±0.8
	n=3, Mean ±S. D	



Fig 1: Formulation of clove oil and neem oil gel



Fig 2: Antimicrobial activity of gel formulation on *S. Aureus*



Fig 3: Antimicrobial activity of gel formulation on *C. Albicans*



Fig 4: Antimicrobial activity of gel formulation on *C. Albicans*

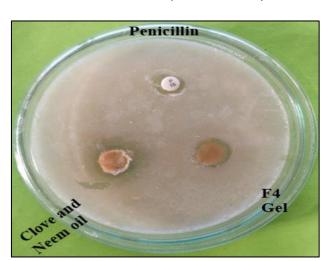


Fig 5: Antimicrobial activity on S. Aureus

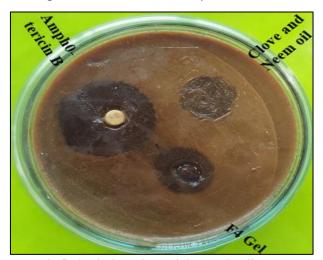


Fig 5: Antimicrobial activity on C. Albicans

The gel formulation's spreadability was determined to be between 15.64 to 18.24 gm/cm/sec, indicating that gels can spread consistently and smoothly. The compositions had a glossy, transparent appearance. In all formulations, the homogeneity and tube extrudability were excellent.

The formulations drug content ranged from 90.80% to 96.10%. (Table 3). It was found that there was no drug degradation during processing from the values obtained from the drug content. It was observed that the formulation F4 contained the greatest amount of drug. In comparison to previous formulations, the gel forms of clove oil and neem oil F4 demonstrated good physicochemical characteristics and good drug content (Table 3). According to the results of antimicrobial investigations, *candida albicans* and *staphylococcus aureus* were maximum zone of inhibition by the gel formulation of clove oil and neem oil i.e., F4.

CONCLUSION:

Staphylococcus aureus and Candida albicans were found to be resistant to the antibacterial effects of clove oil and neem oil. After performing human clinical trials, the formulations made from clove and neem were found to have considerable benefits and can be utilized commercially to design dental gels. However, more

investigation is still required to ascertain whether they can effectively replace synthetic antibiotics or be combined with them.

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One Pot Environmental Benign Synthesis of Quinoline-3-Carbonitrile Derivatives

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ABSTRACT

Bleaching earth clay catalyzed multicomponent reaction of Heterocyclic aldehyde, 2-cyanoacetohydrazide and substituted Anilines, In PEG-400 is carried out. This method has been applied for the synthesis of quinoline-3-carbonitrile with good to excellet yield. In this study a comparison is made on triethylamine, piperidine, morpholine with Bleaching earth clay and with no catalyst. The studies revealed that bleaching earth clay and PEG-400 are more effective than other catalyst and solvents. It increasing the yield of product with less time consumption. All the synthesized compounds were characterized for their spectral analysis.

Keywords: Bleaching earth clay (BEC), PEG-400, Heterocyclic aldehyde, recyclability.

I. INTRODUCTION

The predominant occurrence of thequinoline-3-carbonitrile derivative in various natural products and established medicinal compounds¹⁻³ had proven to be a versatile scaffold in organic and medicinal chemistry. quinoline-3-carbonitrile have recognized to acquire varied biological activities such as antibacterial⁴, antiviral⁵, anticancer⁶, antifungal⁷, antimalarial⁸, anti H.I.V⁹, anti-inflammatory¹⁰. Quinoline-3-carbonitrile derivativeare acknowledged medicinal compounds known to be present in the bioactive natural products¹¹.Heterocyclic aldehydes are proven to contain varied biological activities¹². By interpretating these points we combine the heterocyclic aldehydes with anilines and 2-cyanoacetohydrazide assuming that the present combination may lead to formation of improved biological hybrid.

There is always been quest for advancement of the synthetic rout for the conversion of readily available reagent in to widely used organic compounds. For accomplishing this multicomponent reaction (MCR) are recognized as an important tool from economic as well as environmental point of view¹³. Along with the MCR method, use of green solvent is also considered to be an environmental benign access. Amongst the green solvents used for MCR strategy PEG-400 is considered to be well known green solvent¹⁴.

In the previous literature there are abundant synthetic strategies for the synthesis of quinoline-3-carbonitrile derivatives¹⁵. Development of an heterogenous catalyst for the synthesis of numerous important organic motifs was always been a center of interest for organic chemistry students¹⁶⁻¹⁷. Ease of handling, reusability, easy extraction are some peculiar advantages of heterogenous catalysts. Amongst those

heterogeneous catalysts Bleaching earth clay (BEC) is considered as a remarkable heterogeneous catalyst for various organic transformations¹⁸. Taking in account these facts we represent an MCR protocol for synthesis of by Consolidation of heterocyclic aldehydes with anilines and 2-cyanoacetohydrazide Manipulating Bleaching earth clay as catalyst and PEG-400 as green solvent.

Result and discussion

A facile one pot three componentprotocol for the synthesis of new quinoline-3-carbonitrile derivative4a-jis reported by utilizing equimolar heterocyclic aldehydes2a-j, anilines3a-c and 2cyanoacetohydrazide 1 Scheme 1. The synthetic protocol commences with sequential addition of 2cyanoacetohydrazide and heterocyclic aldehydes in round bottom flask previously filled with catalytic amount of BEC and PEG-400 as green solvent, after completion of reaction as indicated by TLC the anilineswas added in the same pot and the reaction mixture was further stirred at 80°C for the formation of product. the first attempt was made using the Triethylamine as a catalyst which results in formation of the product with 50% yield and time required for completion of reaction was 65 minutes Entryl Table1. Observing these results, we moved for other catalysts piperidine and morpholine Entry 2and 3 Table 1 respectively which the outcomes of 40 and 30% yield with the time of 70 and 60 minutes. When we moved for using BEC as a catalyst 1 Wt%resulting in production of improved 60% yield Entry 4 table1. Enthused with these results we further investigate different wt% compositions of BEC (pH 12.5). We came to investigation that satisfactory yield was obtained when we utilized 15wt% of BEC. The yield was found to hampered when 10 wt% and 20wt% BEC were used Entry 5 and 7 Table 1. However, there was no formation of product when reaction was carried out in absence of catalyst when stirred at RT Entry 8. Even though when reaction mixture was stirred at 80°C without catalyst the formation of product was not observed Entry 9 Table 1. The optimized reaction conditions were found when 15wt% of BEC was used.

Table1: Optimized reaction conditions

Entry	Catalyst (Mol/wt%)	Temp	Time (Min)	Yield of
		(°C)		4a (%)
1	Triethylamine (Mol%)	70	65	50
2	Piperidine (Mol%)	80	70	40
3	Morpholine (Mol%)	80	60	30
4	Bleaching earth Clay 1 wt%	80	50	60
5	Bleaching earth Clay 10 wt%	80	40	70
6	Bleaching earth Clay 15 wt%	80	35	90
7	Bleaching earth Clay 20 wt%	80	20	70
8	No catalyst	RT	70	0
9	No catalyst	80	80	0

^aReaction progress was monitored by thin layer chromatography (TLC)

bYield refers to isolated yield

With these optimized conditions we initiated to find the substrate scope the reaction condition was found to operate for varied substrate scope Table 2.

Scheme 1

The finding of the substrate scope indicates that the MCR strategy allows variety of substrate to undergo smoothly with formation of product with satisfactory yield. Interpretation of the yield of the substrate scope indicate that the reactant with electron donating group either on aldehyde 2a-j or on the anilines 3a-c renders the productyield. The substrates with electron withdrawing groups on the aldehydes or on the anilines are providing the products with good yield.

Table 2 Substrate Scope

^aYield refers to the isolated product after column chromatography

The plausible mechanistic path was proposed in Scheme 2. The mechanism indicate reaction was proceed through abstraction of proton from 2-cyanoacetohydrazide by BEC then the anion attack on the carbonyl of heterocyclic aldehyde. Furthermore addition of substituted anilines leads to formation of final product.

Scheme 2 Plausible mechanism

Conclusion:

The proposed protocol provides an easy access for the synthesis of quinoline-3-carbonitrile derivatives. the MCR strategy for the synthesis is woven with the environmental benign approach through the use of BEC as a catalyst and PEG-400 as a solvent. The protocol delivers an efficient access for the formation of new hybrid product with coupling of easily available reactants which may lead to improved biological activities.

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UV Spectrophotometric Method Development and Validation for Estimation of Cariprazine In Bulk and Tablet Dosage Form

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ABSTRACT

Objective: A new, simple, sensitive, precise and reproducible UV spectroscopic method was developed for the estimation of Cariprazine in bulk and tablet dosage from.

Method: The UV spectrum of Cariprazine in 50% Acetonitrile and 50% Water showed λ max at 216 nm. Beer's law is valid in the concentration range of 3.6-8.4 µg/ml. This method was validated for linearity, accuracy, precision, ruggedness and robustness.

Results: The method has demonstrated excellent linearity over the range of 3.6-8.4 μ g/ml with regression equation y = 0.079x-0.002 and regression correlation coefficient $r^2 = 0.999$. Moreover, the method was found to be highly sensitive with LOD $(0.15\mu$ g/ml) and LOQ $(0.44\mu$ g/ml).

Conclusion : Depending on the results, the given method can be successfully applied of Cariprazine in Tablet formulation.

Keywords: Cariprazine, UV spectroscopy, method development and validation, tablet formulation.

I. INTRODUCTION

The purpose of analytical method development is to establish the identity, purity, physical characteristics and potency of drugs. The method development is to develop analytical method for drug product containing active pharmaceutical ingredients (API) to allow accurate and precise quantitation of drug. Validation of analytical method is intended to demonstrate that it is suitable for its intended use. The validation practice demonstrates that analytical method measures the correct substance in the correct amount and in appropriate range for the intended samples. Analytical method validation is an essential requirement to perform chemical evaluation and thinking about the utmost relevant overall performance indicators inclusive of accuracy, precision, linearity, range, selectivity, limit of detection (LOD) and limit of quantification (LOQ) are severely discussed in an effort that to prevent their misguided utilization and to ensure the scientific correctness and consistency among publication [1]



 $\label{eq:chemical} The chemical name of Cariprazine is N'-[trans-4-[2-[4-(2,3-Dichlorophenyl)-1-piperazinyl]ethyl]cyclohexyl]-N,Ndimethylurea .$

The molecular formula is C21H32Cl2N4O and It has a molecular weight 427.411 g/mol [2].

Cariprazine is an Atypical antipsychotic which is indicated in the treatment of schizophrenia and bipolar disorder. It acts as D2 and D3 receptor partial agonist, with high selectivity towards the D3 receptor. It is also preferably useful as an add-on therapy in major depressive disorder.

Cariprazine is used to treat schizophrenia and manic, depressive, or mixed episodes associated with bipolar I disorder. In the United States it is approved for schizophrenia in adults, acute treatment of manic or mixed episodes associated with bipolar I disorder in adults and treatment of depressive episodes associated with bipolar I disorder (bipolar depression). Cariprazine consistently improved depressive symptoms across a spectrum of patients with bipolar I depression. In Australia, UK and Europe it is currently approved only for schizophrenia.

MATERIALS AND METHOD:

Materials:

Cariprazine was obtained as a gift sample from Aadhar Life Science Pvt, Solapur Maharashtra, India. Tablets of Barkeit were purchased from local market; each tablet was labeled to contain 200 mg. All chemicals and reagents were of analytical grade.

Instruments:

A Double beam UV Visible Spectrophotometer (Systronic-2201 Spectrophotometer) was used for the detection of absorbance, Sonicator (Microclean-1103) and Weighing Balance (SHIMADZU AY220) was used for experimental purpose.

Chemical and Reagent:

Acetonitrile, water, Whatman filter papers were used.

METHOD DEVELOPMENT:

Selection of solvent:

Solubility of Cariprazine was performed in solvent Acetonitrile: Water and UV spectra of drug in this solution were recorded.

Determination of Wavelength:

The sample was scanned from 200-400 nm with PDA detector. The Wavelength selected for analysis chosen was 216 nm on basis of appropriate intensity of Cariprazine.

Preparation of standard stock solution:

Cariprazine Standard Stock Solution-I (SSS-I)

Prepare a Cariprazine Standard Stock Solution (SSS-I) by adding 6 mg of Cariprazine in 100 ml volumetric flask & add 50-70 ml diluent, mix for 2 minutes and make the volume to 100 ml with diluent. (Conc. of Cariprazine = $60 \mu g/ml$) and add 1.0 ml of SSS-I in 10 ml volumetric flask and add 5 ml diluent and vortex and make up the volume with diluent. (Conc. of Cariprazine = $6 \mu g/ml$)

Preparation of sample stock solution:

Sample Stock Solution:

Weigh 10 capsules content and calculate average weight of 1 capsule content. Weigh powder equivalent to 0.6 mg of Cariprazine and transfer to 100 ml volumetric flask & add 50-70 ml diluent, mix for 5 minutes and make the volume to 100 ml with diluent. (Conc. of Cariprazine = $6 \mu g/ml$).

Method Validation:

The developed method was validated as per ICH guidelines. The ICH parameters assessed were specificity, linearity, range, accuracy, precision (repeatability), LOD and LOQ

1. Linearity:

Five different concentration of Cariprazine solutions were prepared and analyzed at wavelength 216nm. The regression coefficient was found to be 0.999.

2. Range:

The range of analytical method was decided for Cariprazine (2-10µg/ml).

3. Accuracy:

The accuracy was determined by calculating % recovery of Cariprazine. It was carried out by adding known amounts of analyte corresponding to the concentration levels 80, 100, and 120% and results were expressed as % recovery.

4. Precision:

The precision of analytical method was studied by performing repeatability studies by estimating responses of working standard solution (Conc. of Cariprazine: $40\mu g/ml$) for 6 times. The results were reported in terms of percentage relative standard deviation (%RSD)

5. Limit of Detector (LOD):

LOD is the lowest amount of analyte in sample that can be easily but not necessarily quantified. LOD was calculated by following formula.

 $LOD = 3.3 \times STDV/S$

Where STDV and S are the standard deviation of the response and the slope of the calibration curve respectively.

6. Limit of Quantification (LOQ):

LOQ is the lowest amount of analyte in sample that can be easily detected and quantified with suitable precision and accuracy. LOD was calculated by following formula.

$$LOD = 10 \times STDV/S$$

Where STDV and S are the standard deviation of the response and the slope of the calibration curve respectively.

RESULT AND DISSCUSSION:

The absorption spectrum shows λ max of Cariprazine at 216nm.

The proposed method was validated according to ICH Q28 R1 guidelines for validation of analytical procedure.⁴⁻⁸

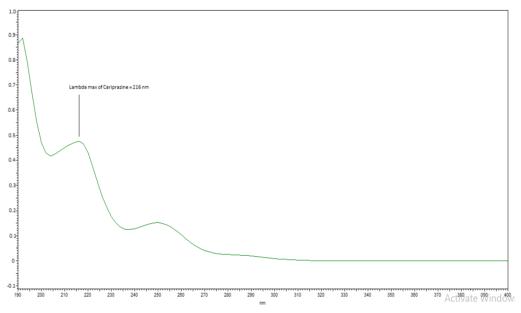


Fig: 2 UV -Visible spectra of Cariprazine.

Validation of method as per ICH guidelines:

1. Linearity:

Five different concentration of Cariprazine were prepared and analysed at wavelength 216 nm. The regression coefficient was found to be 0.999. The absorbance was found in limit i.e. 0-2. Hence the analysed parameter was found to be validated

Sr. No	Conc (µg/ml)	Absorbance
1	3.6	0.283
2	4.8	0.381
3	6.0	0.476
4	7.2	0.574
5	8.4	0.665

Table 1: Results of Linearity

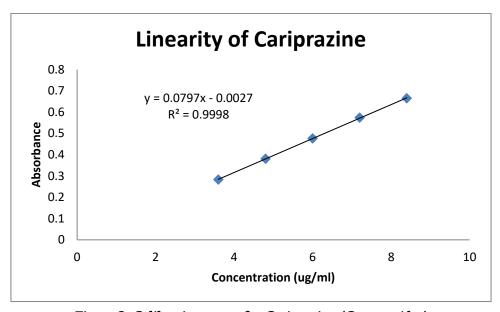


Figure 3: Calibration curve for Cariprazine (Conc.vs.Abs.)

Table: 2 Optimization parameter of Cariprazine

Parameter	Method values
Wavelength	216
Beers law	2-10ug/ml
Correlation Coefficient	0.999
Regression coefficient	Y=0.079x-0.002
Slope	0.079
Intercept	0.002

2. Accuracy:

The concentration 40, 50, $60\mu g/ml$ was taken as 80,100,120% and % recovery was found to be in range 99%-101%. Hence the parameter was found to be validated.

Table 3: Result of accuracy

Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID	Sample ID
	Rep 1		0.381	4.81	100.16			
80%	Rep 2	4.8	0.383	4.83	100.68	100.25	0.401558	0.40
	Rep 3		0.380	4.79	99.89			
	Rep 1		0.476	6.01	100.11			
100%	Rep 2	6	0.477	6.02	100.32	99.96	0.437785	0.44
	Rep 3		0.473	5.97	99.47			
	Rep 1		0.574	7.24	100.60			
120%	Rep 2	7.2	0.573	7.23	100.42	100.42	0.175254	0.17
	Rep 3		0.572	7.22	100.25			

3. Range:

Range is an interval between highest and lowest concentration limit of the analyte i.e. 2-10µg/ml.

4. Precision:

The prepared working standard was analysed in morning and at evening and % RSD was calculated to identify the stability of solution for intraday precision.

The same solution was analysed on second day and compared with morning results of intraday precision and % RSD was calculated.

Table 4: Result of intra-day precision

Sample ID	Absorbance	Conc (ug/ml)
Standard	0.476	6.00
Morning	0.473	5.96
Evening	0.472	5.95
% RSD	0.15	0.15

Table 5: Result of Inter-day precision

Sample ID	Area	Conc (ug/ml)
Day 1	0.473	5.96
Day 2	0.469	5.91
% RSD	0.60	0.60

5. Limit of Detection (LOD):

The limit of detection was found to be $0.15\mu g/ml$.

6. Limit of Quantification:

The limit of quantification was found to be $0.44\mu g/ml$.

7. Assay:

Sample solution of concentration 40 $\mu g/ml$ was analysed at wavelength 216nm and the % purity was calculated.

Table 6: Result of Assay

Formulation	Concentration	Amount	% Purity
	(μg/ml)	obtained(µg/ml)	
Barkeit 200mg	40	39.70	99.25%
Tablets			

8. Robustness:

The Robustness was performed by changing the Diluent concentration by \pm 2% and Wavelength by \pm 2 nm.

Table 7: Robustness studies

Diluent Composition					
Condition	Sample ID	Sample ID Absorbance			
Increase	WS	0.477	-		
increase	DP	0.475	99.58		
Normal	WS	0.476	-		
normai	DP	0.473	99.37		
Decrease	WS	0.476	-		
Decrease	DP	0.475	99.79		
	Wavelength Ten	perature			
Condition	Sample ID	Absorbance	Assay		
Increase	WS	0.471	-		
mcrease	DP	0.469	99.58		
Normal	WS	0.476	-		
normai	DP	0.473	99.37		

Dogwood	ws	0.468	-
Decrease	DP	0.463	98.93

Table 8: Result of Robustness

Condition	Increase	Normal	Decrease
Diluent Composition	A52-W48	A50-W50	A48-W52
Wavelength	218	216	214

Conclusion:

An analytical UV spectrophotometric method was developed & validated thoroughly for quantitative determination of Cariprazinein bulk and tablet formulation. The presented method was found to be simple, precise, accurate, rugged, and reproducible which gives an acceptable recovery of the analyte, which can be directly easily applied to the analysis of pharmaceutical semisolid formulation of Cariprazinein.

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Analytical Method Development and Validation of RP-HPLC Method for the Estimation of Vancomycin Hydrochloride in Bulk and Formulation

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ABSTRACT

A Reverse Phase High-Performance Liquid Chromatographic (RP-HPLC) method was developed and validated for the estimation of Vancomycin Hydrochloride which is an antibiotic drug. The RP-HPLC succeededAgilent Zorbax SB-Aq(250×4.6mm,5u). The mobile phase was effective according to the polarity of the studied drug. The mobile phase was consisting of 0.1%formic acid:Methanol (50:50% v/v) used at a flow rate of 0.5ml/min. with an injection volume of $10~\mu L$ was selected for this present work. Detection was made by using a UV detector at 225nm. The retention time was found to be3.92min. The developed method was validated according to the ICH guidelines. The calibration curve was linear for vancomycin hydrochloride in the concentration range of 80-120 μ g/ml was good. The developed method was validated for Linearity, Precision, Accuracy, and Robustness of Vancomycin HCL drug and was accurate, precise, and reliable for the analysis of vancomycin HCLin formulation. The Relative Standard Deviation for all the parameters was found to be less than 2 which shows the validated method and results obtained by this method is in fair agreement. Hence, this developed method can be easily and effortlessly adopted for routine analysis for Vancomycin hydrochloride in bulk and formulation.

Keywords: Vancomycin Hydrochloride, Method Development, Validation, RP-HPLC, ICH.

I. INTRODUCTION

High Performance Liquid Chromatography (HPLC) is a technique in analytical chemistry commonly used to separate, identify, and quantify each component in a mixture. Analytical method development is the process of selecting an accurate assay procedure for determination of composition of formulation. Analytical method must be developed using the protocol and acceptance criteria set out in ICH (International Council for Harmonization) guidelines Q2(R1).¹

Analytical method plays an important role in the discovery, development and manufacturing of pharmaceuticals. The aim of method development is to develop analytical method for drug product containing active ingredients to allow accurate and precise quantitation of drug. High Performance Liquid



Chromatography (HPLC) is an essential analytical tool in assessing drug product. HPLC methods should be able to separate, detect, and quantify the various drugs and drug related degradants that can form on storage or manufacturing, detect and quantify the various drugs and drug related impurities that may be introduced during synthesis. Validation is the process of establishing the performance characteristics and limitations of a method and identification of the influences which may change these characteristics.³

In literature review, various methods are available for determination of vancomycin in human plasma by HPLC, stability indicating HPLC method for determination of vancomycin in pharmaceutical dosage form. In the present work, it is therefore focused on new ecological method development for the estimation of vancomycin in bulk and formulation. The objective of this work is to develop and validate a new analytical method faster, low cost, ecological and miniaturized for quantification of vancomycin in API and dosage form using HPLC. The use of non-toxic or less toxic solvent, it is possible to make this method greener.

Fig no 1. Vancomycin Hydrochloride

IUPAC NAME:

(1S,2R,18R,19R,22S,25R,28R,40S)-48-[(2S,3R,4S,5S)-3-[(2S,4S,5S,6S)-4-amino-5-hydroxy-4,6-dimethyloxan-2-yl]oxy-4,5-dihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-22-(2-amino-2-oxoethyl)-5,15-dichloro-2,18,32,35,37-pentahydroxy-19-[[(2R)-4-methyl-2- (methylamino)pentanoyl]amino]-20,23,26,42,44-10,12-10,1

pentaoxo-7,13-dioxa-21,24,27,41,43-

pentazaoctacyclo[26.14.2.23,6.214,17.18,12.129,33.010,25.034,39]pentaconta-

3,5,8(48),9,11,14,16,29(45),30,32,34(39),35,37,46,49-pentadecaene-40-carboxylic acid;hydrochloride⁴

Its molecular formula is C66H76Cl3N9O24 and its molecular weight is 1485.74

Vancomycin is an amphoteric glycopeptide antibiotic, first isolated in 1956, that is active against a broad range of Gram-positive bacteria as well as some Gram-negative cocci. Vancomycin (VCM) is widely used to treat Methicillin-resistance Staphylococcus aureus (MRSA) infection⁵. It has a strong bactericidal activity, inhibiting the polymerization of peptidoglycans in the bacterial cell wall⁶. Because of toxicity, Vancomycin was used primarily for alternative therapy before the recent emergence of methicillin-resistant and penicillin-resistant organisms. For patients allergic to both penicillin and cephalosporins, vancomycin is often the only effective treatment Vancomycin is an antibacterial medication in the glycopeptide class like penicillin⁷. Vancomycin is FDA-approved for administration by either intravenous injection or oral route. Glycopeptide antibiotics such as vancomycin, ramoplanin and teicoplanin are lifesaving drugs in certain clinical situations where first-line antibiotics (e.g., penicillin's, cephalosporins) result in treatment failure^{8,9}

MATERIAL AND METHODS:

Chemicals and reagents:

Vancomycin Hydrochloride was obtained as a gift sample from Hetero Labs Limited Telangana. 0.1 % FA , methanol.

Instrumentation:

Agilent Technologies Infinity II 1260, 1260 DAD Detector ,Electronic balance (Aczet CY224C),Syringe filter (Qualsil Nylon Membrane 0.45 um, 15 mm.), Solvent filter (Pall Nylon 6.6 Membrane 0.45 um, 47 mm filter),Glass filter Assembly Borosil All glass filter holder -47 mm, Ultra sonicator (Labman Scientific Pvt.Ltd)

Chromatographic equipment and conditions

Chromatographic separation was achieved on Agilent Zorbax SB-Aq(250×4.6mm,5u). The mobile phase used for the separation of Vancomycin hydrochloride was 0.1% formic acid :Methanolin the ratio of (50:50% v/v). The flow rate was set at 0.5ml/min at ambient temperature of 30°C, with an injection volume of 10 μ L. Using DAD Detector at the wavelength of 225 nm.

Preparation of Solution

Preparation of Standard stock solution

- a. Vancomycin HCL Standard Stock Solution-I (VSSS-I): Initially Prepare a Standard Stock Solution (SSS-I) by adding 10 mg of Vancomycin HCL in a 10 ml volumetric flask & add 5 ml diluent, mix for 2 minutes and make the volume to 10 ml with diluent. (Conc. of Vancomycin in VSSS-I= $1000 \, \mu g/ml$).
- b. Then add 1 ml of VSSS-I in a 10 ml volumetric flask and add 5 ml diluent and vortex and make up the volume with diluent. (Conc. of Vancomycin =100 μ g/ml)

Preparation of sample solution

1. Drug Product Sample Preparation for Assay:

- i. 10 tablets were weighed and the average weight was calculated. And tablets were crushed & mixed in mortar and pestle.
- ii. Powder weight equivalent to 10 mg Vancomycin was weighed into 10 ml volumetric flask & add 5 ml diluent, Sonicate for 5 minutes and make the volume to 10 ml with diluent. (Conc. of Vancomycin = $1000 \, \mu g/ml$).
- iii. Further, pipette out 1.0 ml of the above solution in 10 ml volumetric flask and add 5 ml diluent and vortex and make up the volume with diluent. (Conc. of Vancomycin = $100 \mu g/ml$).

Selection of Wavelength:

The sample was scanned from 190-400 nm with a DAD detector. The Wavelength selected for analysis chosen was 225 nm for appropriate identification of Vancomycin.

Analytical Method Development

The proposed RP-HPLC method of analysis was validated following ICH Q2 (R1) guidelines by studying the parameters like system linearity, accuracy, assay, precision, suitability, specificity, LOD, LOQ and robustness.

RESULTS AND DISCUSSION

Method Development The proposed RP-HPLC method was developed and optimized for a series of trials in a terms of mobile phase selection, composition, wavelength, choice of stationary phase of column, flow rate and column temperature . Vancomycin Hydrochloride showed the absorbance maxima at 225nm. Hence, the wavelength was selected as a working wavelength for the proposed RP-HPLC method.

Specificity & Assay:

- individual sample of Vancomycin working standard & drug product of 100 μ g/ml was prepared and peaks were for identified from Retention Time.
- Blank was injected to ensure there is no blank peak interfering with the main analyte peak.

Table no 1. Result of specificity

VancomycinHCL			
Sample	RT	Area	Assay%
WS	3.91	14119427	-
DP	3.91	13985416	99.05

Repeatability & System Suitability:

- i. A single sample was prepared as described and 6 injections were made from the same sample and checked for system suitability.
- ii. System suitability parameters are as below:
 - 1. Retention Time,
 - 2. Theoretical plates,
 - 3. Asymmetry (Tailing factor),
 - 4. Peak purity.

Table no 2. Result of Repeatability

Vancomycin HCL	
Sample ID	Area
Rep 1	14119427
Rep 2	14118712
Rep 3	14118715
Rep 4	14119554
Rep 5	14120021
Rep 6	14117877
Average	14119051
STDEV	766.99126
RSD	0.01

Table no 3. Result of System Suitability

			•	
Sample ID	RT(Min)	TP	Asymmetry	Peak Purity
Rep 1	3.91	5032	1.14	1.00
Rep 2	3.91	6001	1.12	1.00
Rep 3	3.91	5147	1.10	1.00
Rep 4	3.91	5671	1.11	1.00
Rep 5	3.91	5556	1.09	1.00
Rep 6	3.91	5232	1.08	1.00
Average	3.91			
STDEV	0			
RSD	0.00			

Linearity & Range:

- 5 samples of varying concentrations ranging from 80-120% were made.
- The concentrations are given below

% Level	Vancomycin Conc. (μg/ml)
80	80
90	90
100	100
110	110
120	120

- The sample preparations are given below;
- X ml of Vancomycin was added to 10 ml diluent to make up the concentrations given above

X ml of VSSS-I	Diluted to
0.8	10 ml
0.9	10 ml
1.0	10 ml
1.1	10 ml
1.2	10 ml

Table no 4. Linearity and Range

Vancomycin HCL			
% Level	Conc (ug/ml)	Area	
80	80	11290955	
90	90	12708129	
100	100	14119427	
110	110	15485807	
120	120	16890791	

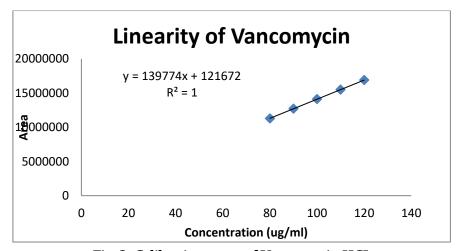


Fig. 2: Calibration curve of Vancomycin HCL

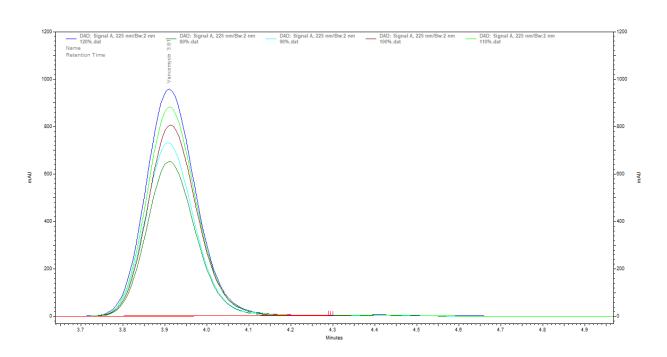


Fig. 3: Overlay of chromatograms of concentration 80-120 μg/ml of Vancomycin HCL.

Accuracy

- i. Samples were prepared of 80%, 100% and 120% concentration by spiking the same amount of concentration given above in table for both Vancomycin.
- ii. Samples were injected in triplicate to calculate % RSD

Table no 5 result of accuracy

Sample ID	Reps	Spiked Conc. (ug/ml)	Area	Amt Recovered (ug/ml)	% Recovery	Average	STDEV	RSD
	Rep 1	79.92	11290955	79.89	99.96			
80%	Rep 2	79.92	11315945	80.07	100.18	100.02	0.140382	0.14
	Rep 3	79.92	11286541	79.86	99.92			
	Rep 1	99.9	14119427	99.90	100.00			
100%	Rep 2	99.9	14118712	99.90	100.00	100.00	0.002918	0.00
	Rep	99.9	14118715	99.90	100.00			

	3							
	Rep 1	119.88 16890791 119.51 99.69						
120%	Rep 2	119.88	16915462	119.69	99.84	99.93	0.126077	0.13
	Rep 3	119.88	16945671	119.90	100.02			

LOD/LOQ:

LOD and LOQwas calculated by using the ANOVA technique. The LOD found 1.20 ug/ml and a LOQ of 3.63ug/ml.

Robustness:

The Robustness was performed by changing the column temperature by ± 2 °C.

Each Sample was injected % Assay was calculated at each condition was calculated.

Condition	Increased	Normal	Decreased
Column Oven Temperature	32°C	30°C	28°C

Table 6: Robustness result of Vancomycin Hydrochloride

Column Oven Temp Change				
Condition	Sample	Vancomycin		
		RT	Area	Assay
28°C	WS	3.91	14109845	-
	DP	3.91	14101456	99.94
30°C	WS	3.91	14119427	-
	DP	3.91	13985416	99.05
32°C	WS	3.91	14115541	-
	DP	3.91	13995418	99.15

Intra & Inter-day Precision:

- Single mixture working standard and drug product samples were prepared and injected twice in a day at different time intervals to evaluate intra-day precision.
- Same mixture working standard and drug product samples were analysed on second day to evaluate the inter-day precision.
- % Assay was calculated at each interval and stability of solutions were estimated.

Table no 7 result of intra day presicion

Intra Day precision				
Dov. 1	Sample ID	Vancomycin HCL	Vancomycin HCL	
Day 1		Area	Assay	
Mamina	WS	14119427	-	
Morning	DP	13985416	99.05	
Evening	WS	14105641	-	
Evening	DP	13985412	99.15	

Table no 8 Result of inter day presicion

Inter Day precision			
Day	Sample ID	Vancomycin HCL	
		Area	Assay
Day 2	WS	14119884	-
	DP	13999754	99.15

CONCLUSION

A novel RP-HPLC method was developed and successfully validated as per ICH guidelines for the estimation of Vancomycin HCL. All the results of various parameters were found to be within the acceptable limits. Hence the proposed RP-HPLC method for the analysis of Vancomycin HCLin bulk and its formulation was found to be specific, precise, accurate and fast.

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CBP03		D.S.T.S Mandal's College of Pharmacy,
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CBP04		Punyashlok Ahilyadevi Holkar Solapur
	Avinash Chandrakant Molane	University, Solapur
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	Banajgole Nikita Shivanand	Science, Solapur
CBP06		D.B.F.Dayanand College of Arts and
	Bicchal Sanjana yallappa	Science, Solapur
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	Chavare	Pune
CBP08		D.B.F.Dayanand College of Arts and
	Chougule Samarth Bhagwan	Science, Solapur
CBP09		D.B.F.Dayanand College of Arts and
	Divya Manteshwar Balapuri	Science, Solapur
CBP10	Domal Chandrama Govind	Dayanand institution Solapur
CBP11	Dr. Babaso Shishupal Kamble	D. B. J. College, Chiplun
CBP12	Dr. Muddsar Laldemashak	C. B. Khedgi's, B. Science, R.V. Commerce
	Gaur	and R. J. Art's College, Akkalkot
CBP13	Dr. Navale Bhagwan Bhanudas	Vidnyan Mahavidyalaya Sangola
CBP14	Dr. Rajendra Shrirang	, , ,
	Gaikwad	Vidnyan Mahavidyalaya Sangola
CBP15		Shrimant Babasaheb Deshmukh
	Dr. Rupesh Bramhadeo Kadam	Mahavidaylaya, Atpadi
CBP16		Sangameshwar College, Solapur
	Dr. Shubhangi S.Gavande	(Autonomous)
CBP17	Dr. Suraj Subhash Nikte	Fabtech Technical Campus, Sangola
CBP18		Dr.Babasaheb Ambedkar Marthwada
	Dr. Vijaykiran N. Narwade	University, Chhatrapti Sambhajinagar
CBP19		Fabtech College of Engineering and
	Dr. Yuvraj Hari Navale	Research, Sangola
CBP20	_	Pratapsinh Mohite-Patil
	Dr.Swati Dattu Patil	Mahavidyalaya,Karmala
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CBP25	Khandagale Vaishanvi Baban	Sangola College Sangola
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	Ladda Payal Rajgopal	Solapur
CBP27	Mahadevi V	Department of Physics, Gulbarga
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		University,Kalaburagi
CBP28	Miss. Nadeghar Alfiya Md.	D.B.F.Dayanand College of Arts and
CDI 20	Husain	Science, Solapur
CBP29	Tusum	D.S.T.S Mandal's College of Pharmacy,
CD1 27	Miss. Sujata Gopal Pore	Solapur
CBP30	Miss.Nisha vijay Kaldate	S.S.G.M.College, Kopargaon.
CBP31	141155.1415Ha vijay Ixaidate	D.S.T.S.Mandals College of
CDISI	Monika Mallikarjun Shirawar	Pharmacy, Solapur
CBP32	Mr, Sagar Tanaji Fulari	Shivaji University Kolhapur
CBP33	1411, Sugar Tunaji Tunari	PDEA's Annasaheb Magar Mahavidyalaya,
CDISS	Mr. Alhat Sachin Khandu	Hadapsar
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GD 7 4 4	Prajakta Vilas Sontakke	Science, Solapur
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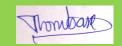
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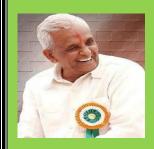


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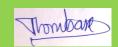
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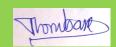
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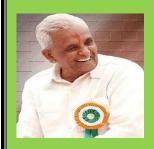
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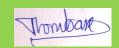
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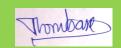
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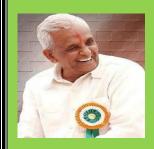
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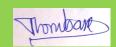
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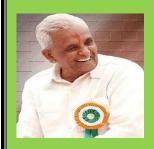
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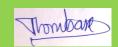
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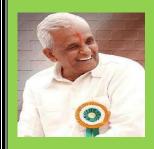
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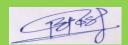
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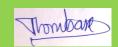
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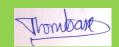
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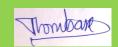
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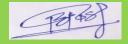
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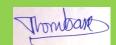
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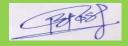
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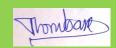
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This is to certify that **Dr. Navale Bhagwan Bhanudas**

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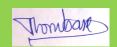
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Dr. B. B. Navale, Head



Dr. J. V. Thombare

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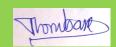
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Shrimant Babasaheb Deshmukh Mahavidaylaya, Atpadi

has participated

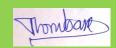
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International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023,

Dated on May 03-04, 2023



Dr. B. B. Navale,



Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







Vidnyan Mahavidyalaya, Sangola

Tal-Sangola, Dist-Solapur, MH- 413307, India. (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

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Dr. Shubhangi S.Gavande

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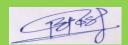
Sangameshwar College, Solapur (Autonomous)

has participated

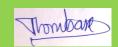
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Dr. J. V. Thombare

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Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







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This is to certify that **Dr. Suraj Subhash Nikte**

of

Fabtech College of Engineering and Research, Sangola

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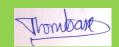
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Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani
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This is to certify that

Dr. Vijaykiran N. Narwade

of

Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar

has participated

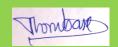
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Dr. B. B. Navale,



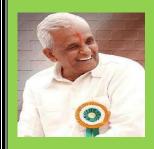
Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



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Vidnyan Mahavidyalaya, Sangola

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Dr. Yuvraj Hari Navale

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Fabtech College of Engineering and Research, Sangola

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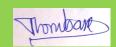
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This is to certify that **Dr.Swati Dattu Patil**

of

Pratapsinh Mohite-Patil Mahavidyalaya, Karmala

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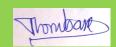
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Dr. S. M. Mulani Principal







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This is to certify that **Gajanan Madhukar Hingangavkar**of

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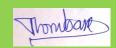
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Dr. S. M. Mulani Principal







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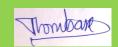
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Dr. S. M. Mulani Principal







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This is to certify that

Juveriya Sajjadhusen Shaikh

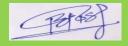
of

C. B. Khedgi's, B. Science, R.V. Commerce and R. J. Art's College, Akkalkot has participated

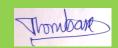
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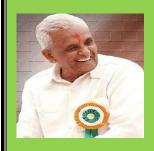
Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani
Principal







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This is to certify that **Kadam Dheeraj Dhananjay**

of

Mahatma Gandhi Mahavidyalaya, Ahmedpur

has participated

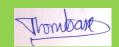
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Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







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This is to certify that

Khandagale Vaishanvi Baban

of

Sangola College Sangola

has participated

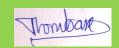
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Dr. B. B. Navale,



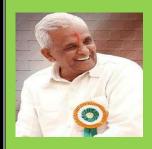
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Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







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This is to certify that

Ladda Payal Rajgopal

of

D.S.T.S Mandal's College of Pharmacy, Solapur

has participated

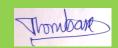
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Dr. B. B. Navale,



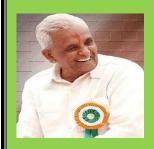
Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







Vidnyan Mahavidyalaya, Sangola

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CERTIFICATE

This is to certify that

Mahadevi V

of

Department of Physics, Gulbarga University, Kalaburagi

has participated

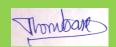
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Dr. B. B. Navale,



Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







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This is to certify that

Miss. Nadeghar Alfiya Md. Husain

of

D.B.F.Dayanand College of Arts and Science, Solapur

has participated

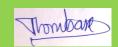
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Dr. B. B. Navale,



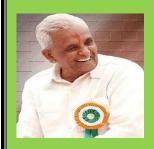
Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







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This is to certify that **Miss. Sujata Gopal Pore**

of

D.S.T.S Mandal's College of Pharmacy, Solapur

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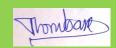
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Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







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This is to certify that

Miss.Nisha vijay Kaldate

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S. S. G. M. College, Kopargaon.

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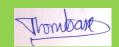
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Dr. B. B. Navale, Head



Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani
Principal







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This is to certify that

Monika Mallikarjun Shirawar

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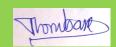
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Dr. J. V. Thombare
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Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







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This is to certify that Mr. Sagar Tanaji Fulari

of

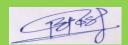
Shivaji University, Kolhapur

has participated

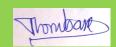
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This is to certify that

Mr. Alhat Sachin Khandu

of

PDEA's Annasaheb Magar Mahavidyalaya, Hadapsar

has participated

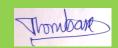
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This is to certify that

Mr. Jagannath S. Godse

of

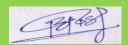
Dept. of Chemistry, Deogiri College, Chhatrapati Sambhajinagar (Aurangabad Maharashtra, India-431005

has participated

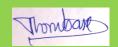
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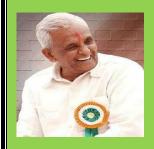
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This is to certify that

Mr. Khulpe Vijay Dattatraya

of

Punyashlok Ahilyadevi Holkar Solapur University Solapur

has participated

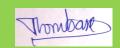
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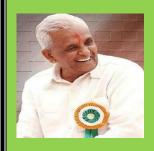
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Dr. S. M. Mulani Principal







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This is to certify that **Nanasaheb Sugriv Pawar**

of

Punyashlok Ahilyadevi Holkar Solapur University Solapur

has participated

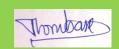
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Dr. J. V. Thombare Convener



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This is to certify that **Nandkumar Dnyaneshwar Veer**

of

Annasaheb Magar Mahavidyalaya Hadapsar Pune 411028

has participated

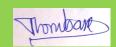
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Dr. B. B. Navale,



Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



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This is to certify that **Neha Shivanand Banajgole**

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D.B.F.Dayanand College of Arts and Science, Solapur

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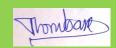
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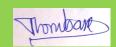
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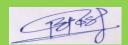
Punyashlok Ahilyadevi Holkar Solapur University Solapur

has participated

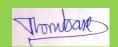
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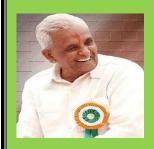
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Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar

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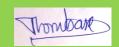
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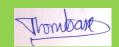
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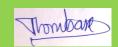
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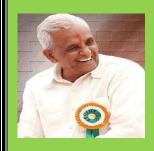
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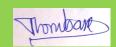
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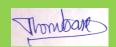
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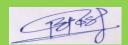
Shri. Shivaji Mahavidyalaya, Barshi

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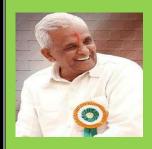
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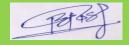
Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar

has participated

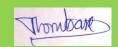
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Dr. B. B. Navale, Head



Dr. J. V. Thombare

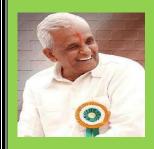
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Prashant Suresh Pise

of

Jaysingpur College, Jaysingpur

has participated

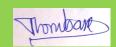
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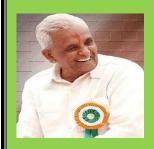
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This is to certify that

Prathamesh Prakash Patil

of

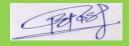
Nowrosjee Wadia College Pune

has participated

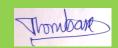
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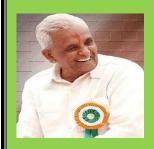
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This is to certify that

Priyanka Kalyan Giri

of

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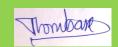
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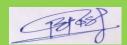
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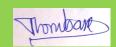
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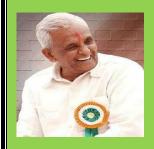
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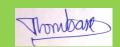
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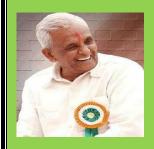
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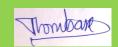
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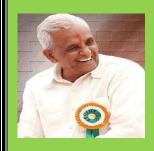
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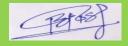
B.P.H.E. Society's Ahmednagar College Ahmednagar

has participated

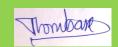
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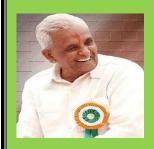
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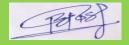
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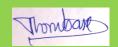
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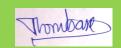
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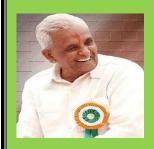
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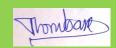
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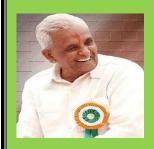
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Dr. S. M. Mulani Principal







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Tal-Sangola, Dist-Solapur, MH- 413307, India. (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organized an

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Dated on May 03-04, 2023

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This is to certify that

Shinde Dinesh Prakash

of

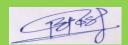
D.B.F.Dayanand College of Arts and Science, Solapur

has participated

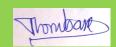
in

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Dated on May 03-04, 2023



Dr. B. B. Navale,



Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani
Principal







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This is to certify that **Shivani S. Gavande** of

Punyashlok Ahilyadevi Holkar Solapur University Solapur

has participated

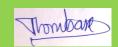
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Dr. B. B. Navale,



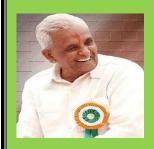
Dr. J. V. Thombare
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This is to certify that

Shrinivas Vinayak Kulkarni

of

Vidnyan Mahavidyalaya Sangola

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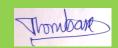
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Dr. J. V. Thombare
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This is to certify that

Snehal Yallappa Shivsharan

of

Santosh Bhimrao Patil Arts Commerce and Science College, Mandrup has participated

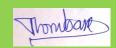
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This is to certify that **Tanaji Mahadev Nimbalkar**

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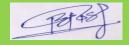
School of Physical Sciences, Punyashlok Ahilyadevi Holkar Solapur University, Solapur

has participated

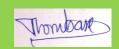
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Dr. B. B. Navale, Head



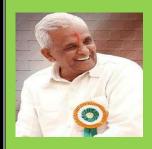
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Dr. S. S. Dhasade Coordinator, IQAC



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CERTIFICATE

This is to certify that **Tavatm Anjali Nagbhushnam**

of

D.B.F.Dayanand College of Arts and Science, Solapur

has participated

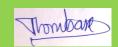
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CERTIFICATE

This is to certify that

Vaishali S. Chandak

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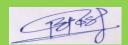
Dayanand Science College, Latur

has participated

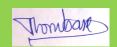
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This is to certify that

Vhatkar Shweta Ramesh

of

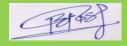
D.B.F.Dayanand College of Arts and Science, Solapur

has participated

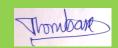
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Dr. B. B. Navale,



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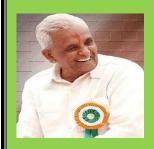
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This is to certify that

Vikas Nagnath Kendre

of

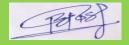
Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar

has participated

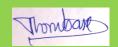
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Dr. B. B. Navale,



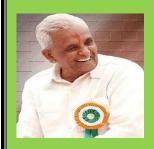
Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal







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This is to certify that **Vishal Bajirao Ankar**

of

Department of Physics, Shivaji University, Kolhapur

has participated

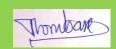
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This is to certify that

Vishal Uddhav Nikam

of

K. J. Somaiya College of Arts, Commerce and Science, Kopargaon has participated

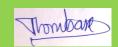
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Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani
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This is to certify that

Yeladi Meghana Mohan

of

D.B.F.Dayanand College of Arts and Science, Solapur

has participated

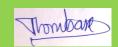
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Dr. J. V. Thombare
Convener



Dr. S. S. Dhasade Coordinator, IQAC



Dr. S. M. Mulani Principal

RTNA-2023 List of Participants Participants presented oral and poster presentation:

Sr No.	Name of Participant	Institute Name	Title of paper
CPP01	Dr. Kavale Mahendra Suhas	Sangameshwar College, Autonomous, Solapur	Consequence of Co – Precursor on Interfacial Tensions Concerning Water And Silica Coatings
CPP02	Ankush Prakash Pawar	D.S.T.S. Mandals College of Pharmacy, Solapur.	Analytical Method Development and Validation of RP-HPLC Method for the Estimation of Methocarbamol in Bulk and Formulation
CPP03	Rupali Ashok Kadam	Ahmednagar College, Ahmednagr-414001	Electrochemial Study of the Cobalt Vanadium Oxide-CNT Compositeby the Hydrothermal Approach
CPP04	Mr. Parmeshwar Tanaji Lokhande	Walchand College of Arts and Science, Solapur.	Solar light active Ni-doped barium ferrichromites synthesized by sol-gel method and their excellent photocatalytic activity.
CPP05	Sapkal Aniket Ganesh	D.S.T.S. Mandal's College of Pharmacy, Solapur.	Smoking Status in Young Generation A review
CPP06	Ms. Sonali Ramesh Jadhav	Shivaji University, Kolhapur	Tailoring the oxygen vacancies in Fe ₂ O ₃ /ZnO nanocomposite via deep eutectic solvents for effective photodegradation

			of Rhodamine B dye
CPP07	Mr. Maruti Baliram Kumbhar	Dayanand Science College, Latur	Synthesis and Characterization of Pure and Co-Doped NiO Nanoparticles Using Co- Precipitation Method
CPP08	Choukhande Vanita Padamanna	D.S.T.S. Mandal's College of Pharmacy, Solapur.	Development and Validation of Rp-HPLC method for the Estimation of Mesalamine in Bulk and Formulation.
CPP09	Sonali Ashok Derle	K. S. K. W College, CIDCO, Nashik	Aegle marmelos leaves extract mediated synthesis and characterization of ZnO-CuO nanocomposites
CPP10	Mr. Parmeshwar Tanaji Lokhande	SVERI's College Of Engineering (Poly.), Pandharpur.	Solar light active Ni-doped barium ferrichromites synthesized by sol-gel method and their excellent photocatalytic activity
CPP11	Shubham Pandurang Bet	D.S.T.S. Mandal's College of Pharmacy, Solapur.	Development and evaluation of dental gel containing clove oil and neem oil for the treatment of periodontal diseases
CPP12	Katore Kajal Anil	MVP Samaj's Karmveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College CIDCO, Nashik	LawsoniaInermis leaves extract mediated synthesis and characterization of CdS quantum dots
CPP13	Shaikh Sabanaaz Aminuddin	MVP Samaj's Karmveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College CIDCO, Nashik	Beta Vulgaris Plant extract phytochemicals stabilized synthesis and

			characterization of Nickel oxide (NiO) Nanoparticles
CPP14	Kunal Bhagwan Erande	Shivaji University Kolhapur	Investigating the role of oxygen vacancies in CeO ₂ for effective Rhodamine B degradation
CPP15	Gaikwad Swati Sainath	MVP Samaj's Karmveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College CIDCO, Nashik	Green approach for synthesis and characterization of NiO nanoparticles mediated by morus alba plant leaves extract
CPP16	Katore Kajal Anil	MVP Samaj's Karmveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College CIDCO, Nashik	LawsoniaInermis leaves extract mediated synthesis and characterization of CdS quantum dots
CPP17	Shaikh SabanaazAminuddin	MVP Samaj's Karmveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College CIDCO, Nashik	Beta Vulgaris Plant extract phytochemicals stabilized synthesis and characterization of Nickel oxide (NiO) Nanoparticles
CPP18	Kunal Bhagwan Erande	Shivaji University Kolhapur	Investigating the role of oxygen vacancies in CeO2 for effective Rhodamine B degradation
CPP19	Gaikwad Swati Sainath	MVP Samaj's Karmveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College CIDCO, Nashik	Green approach for synthesis and characterization of NiO nanoparticles mediated by morus alba plant leaves extract
CPP20	Sharmin Ibrahim Mujawar	Shivaji University Kolhapur	Kinetics and mechanism of

			oxidation of aspirin and
			salicylic acid by
			enneamolybdomangate(IV)
			in aqueous hydrochloric
			acid medium.
	Dr. Prakash Maruti Kulal	Shivaji Mahavidyalaya Renapur	The role of chromium
			doping on structural,
CPP21			morphological, and optical
			properties of ZnO thin
			films
			Tungsten Oxide Thin Film
	Mr Dhalabandra Vashinath		Synthesized by
CPP22	Mr. Bhalchandra Kashinath Mandlekar	Institute of science, Mumbai	Electrodeposition for
			Electrochromic
			Applications.
	Komal Dadaji Khairnar	MVD Compile Vormerous Chapterson have Vordeii	Synthesis and
CDD22		MVP Samaj's Karmveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College CIDCO, Nashik	characterization of Cuo-
CPP23			Co ₃ O ₄ @NiO core shell
			nanoplate.
	Akanksha Milind Sajgure	MVP Samaj's KarmveerShantarambapuKondajiWavareArts,Science	Synthesis and
CDD24			characterisation of CuO-
CPP24			Co ₃ O ₄ @NiO core shell
		and Commerce College CIDCO, Nashik	nanoplates
			Formulation and
CDD4.5	Gajare Sandhyarani Bapusaheb	D.S.T.S. Mandal's College of Pharmacy, Solapur.	evaluation of herbal
CPP25			lipstick from beetroot
			powder.
	Shraddha Rajnarayan Mishra		Biosynthesis and
CPP26		MVP Samaj's Karmveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College CIDCO, Nashik	characterization of Mn ₃ O ₄
			nanoparticles mediated by
			Madhuca Longifolia plant
			leave extract
			leave extract

CPP27	Kadam Akanksha Krishnath	Sangameshwar College, Solapur (Autonomous)	Review on Recent issues of Microplastics: Understanding the Minute Crisis with Big Consequences
CPP28	Kutte Vikas Dhondiba	Yeshwant Mahavidyalaya Nanded	Synthesis, characterization, dielectric study and photocatalytic application of Cu-Nax for dye degradation
CPP29	Dr. C. V. Chanmal	D. B. F. Dayanand College of Arts and Science, Solapur	Study of Dielectric and Field Modulation Studies in Polymer Nanocomposites
CPP30	Ramesh Arun Bugad	Sangola Mahavidyalaya ,Sangola	DC electrical resistivity of Aluminum substituted Cobalt ferrite nanocomposites
CPP31	Ravishankar Ramesh Ambi	Jaysingpur College, Jaysingpur	NO ₂ gas sensing properties of NiO coat ZnO thin film prepared by chemical bath deposition method
CPP32	Dr. Bharat Govind Pawar	Sangola Mahavidylaya, Sangola	DC electrical resistivity of aluminum substituted Cobalt ferrite nanocomposites

CPP33	Aishwarya Sitaram Dongare	D.S.T.S. Mandal's College of Pharmacy, Solapur.	Antimicrobial activity of flaxseed marketed oil on different microbes
CPP34	Saba naaz Irshad Ahmed	Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar.	Fabrication of device on conducting polymer for supercapacitor application
CPP35	Dr. Parshuram Baburao Abhange	G. M. Vedak College of Science, Tala, Raigad.	Electrodeposition of Nickel ferrite thin films for supercapacitive study

Dr. J. V. Thombare

Convener RTNA-2023

RTNA-2023 List of Participants Best Participation List

Sr No.	Name of Participant	Institute Name	
CBP01		Punyashlok Ahilyadevi Holkar Solapur	
	Abhijeet Prithviraj Patil	University, Solapur	
CBP02	Amrapali Vinayak Kambali	Dayanand	
CBP03		D.S.T.S Mandal's College of Pharmacy,	
	Ankita Nagesh Zunjkar	Solapur	
CBP04		Punyashlok Ahilyadevi Holkar Solapur	
	Avinash Chandrakant Molane	University, Solapur	
CBP05		D.B.F.Dayanand College of Arts and	
	Banajgole Nikita Shivanand	Science, Solapur	
CBP06		D.B.F.Dayanand College of Arts and	
	Bicchal Sanjana yallappa	Science, Solapur	
CBP07	Chetankumar Dattatraya	Annasaheb Magar Mahavidyalaya, Hadapsar,	
	Chavare	Pune	
CBP08		D.B.F.Dayanand College of Arts and	
	Chougule Samarth Bhagwan	Science, Solapur	
CBP09		D.B.F.Dayanand College of Arts and	
	Divya Manteshwar Balapuri	Science, Solapur	
CBP10	Domal Chandrama Govind	Dayanand institution Solapur	
CBP11	Dr. Babaso Shishupal Kamble	D. B. J. College, Chiplun	
CBP12	Dr. Muddsar Laldemashak	C. B. Khedgi's, B. Science, R.V. Commerce	
	Gaur	and R. J. Art's College, Akkalkot	
CBP13	Dr. Navale Bhagwan Bhanudas	Vidnyan Mahavidyalaya Sangola	
CBP14	Dr. Rajendra Shrirang	, , ,	
	Gaikwad	Vidnyan Mahavidyalaya Sangola	
CBP15		Shrimant Babasaheb Deshmukh	
	Dr. Rupesh Bramhadeo Kadam	Mahavidaylaya, Atpadi	
CBP16			
	Dr. Shubhangi S.Gavande	(Autonomous)	
CBP17	Dr. Suraj Subhash Nikte	Fabtech Technical Campus, Sangola	
CBP18		Dr.Babasaheb Ambedkar Marthwada	
	Dr. Vijaykiran N. Narwade	University, Chhatrapti Sambhajinagar	
CBP19		Fabtech College of Engineering and	
	Dr. Yuvraj Hari Navale	Research, Sangola	
CBP20	_	Pratapsinh Mohite-Patil	
	Dr.Swati Dattu Patil	Mahavidyalaya,Karmala	
CBP21	Gajanan Madhukar	D.B.F.Dayanand College of Arts and	
	Hingangavkar	Science, Solapur	
CBP22		D.B.F.Dayanand College of Arts and	
	Ingale Om Subhash	Science, Solapur	
CBP23	Juveriya Sajjadhusen Shaikh	C B Khedagi's College Akkalkot	
CBP24	Kadam Dheeraj Dhananjay	Mahatma Gandhi Mahavidyalaya, Ahmedpur	
CBP25	Khandagale Vaishanvi Baban		
CBP26		D.S.T.S Mandal's College of Pharmacy,	
	Ladda Payal Rajgopal	Solapur	
CBP27	Mahadevi V	Department of Physics, Gulbarga	
1	1	J / " O"	

		University,Kalaburagi	
CBP28	Miss. Nadeghar Alfiya Md.	D.B.F.Dayanand College of Arts and	
CDI 20	Husain	Science, Solapur	
CBP29	Tusum	D.S.T.S Mandal's College of Pharmacy,	
CDI 2)	Miss. Sujata Gopal Pore	Solapur	
CBP30	Miss.Nisha vijay Kaldate	S.S.G.M.College, Kopargaon.	
CBP31	141155.1415Ha vijay Ixaidate	D.S.T.S.Mandals College of	
CDISI	Monika Mallikarjun Shirawar	Pharmacy, Solapur	
CBP32	Mr, Sagar Tanaji Fulari	Shivaji University Kolhapur	
CBP33	1411, Sugar Tunaji Tunari	PDEA's Annasaheb Magar Mahavidyalaya,	
CDISS	Mr. Alhat Sachin Khandu	Hadapsar	
1		Dept. of Chemistry, Deogiri College,	
0210.		Chhatrapati Sambhajinagar (Aurangabad)	
	Mr. Jagannath S. Godse	Maharashtra, India-431005	
CBP35		Punyashlok Ahilyadevi Holkar Solapur	
	Mr.Khulpe Vijay Dattatraya	University, Solapur	
CBP36	1 3 3	Punyashlok Ahilyadevi Holkar Solapur	
	Nanasaheb Sugriv Pawar	University Solapur	
CBP37		Annasaheb Magar Mahavidyalaya Hadapsar	
	Nandkumar Dnyaneshwar Veer	Pune 411028	
CBP38		D.B.F.Dayanand College of Arts and	
	Neha Shivanand Banajgole	Science, Solapur	
CBP39		Santosh Bhimrao Patil Arts Commerce and	
	Nimbargi jyoti siddharam	Science College,Mandrup	
CBP40		Punyashlok Ahilyadevi Holkar Solapur	
	Nita Uttam Kalugade	University Solapur	
		Dr. Babasaheb Ambedkar Marathwada	
	Nobel Uttam Hajare	University, India	
CBP42		D.S.T.S Mandels College of Pharmacy,	
	Obaidullah Hundekari	Solapur	
CBP43	Pallavi Sahebrao Gaikwad	Sangola College Sangola	
CBP44		D.B.F.Dayanand College of Arts and	
	Pooja Rajendra Kore	Science, Solapur	
CBP45		D.B.F.Dayanand College of Arts and	
GD 7 4 4	Prajakta Vilas Sontakke	Science, Solapur	
CBP46	Pranita Madhukar Jondhale	Shri. Shivaji Mahavidyalaya, Barshi	
CBP47	D 1 (17 1 17	Dr.Babasaheb Ambedkar Marthwada	
CDP 40	Prashant Keshav Kasare	University, Chhatrapti Sambhajinagar	
CBP48	Prashant Suresh Pise	Jaysingpur College, Jaysingpur	
CBP49	Prathamesh Prakash Patil	Nowrosjee Wadia College Pune	
CBP50	D. L. W.L. C.	Punyashlok Ahilyadevi Holkar, Solapur	
CDD51	Priyanka Kalyan Giri	University Solapur	
CBP51	D 1 41 1 1	D.B.F.Dayanand College of Arts and	
CDDCC	Raghunath sham gadgi	Science, Solapur	
CBP52	Ratikant Shivarudra	Cl	
CDD52	Bahirgonde	Sbpm	
CBP53	Rohit Phadatare	Sbpm	
CBP54	Caralless DI (D. I. II	B.P.H.E. Society's Ahmednagar College	
	Sandhya Bharat Deshmukh	Ahmednagar	

CBP55 Shaikh Kahkashan Anjum Dr. Babasaheb Ambedkar		Dr. Babasaheb Ambedkar Marathwada	
	Mohammed Roshan	University, Chhatrapati Sambhajinagar	
CBP56		D.B.F.Dayanand College of Arts and	
	Sharvari Mukund Shekhdar	Science, Solapur	
CBP57		D.B.F.Dayanand College of Arts and	
	Shaukat Lala Tamboli	Science, Solapur	
CBP58 D.B.		D.B.F.Dayanand College of Arts and	
	Shinde Dinesh Prakash	Science, Solapur	
CBP59		Punyashlok Ahilyadevi Holkar Solapur	
	Shivani S. Gavande	University, Solapur	
CBP60	Shrinivas Vinayak Kulkarni	nivas Vinayak Kulkarni Vidnyan Mahavidyalaya Sangola	
CBP61		Santosh Bhimrao Patil Arts Commerce and	
	Snehal Yallappa Shivsharan	Science College, Mandrup	
CBP62		School of Physical Sciences, Punyashlok	
		Ahilyadevi Holkar Solapur University,	
	Tanaji Mahadev Nimbalkar	Solapur	
CBP63 D.B.F.Dayana		D.B.F.Dayanand College of Arts and	
	Tavatm Anjali Nagbhushnam	Science, Solapur	
CBP64	Vaishali S. Chandak	Dayanand Science College, Latur	
		D.B.F.Dayanand College of Arts and	
	Vhatkar Shweta Ramesh	Science, Solapur	
CBP66		Dr. Babasaheb Ambedkar Marathwada	
		University, Chhatrapati Sambhajinagar,	
	Vikas Nagnath Kendre	Maharashtra	
CBP67		Department of Physics, Shivaji University,	
	Vishal Bajirao Ankar	Kolhapur	
CBP68		K. J. Somaiya College of Arts, Commerce	
	VISHAL UDDHAV NIKAM	and Science, Kopargaon	
		D.B.F.Dayanand College of Arts and	
	Yeladi Meghana Mohan	Science, Solapur	





VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

Mob. No. 9850792244

(Affiliated to P.A. H. Solapur University)

Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/ RTHA-2023

Date: 06/05/2023

Letter of Appreciation

To,

Dr. S. N. Kadam,

Department of Chemistry,

Vidnyan Mahavidyalaya, Sangola.

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for being with us as a "Chairperson" during Technical Session dated on May 04, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions.

Thanking you,



(Arts & Science, E.C.S. & B.C.A.)

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Principal: Dr. S.M.Mulani

Website: www .vmssangola.org

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/RTHA-2023

M.A.Ph.D. (Geography)

Date: 06/05/2023

Letter of Appreciation

To,

Dr. S. R. Kulal,

Department of Chemistry,

Raje Ramrao Mahavidyalaya, Jath.

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for being with us as a "Chairperson" during Technical Session dated on May 04, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions. Thanking you,



VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)
Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

Off. (02187) 220508Mob. No. 9850792244

Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

(Affiliated to P.A. H. Solapur University)

Principal: Dr. S.M.Mulani

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

M.A.Ph.D. (Geography)

Ref. No. 2022-23 | RTHA-2023

Date: 06 / 05 /2023

Letter of Appreciation

To,

Dr. R. A. Bugad,
Department of Chemistry,

Subject: Letter of Appreciation

Sangola Mahavidyalaya, Sangola.

Dear Sir,

We are very much thankful to you for being with us as a "Chairperson" during Technical Session dated on May 04, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions.

Thanking you,

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

Yours



(Arts & Science, E.C.S. & B.C.A.)

★ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244

Email: vidnyanms@yahoo.co.in

(Affiliated to P.A. H. Solapur University)

Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/RTHA-2023

Date: 06/05/2023

Letter of Appreciation

To,

Dr. S. M. Mane,

Dongguk University,

South Korea.

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for being with us as a "Chairperson" during Technical Session dated on May 03, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions. Thanking you,



(Arts & Science, E.C.S. & B.C.A.)

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Email: vidnyanms@yahoo.co.in

(Affiliated to P.A. H. Solapur University)

Website: www.vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/RTNA-2023

Date: 06/05/2023

Letter of Appreciation

To,

Dr. P. A. Bansode, Department of Chemistry, Sangola Mahavidyalaya, Sangola.

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for being with us as a "Chairperson" during Technical Session dated on May 03, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions. Thanking you,



VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

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Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal: **Dr. S.M.Mulani** M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-2B/RTHA-2023

Date: 06 /05 /2023

Letter of Appreciation

To,

Prof. (Dr.) R. S. Mane,

Swami Ramanand Teerth Marathwada University,

Nanded.

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for being with us as a "Chief Guest" during Valedictory Function dated on May 04, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & motivated participants.

Your views will definitely enlighten all the participants of RTNA-2023 to make awareness about Nano-materials and its use in device technology. So, thank you very much for your kind support and valuable discussions.

Thanking you,



VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University) Email: vidnyanms@yahoo.co.in

Website: www .vmssangola.org

Principal: **Dr. S.M.Mulani** M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/ RTMA-2023

Date: 06/05/2023

Letter of Appreciation

To,

Dr. Mahesh Shinde,

Twelve Benefit Corporation,

California,

USA.

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for delivering a "Invited Talk" during Technical Session dated on May 04, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & delivered a wonderful Invited talk.

Your talk will definitely enlighten all the participants of RTNA-2023 to make awareness about Nano-materials and its use in device technology. So, thank you very much for your kind support and valuable discussions.

Thanking you,

(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University)

Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/ RTNA-2023

Date: 06/05/2023

Letter of Appreciation

To. Dr. M. P. Suryavanshi, School of Photovoltaic & Renewable Energy Engineering, University of New South Wales, Sydney.

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for delivering a "Invited Talk" during Technical Session dated on May 04, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & delivered a wonderful Invited talk on Materials synthesis and its supercapacitive study.

Your talk will definitely enlighten all the participants of RTNA-2023 to make awareness about Nano-materials and its use in device technology. So, thank you very much for your kind support and valuable discussions. Thanking you,



(Arts & Science, E.C.S. & B.C.A.)

Construction of the constr

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University)

Email: vidnyanms@yahoo.co.in

Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/RTNA-2023

Date: 06/05/2023

Letter of Appreciation

To,

Dr. C. D. Bathula,

Division of Electronics & Electrical Engineering,

Dongguk University,

Republic of Korea.

Subject: Letter of Appreciation

Dear Sir.

We are very much thankful to you for delivering a "Invited Talk" during Technical Session dated on May 03, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & delivered a wonderful Invited talk on Semiconductors and Photovoltaics.

Your talk will definitely enlighten all the participants of RTNA-2023 to make awareness about Nano-materials and its use in device technology. So, thank you very much for your kind support and valuable discussions. Thanking you,



(Arts & Science, E.C.S. & B.C.A.)

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Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/RTNA-2023

Date: 06/05/2023

Letter of Appreciation

To,

Prof. (Dr.) V. B. Patil, School of Physical Science, Punyashlok Ahilyadevi Holkar Solapur University, Solapur.

Subject: Letter of Appreciation

Dear Sir.

We are very much thankful to you for delivering a "Keynote Address" during Inaugural Session dated on May 03, 2023 on the eve of International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023). You have accepted our invitation & delivered a wonderful Keynote Address.

Your talk will definitely enlighten all the participants of RTNA-2023 to make awareness about Nano-materials and its use in device technology. So, thank you very much for your kind support and valuable discussions. Thanking you,



(Arts & Science, E.C.S. & B.C.A.)

Company of the original of the

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(Affiliated to P.A. H. Solapur University)

Website: www .vmssangola.org

Principal: Dr. S.M.Mulani

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

M.A.Ph.D. (Geography)

Ref. No. 2022-23/ RTNA-2028

Date: 06 105 12023

"To whomsoever it may concern"

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organized an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023) dated on May 03-04, 2023.

Dr. S. M. Mane has been worked as "Member of Organizing Committee" for RTNA-2023.

'Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola'

VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

(Affiliated to P.A. H. Solapur University)

Principal: Dr. S.M.Mulani

(Third Cycle Accredited by NAAC

Ref. No. 2022 - 23/RTHA - 2023

M.A.Ph.D. (Geography)

Date: 06/05/2023

with 'B' Grade (CGPA of 2.24)

"To whomsoever it may concern"

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organized an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023) dated on May 03-04, 2023.

Dr. V. M More has been worked as "Member of Organizing Committee" for RTNA-2023.



(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University)

Email: vidnyanms@yahoo.co.in

Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2012-25/2THA-2013

Date: 06/05/2023

"To whomsoever it may concern"

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organized an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023) dated on May 03-04, 2023.

Mr. A. M. Kamble has been worked as "Member of Organizing Committee" for RTNA-2023.

(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University)

Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/ RTHA-2023

Date: 06/05/2023

"To whomsoever it may concern"

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organized an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023) dated on May 03-04, 2023.

Dr. D. K. Bandgar has been worked as "Member of Organizing Committee" for RTNA-2023.



VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

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Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal: **Dr. S.M.Mulani** M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2022-23/ RTHA - 2023

Date: 06/05/2023

"To whomsoever it may concern"

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organized an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023) dated on May 03-04, 2023.

Dr. B. B. Navale has been worked as "Member of Organizing Committee" for RTNA-2023.

(Arts & Science, E.C.S. & B.C.A.)

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Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University)

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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 2012-73/ RTHA-2023

Date: 06/05/2023

"To whomsoever it may concern"

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organized an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023) dated on May 03-04, 2023.

Dr. J. V. Thombare has been worked as "Convener" for RTNA-2023.



(Arts & Science, E.C.S. & B.C.A.)

Company of the original of the

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University)

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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

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Ref. No. 2022-23/RTNA-2023

Date: 06/05/2023

"To whomsoever it may concern"

Department of Physics in collaboration with Internal Quality Assurance Cell (IQAC) organized an International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023) dated on May 03-04, 2023.

Dr. S. S. Dhasade has been worked as "Organizing Secretary" for RTNA-2023.

Vidnyan Mahavidyalaya, Sangola

Tal-Sangola, Dist-Solapur, MH- 413307, India. (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of Physics in collaboration with Internal Quality
Assurance Cell (IQAC)

Organizes

An International e-Conference on Recent Trends in Nano-Materials and Its Applications-2023 (RTNA-2023)

You Tube Link

Day1st: https://youtu.be/bq-3901D-3w

Day 2nd: https://youtu.be/l-Skyirb9TM

Feedback report of RTNA-2023

Department of Physics has successfully conducted a online International e-Conference on Recent Trends in Nanomaterials and It's Applications during May 03-04, 2023.

Herewith I am submitting the report of Feedback received from Participants:

- Total no. of participants submitted their views about RTNA:

- List of Participants Institutes:

- 1) Shivaji University Kolhapur
- 2) Punyashlok Ahilyadevi Holkar Solapur University, Solapur
- 3) Karmveer Shantarambapu KondajiWavare, Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik
- 4) K. J. Somaiya College of Arts, Commerce and Science, Kopargaon
- 5) Sangola College Sangola
- 6) RCP Higher Secondary Ashramschool Nimzari
- 7) D.S.T.S. Mandal's College of Pharmacy, Solapur
- 8)K. J. Somaiya College of Science and Commerce, Mumbai.
- 9) D.S.T.S Mandal's college of pharmacy solapur Maharashtra
- 10) Yeshwant Mahavidyalaya Nanded
- 11) Shivaji University, Kolhapur
- 12) Nowrosjee Wadia College Pune
- 13) D B F Dayanand College of arts and science Solapur
- 14) S.S.G.M.College, Kopargaon.
- 15) K.s.k.w.cidco college nashik
- 16) C B Khedagi's College Akkalkot
- 17) Dayanand Science College, Latur
- 18) D.B.F.Dayanand college of arts and Science, Solapur
- 19) Institute of science Mumbai

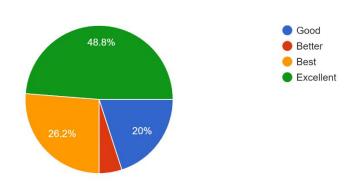
- 20) D.S.T.S. Mandals college of pharmacy solapur
- 21) Annasaheb magar mahavidyalaya Hadapsar Pune 411028
- 22) Department of Chemistry, Deogiri College, Chhatrapati Sambhajinagar (Aurangabad), Maharashtra, India-431005
- 23) Dept of physics gulbarga university kalaburagi
- 24) DSTS mandal's College of pharmacy Solapur
- 25) School of Physical Sciences, Punyashlok Ahilyadevi Holkar Solapur University, Solapur
- 26) D..B.F.Dayanand College of Art and Science Solapur
- 27) K.S.K.W college cidco nashik
- 28) Dayanand Science College, Latur
- 29) D.S.T.S. Mandal's College of Pharmacy, Solapur
- 30) Sangameshwar Autonomous College, Solapur
- 31) Shrimant Babasaheb Deshmukh Mahavidaylaya, Atpadi
- 32) Annasaheb Magar Mahavidyalaya, Hadapsar, Pune
- 33) Santosh Bhimrao Patil arts commerce and science college mandrup
- 34) Fabtech technical campus, Sangola
- 35) Sangola Mahavidyalaya, Sangola
- 36) Gulbarga University Kalaburagi.
- 37) Jaysingpur College, Jaysingpur
- 38) Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, India
- 39) PDEA's Annasaheb Magar Mahavidyalaya, Hasapsar
- 40) Walchand College Of Arts and Science, Solapur.
- 41) Santosh Bhimrao Patil Arts, Commerce And science College Mandrup
- 42) C. B. Khedgi's B. Science, R. V. Commerce and R.J. Art's College Akkalkot
- 43) Mahatma gandhi mahavidyalaya ahmedpur

- 44) Shri. Shivaji Mahavidyalaya, Barshi Dist. Solapur
- 45) D. B. J. College, Chiplun
- 46) Department of Physics, Shivaji University, Kolhapur.
- 47) Shivaji Mahavidyalaya Renapur
- 48) Dr. Babasaheb Ambedkar Marathwada University India

-Theme of the conference:

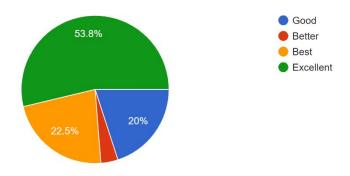
Theme of the conference.

80 responses



-Resource persons content delivered at RTNA-2023:

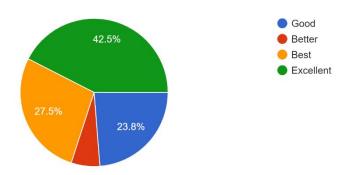
Resource persons content delivered at RTNA-2023 80 responses



-Technical management of Sessions:

Technical management of Sessions.

80 responses



-Notable suggestions from participants:

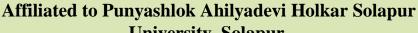
- great done conference
- Everything was good
- In future also conduct such conference
- Please do inform if there's any such conference in future
- Themes of energy storage be kindly planned.
- Very Nicely Organized, May in future also will be continued, Good Luck.
- Very nice information
- No it was good i will appreciate time management who involoved in management of e-conference.
- Overall program is excellent inform me about your any future conference thank you.
- Thanks to team RTNA for organizing this Usefully and needful e- conference to the all pg and research students I am to participate this conference and plz every year u will conduct like this conference bcz this is useful to all students thank you to team RTNA
- It was a nice talks by all resources persons. They also guides on
- the opportunity for researchers in their institutes. Thank you one and all.
- Nanotechnological applications be varied
- All over e-confrence was good.personally I enjoyed alot. Such type of conferences should be held to enhance students knowledge and boost their confidence ③.
- It was a great conference

- Thank you for organizing such a wonderful conference.Our knowledge has increased.
- All in all, the conference was excellent. Such type of conferences should be held to boost students' confidence to present their research work in front of highly knowledgeable and experienced people.
- All in all, the conference was excellent. Such type conferences should be held to boost students' confidence to present their research work in front of highly knowledgeable and experienced people.
- Nicely conducted
- If it can be organized offline, can proov excellent. As through onl sessions sometimes distraction occurs.
- Organize another same conference
- Well organised conference
- Overall very well organized
- The Session's on different mechanisms by using nanomaterials are excellent.
- No suggestions, all sessions are wonderful. Thank you.
- Pdf form of presented research paper during session should be shared with the participants
- we would like to attend a conference like this
- Overall good lecture series
- Take it offline
- conduct in offline mode.
- I am suggesting you to continue e conference of modern physics and chemistry or any other field like nano material is the very modern study of physics as well as chemistry so continue another like this topic thank you
- No. All things are excellent job very greatful
- Their session is very excellent and also informed .
- Sound qualtiy is poor
- Conference proceedings for RTNA if scopus index journal then it will be better more.



Vidnyan Mahavidyalaya, Sangola.

Tal-Sangola, Dist-Solapur, MH-413307, India.



University, Solapur.

Department of Political Science in Collaboration with Internal Quality Assurance Cell (IQAC)

Organizing

National Webinar on "The Challenges before Indian Democracy"
(On Dated 25th may, 2023 and Time 10 to 11:30AM)

Resource Persons



Associate Professor &
Head ,Department of Political Science
Sahkar Maharshi Shankarrao Mohite Patil College, Natepute



Adv. A. B Babar Advocate Mumbai High Court, Mumbai

- LINK FOR REGISTRATION https://forms.gle/WB3LEUgL98vXzx3E6
- **FREE REGISTRATION** There is no registration fee. After successful registration, join the telegram group by clicking on https://t.me/+9rPS3Glh-hA1Y2II or WhatsApp group by clicking on https://chat.whatsapp.com/E8WMtq3odS91QywKpTF0ms
- **CERTIFICATE OF PARTICIPATION** A certificate will be awarded upon completion of the webinar only registered candidates
- Zoom link for Joining:

https://us06web.zoom.us/j/6429496122?pwd=nUZ7I8dENdfgUfswYbQLb3btLqPdZX.1

Meeting ID: 642 949 6122

Passcode: USY2qp

Organizing Committee

Dr. S. M. Mulani Principal Vidnyan Mahavidyalaya, Sangola Mr.A.K.Wakade
Convener,
Head
Department of Political Science

Dr. S.S. Dhasade IQAC Coordinator

Dr. J.V. Thombare IQAC Co-Coordinator

Mr.A.M.Babar
Co-Convener,
Assistant Professor
Department of Political Science

Dear All registered participants...

Greetings from Vidnyan Mahavidyalaya, Sangola!!!

I may please inform you that Department of Political Science in Collaboration with Internal Quality Assurance Cell (IQAC),
Vidnyan Mahavidyalaya, Sangola has organized "National Webinar on "The Challenges before

Indian Democracy" on dated 25-05-2023 And Time 10 to 11.30 AM

Herewith I am sending the details of the a Webinar like a Webinar brochure, schedule and zoom neeting link for joining etc. Hope everything is fine.

Have a nice day...

Thanking you !!!!

Enclosures:

- LINK FOR REGISTRATION https://forms.gle/WB3LEUgL98vXzx3E6
- **FREE REGISTRATION** There is no registration fee. After successful registration, join the telegram group by clicking on https://t.me/+9rPS3Glh-hA1Y2II or WhatsApp group by clicking on https://chat.whatsapp.com/E8WMtq3odS91QywKpTF0ms
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Meeting ID: 642 949 6122

Passcode: USY2qp

Yours

Mr.Wakade A.K

Convener

9404670816

Mr. Babar A.M

Co-Convener

9325711919

सांगोला तालुका शेतकरी शिक्षण प्रसारक मंडळाचे.. पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ सोलापूर संलग्नित, विज्ञान महाविद्यालय, सांगोला.

राज्यशास्त्र विभाग आणि अंतर्गत गुणवत्ता हमी कक्ष.

ऑनलाइन राष्ट्रीय वेबिनर 2022-23 *"भारतीय लोकशाही समोरील आव्हाने"*

दिनांक २५ मे २०२३ वेळ सकाळी 10 ते दुपारी 12:30

कार्यक्रम पत्रिका

कार्यक्रमाचे स्वरूप	प्रमुख वक्ते	वेळ		
स्वागत व प्रास्तविक	प्रा अशोक वाकडे	10:00 ते 10:10		
प्रमुख पाहुणे परिचय बीजभाषक 1)	प्रा अतुल बाबर	10:11 ते 10:20		
बीजभाषक 1)	डॉ दत्तात्रय थोरात	10:21 ते 11:05		
	<u>"भारतीय लोकशाही समोरील आव्हाने"</u>			
बीजभाषक 2)	ऍड अमरसेन बाबर	11:06 ते 11:50		
	"भारतीय लोकशाही समोरील आव्हाने आणि			
	<u>संविधान"</u>			
अध्यक्षीय मनोगत	प्राचार्य डॉ सिकंदर मुलाणी	11:51 ते 12:10		
आभार	प्रा अविनाश लोखंडे	12:11 ते 12:17		
सूत्रसंचालन	प्रा अशोक वाकडे			

'सांगोला तालुका शेतकरी शिक्षण प्रसारका मंडळ, सांगोला' संबंशित



विज्ञान महाविद्यालय सांगीला

(कञ्चा, विकास, इ.सी.एस. व बी.सी.ए.) ता. सांगोला, जि. सोलापूर, पिन -४१३ ३०७ (महाराष्ट्र)

अते. : (०२१८७) २२०५०८ वी.जं. १८५०७१२२५४

E-mail vidnyarona@yahoo.co.in Website www.vinssangola.org

प्राचार्य : डॉ.एस.एम.मुलाजी एप.ए.पीएच.डी.(अ्रोल)

(पुण्यश्लोक अहिल्यादेवी होळका सोलापूर विद्यापीठाजी संस्वित)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

जावक क. निभावत । 2023-28

限計画: 05/03/203

निमंत्रण पत्र

प्रति.

मा. प्रा. डॉ. दत्तात्रय थोरात , राज्यशास्त्र विभागप्रमुख, सहकार महर्षी शंकरराव मोहिते पाटील महाविद्यालय, नातेपुते, ता. माळशिरस

विषय :- "भारतीय लोकशाही समोरील आव्हाने " या विषयावर ऑनलाईल वेबिनार कार्यऋमास साधन व्यक्ती म्हणून उपस्थित राहणेबाबत...

महोदय,

विज्ञान महाविद्यालयामध्ये गुरूवार दि. २५/५/२०२३ रोजी सकाळी १०.३० वा. " राज्यज्ञास्त्र विभागाच्या " च्या वतीने आयोजित केलेल्या "भारतीय लोकज्ञाही समोरील आव्हाने " या विषयावर ऑनलाईल वेबिनार कार्यक्रमास उपस्थित राहून आपण संशोधक व विद्यार्थ्यांना मार्गदर्शन करावे, ही विनंती. कळावे,

> आपला विश्वास प्राचीर्य विद्यान महाविधालय, सांगीला ता. सांगीला जि. सोलापूर

''सांगोला तालुका शेतकरी शिक्षण प्रसारक मंडक, सांगोला' संबंतित



विज्ञान महाविद्यालय सांगोला

(वङ्सा, विद्यान, इ.सी.एस. व बी.सी.ए.) ता. सांगोला, जि. सोलापूर, पिन –४१३ ३०७ (महाराष्ट्र) प्राचार्य : डॉ.एस.एम.मुलाणी

औ. । (०२१८७) २२०५०८ मी.मं. १८५०७१२२४४

E-mail vidnyarrns@yarico.co.in Website www.vrnssangola.org

(प्रथारनोक अहिल्यादेवी होळ्ळा सोलापुर विकापीठाजी संबंधित) (Third Cycle Accredited by NAAC with B' Grade (CGPA of 224)

जावक क. जामसी 2023-28

एम्.ए.पीएच.डी.(भूगोल)

दिनांक: 09/09/2023

निमंत्रण पत्र

प्रति.

मा. ॲंड. अमरसेन बाबर , उच्च न्यायालय, मुंबई

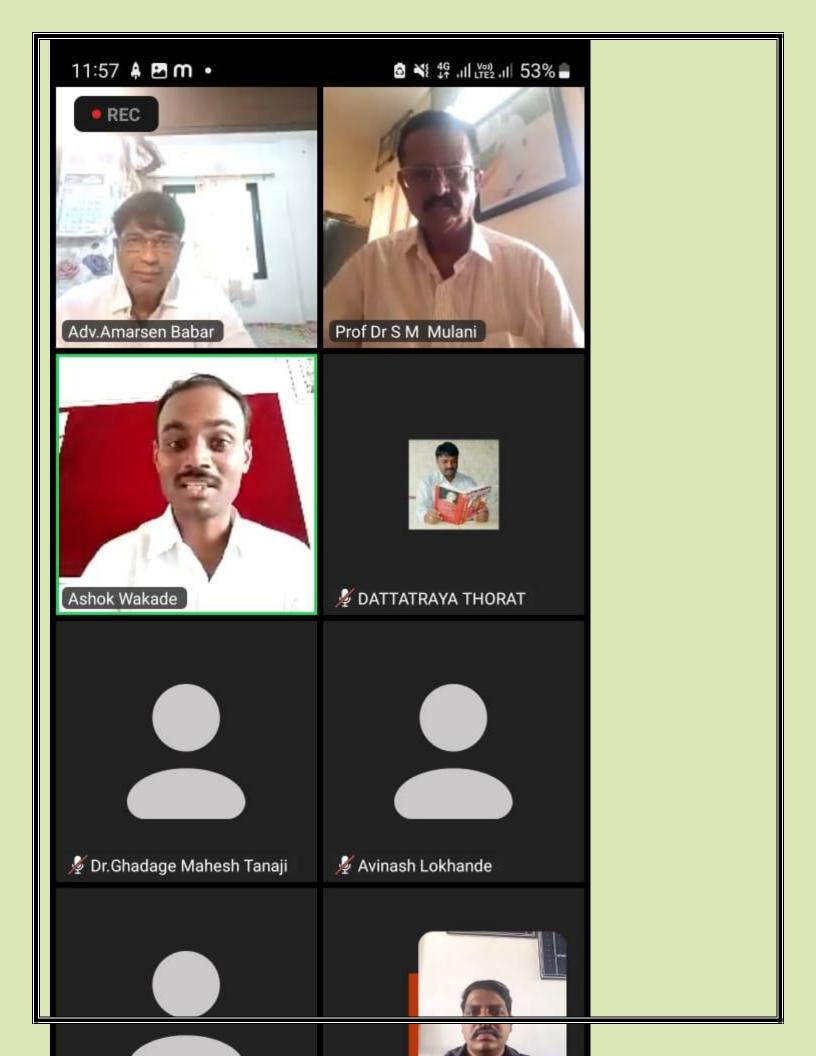
विषय:- "भारतीय लोकशाही समोरील आव्हाने " या विषयावर ऑनलाईल वेबिनार कार्यक्रमास साधन व्यक्ती म्हणून उपस्थित राहणेबाबत...

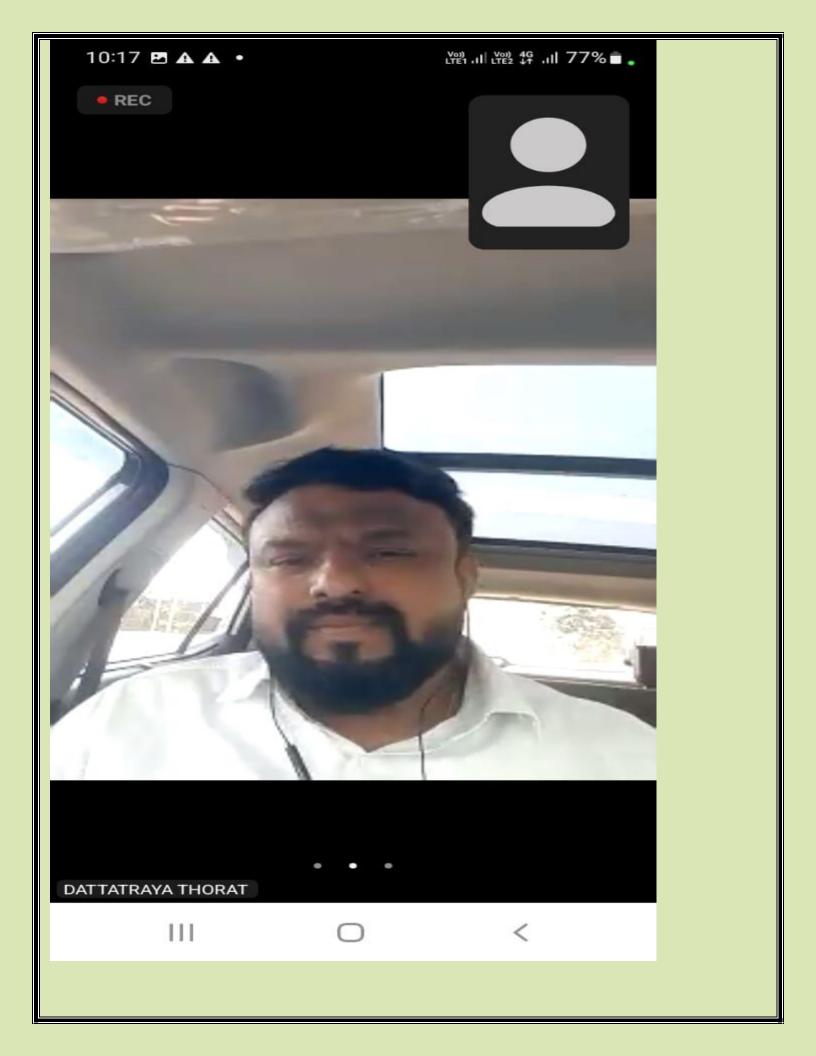
महोदय,

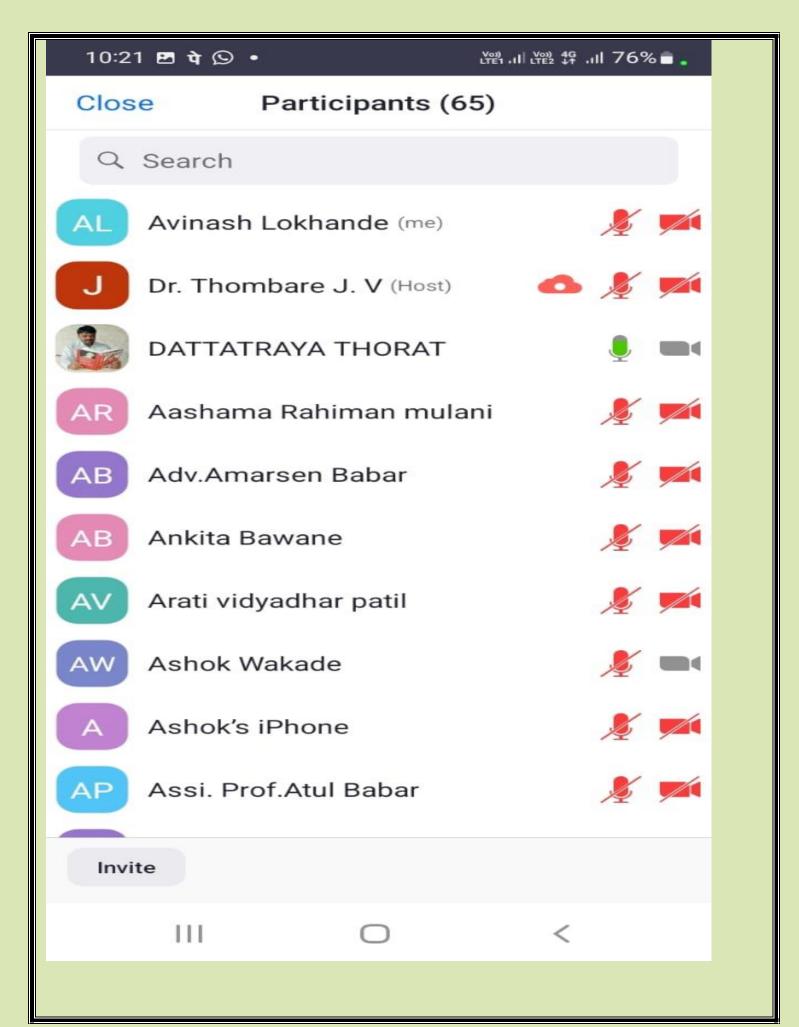
विज्ञान महाविद्यालयामध्ये गुरूवार दि. २५/५/२०२३ रोजी सकाळी ११.३० वा. " राज्यज्ञास्त्र विभागाच्या " च्या वतीने आयोजित केलेल्या "भारतीय लोकशाही समोरील आव्हाने " या विषयावर ऑनलाईल वेबिनार कार्यक्रमास उपस्थित राहून आपण संशोधक व विद्यार्थ्यांना मार्गदर्शन करावे, ही विनंती. कळावे,

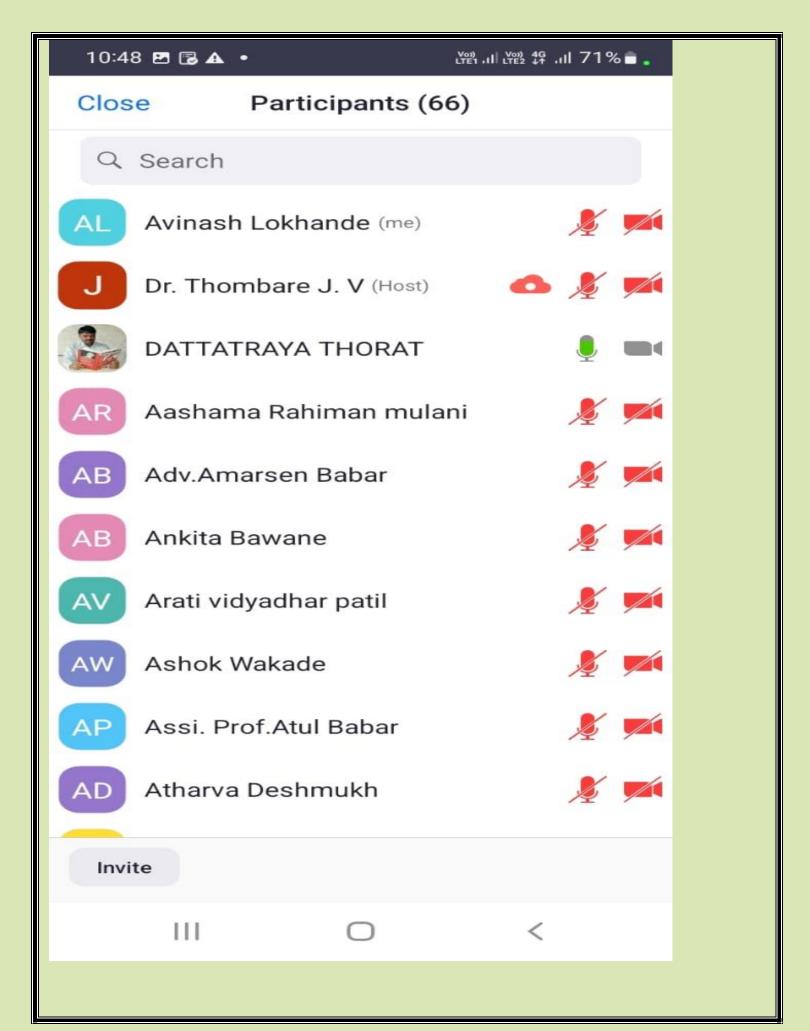
प्राचीर्य विद्यान महाविद्यालय, सांगोला ता. सांगोला जि. सोलापूर

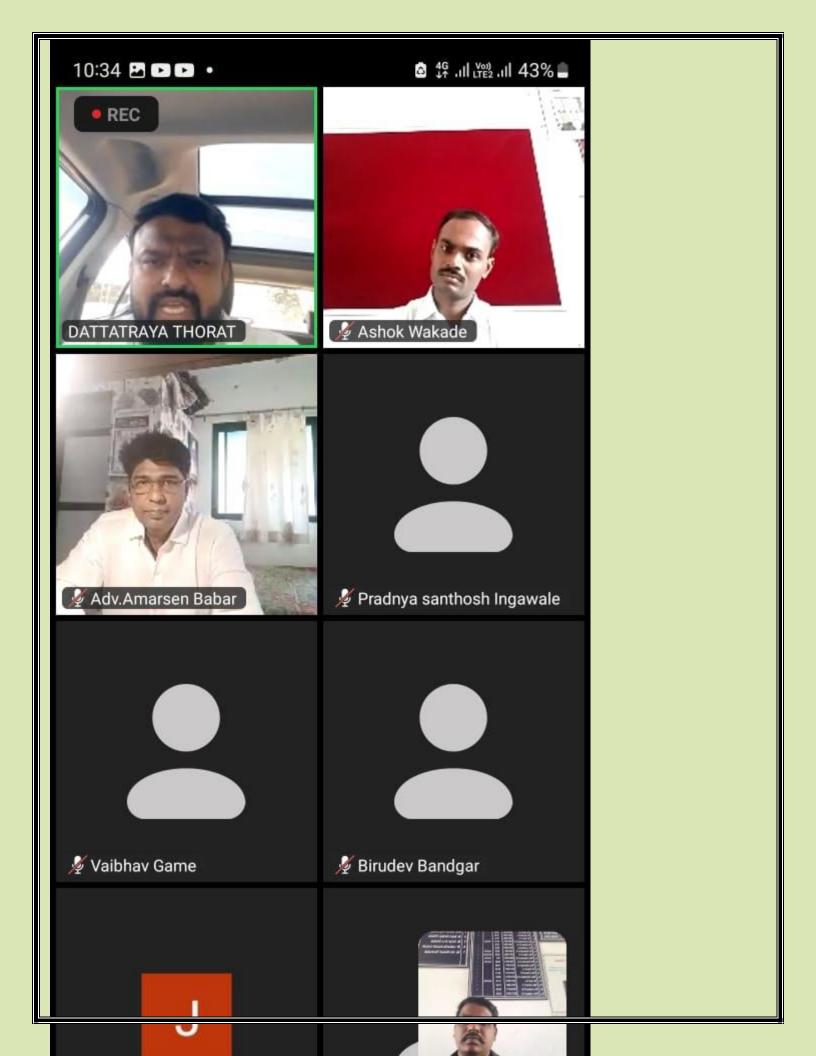
आपला विश्वास

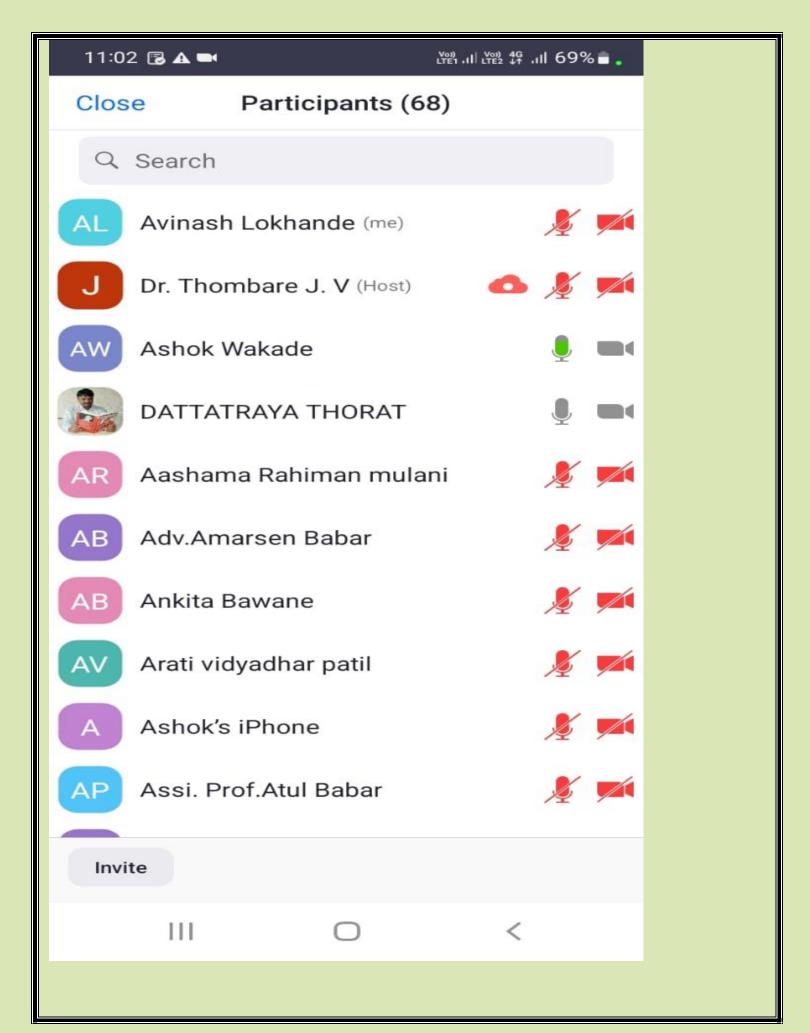


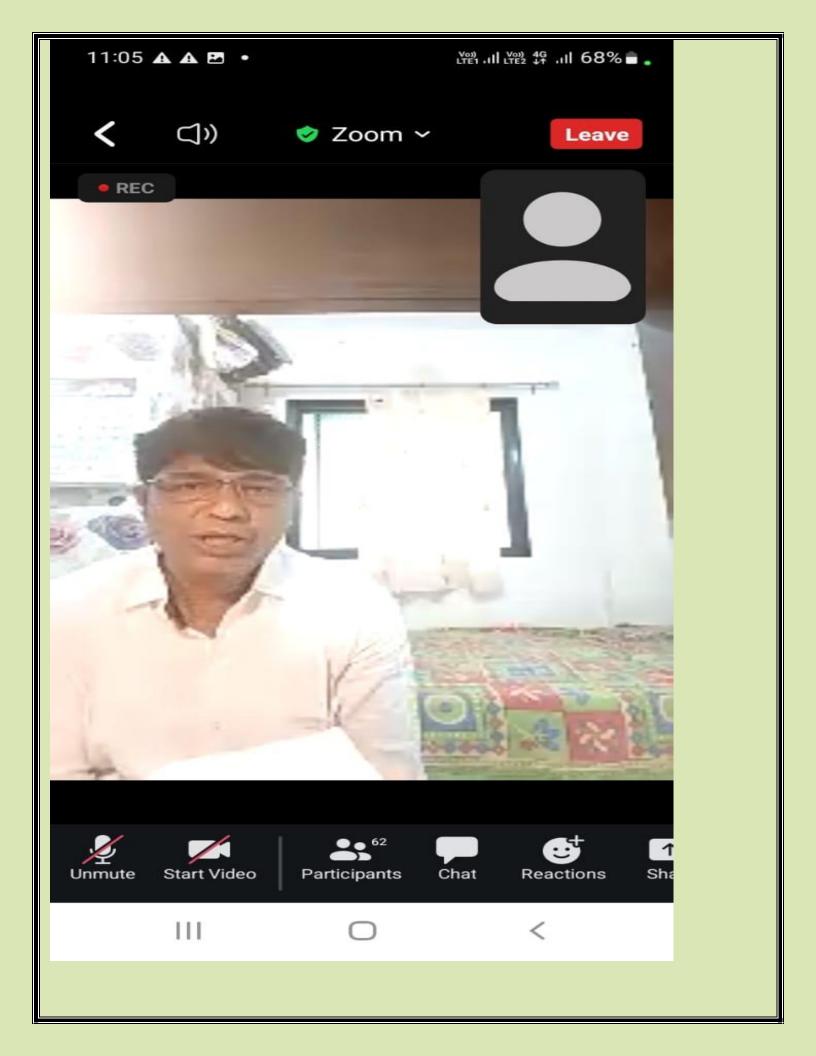


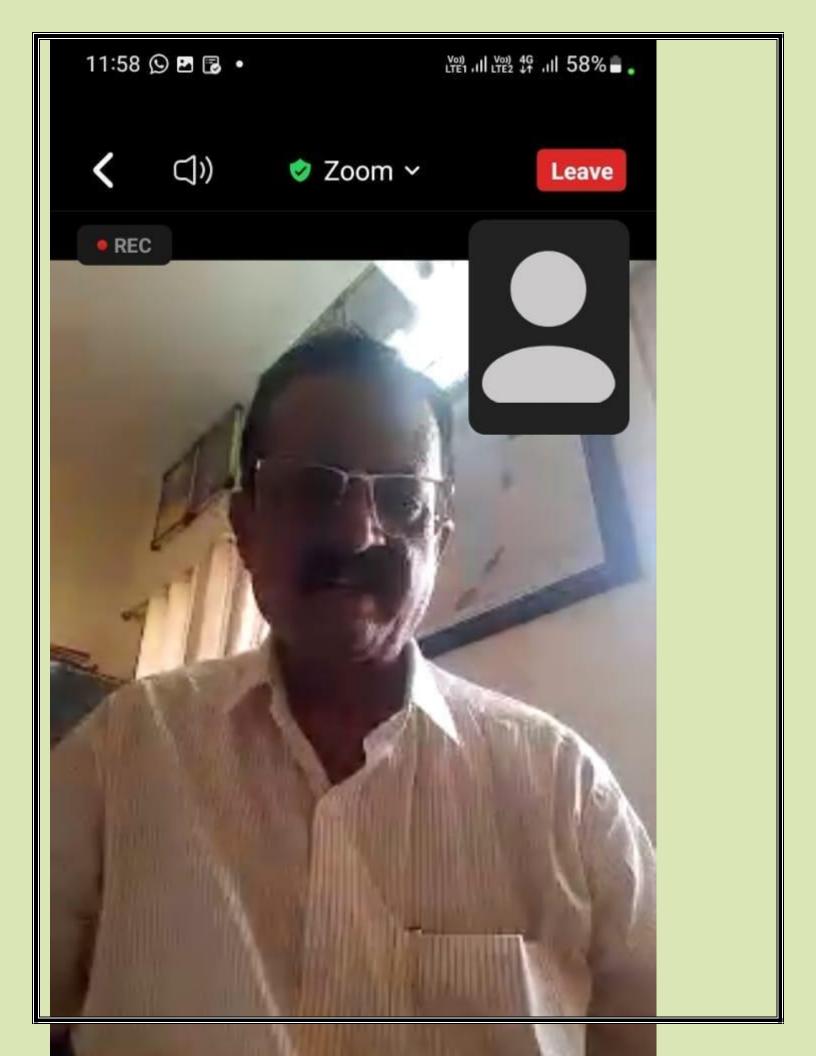


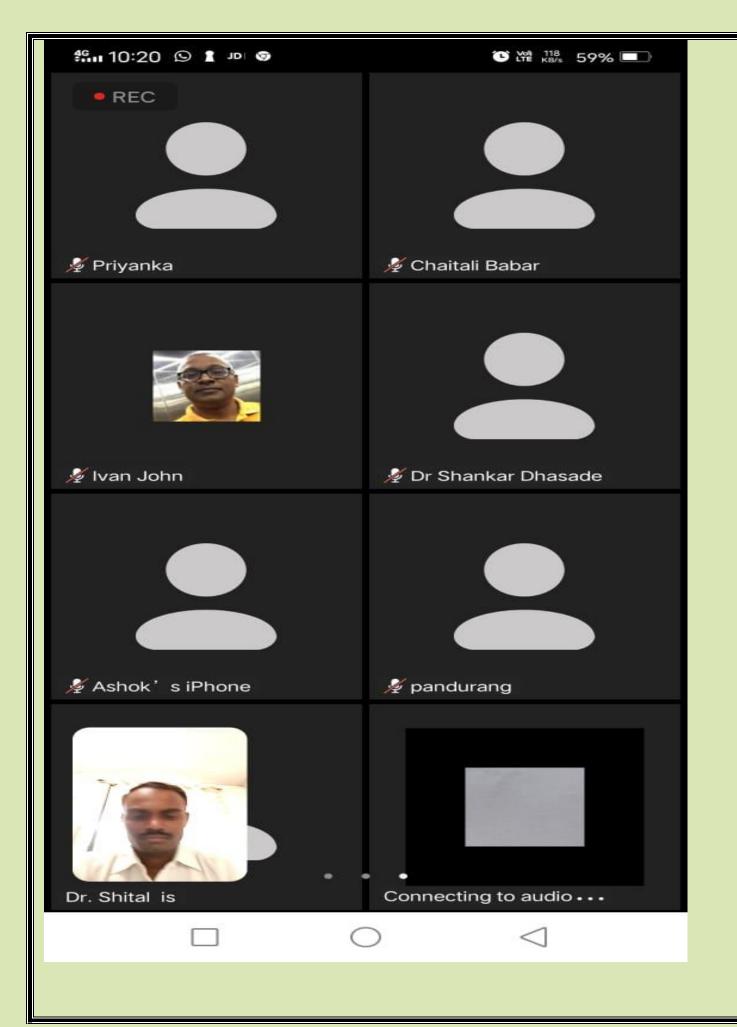


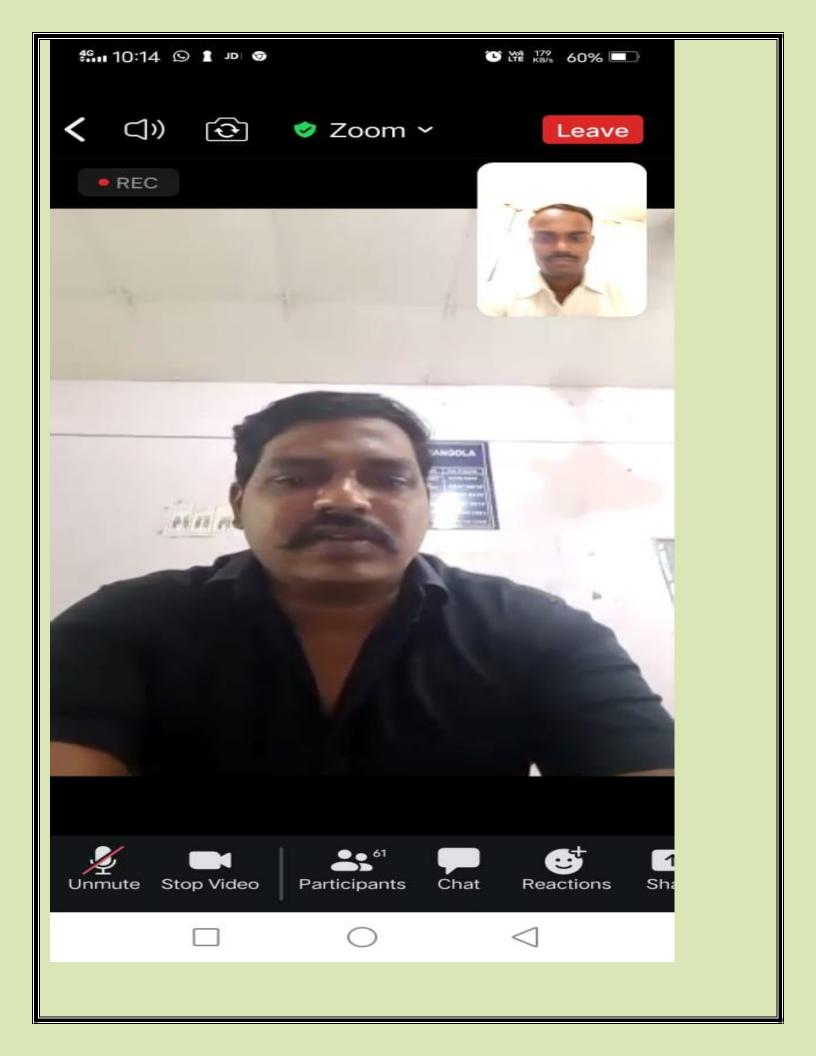


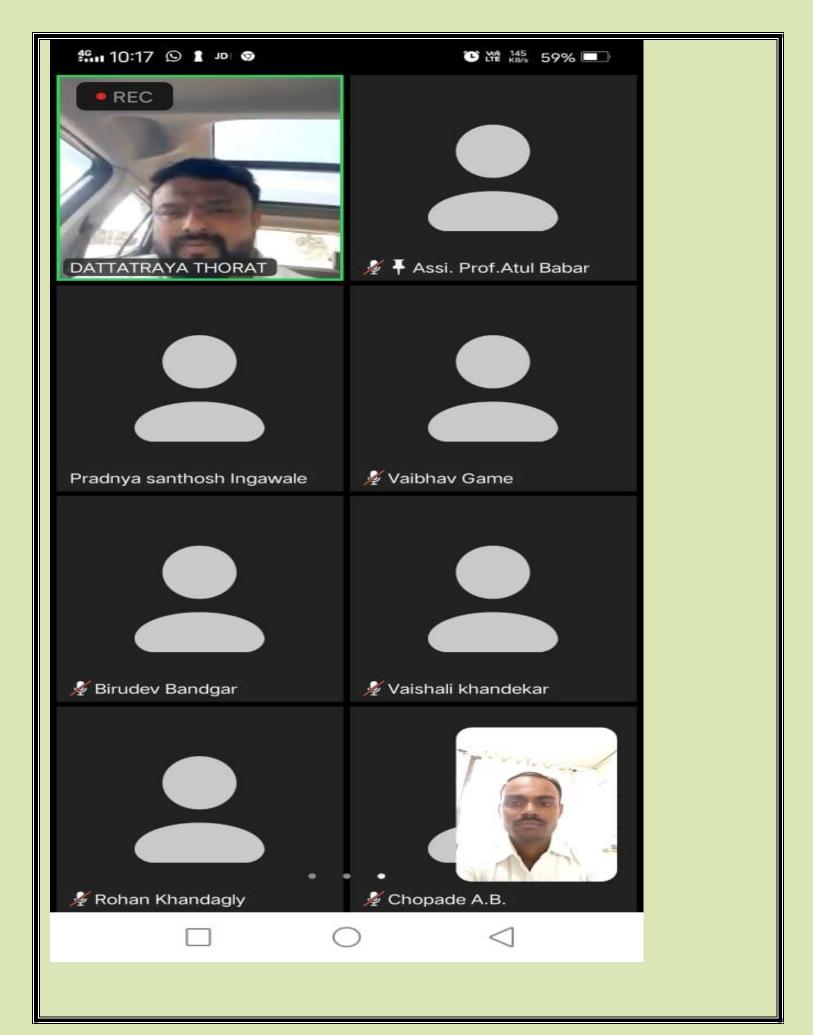














विज्ञान महाविद्यालय सांगोला

(कला, विज्ञान, इ.सी.एस. व बी.सी.ए.) ता. सांगोला, जि. सोलापूर, पिन -४१३ ३०७ (महाराष्ट्र)

क्षेत्र (०२१८७) २२०५०८ क्षेत्र (०२१८७) २२०५०८

प्राचार्य : डॉ.एस.एम.मुलाणी

E-mail vidnyarims@yatoo.co.in Website www.vmesangcia.org

एम् प् पीएच डी.(भूगोल) (पुण्यस्तोक अहिल्यादेची होळकर खोलापुर विद्यापीटक्सी संलंकित)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

जावक क. ज्यासा /2023-218

दिनांका: २५/७५ /२०२३

आभार पत्र

प्रति,

मा. ग्रा. डॉ. दत्तात्रय थोरात , राज्यशास्त्र विभागप्रमुख, सहकार महर्षी शंकरराव मोहिते पाटील महाविद्यालय, नातेपुते, ता. माळशिरस

महोदय,

विज्ञान महाविद्यालयामध्ये गुरूवार दि. २५/०५/२०२३ रोजी सकाळी १०.३० वा. राज्यज्ञास्त्र विभागाच्या " च्या वतीने आयोजित केलेल्या "भारतीय लोकशाही समोरील आव्हाने " या विषयावर ऑनलाईल वेबिनार कार्यक्रमास उपस्थित राहून आपण संशोधक व विद्यार्थ्यांना मार्गदर्शन केले त्यावहल महाविद्यालयाच्या वतीने आपले आभार!

> प्राचार्य विद्यान महाविधालय,सांगीला ता.सांगीला जि.सोलापूर



विज्ञान महाविद्यालय सांगोला

(करना, विद्याल, इ.सी.एस. व बी.सी ए.) ता. सांगोला, जि. सोलापूर, पिन -४१३ ३०७ (महाराष्ट्र)

औ. (धर्माटक) स्थानकट भीजे १८५०७११२४४

प्राचार्य : डॉ.एस.एम.मुलाणी

E-mail vidnyanma@yahoo.co.in Website www.vmssangola.org

एम् ए पीएथ श्री (पूर्णाल) (पुण्यप्रलोक अहिल्यादेवी होज्यन सोलापूर विद्यापीठाकी संलवित)
(Third Cycle Accredited by NAAC with B' Grade (CGPA of 2.24)

जावक क. इनअस /2023-2%

िस्तांक: 24 / 64 /2020

आभार पत्र

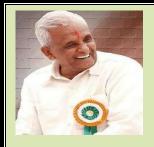
प्रति,

मा. ॲंड. अमरसेन बाबर , उच्च न्यायालय, मुंबई

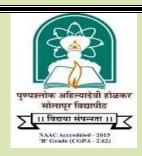
महोदय,

विज्ञान महाविद्यालयामध्ये गुरूवार दि. २५/०५/२०२३ रोजी सकाळी १०.३० वा. राज्यज्ञास्त्र विभागाच्या " च्या वतीने आयोजित केलेल्या "भारतीय लोकशाही समोरील आव्हाने " या विषयावर ऑनलाईल वेबिनार कार्यक्रमास उपस्थित राहुन आपण संशोधक व विद्यार्थ्यांना मार्गदर्शन केले त्याबद्दल महाविद्यालयाच्या वतीने आपले आभार!

विज्ञान महाविधालय, सांगोला ता.सांगोला जि.सोलापूर







Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's

Vidnyan Mahavidyalaya, Sangola

Tal-Sangola, Dist-Solapur, MH-413307, India. (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of Political Science in collaboration with Internal Quality Assurance Cell (IQAC) organized an

National Webinar on the Challenges before Indian Democracy-2023
Dated on May 25-05,2023

CERTIFICATE

Of	_
has participated	

This is to certify that

National Webinar on the Challenges before Indian Democracy-2023

Dated on May 25-05,2023

in

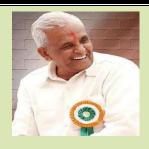








Mr.Ashok Wakade Convener Mr.Atul Babar Co-Convener Dr. S. S. Dhasade Coordinator, IQAC Dr. S. M. Mulani
Principal







Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's

Vidnyan Mahavidyalaya, Sangola

Tal-Sangola, Dist-Solapur, MH-413307, India. (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of Political Science in collaboration with Internal Quality Assurance Cell (IQAC) organized an

National Webinar on the Challenges before Indian Democracy-2023
Dated on May 25-05,2023

CERTIFICAT

This is to certify that

Mohan Khandu Shinde

Of

T.C College Baramati

has participated

in

National Webinar on the Challenges before Indian Democracy-2023

Dated on May 25-05,2023









Mr.Ashok Wakade Convener

Mr.Atul Babar
Co-Convener

Dr. S. S. Dhasade Coordinator, IQAC

Dr. S. M. Mulani Principal

मध्ये महाराष्ट्र शुश्रूषागृह नियम २०२१ प्रमाणे अंमलबजावणी वसेना उपजिल्हाप्रमुख दत्तात्रय सावंत यांच्या मागणीला यश

तसेच सुतगिरणीमधील कामगार वर्ग रच सांगोला तालुक्यातील शेतकरी वर्ग, प्रवस्ताति तालुक्याताल शतकरा वर्ग, पडपट्टी मधील कामगार वर्ग, मध्यम ि असा समुदाय शहारामध्ये आहे. ग्रामध्ये वैद्यकीय सुविधा पुरविण्यासाठी ठया प्रमाणावर खाजगी रूग्णालय तयार ले आहेत. परंतु काही रूग्णालयांचा ध्यमातून शेतकरी वर्गातील व सर्व ध्यमातून शेतकरी वर्गातील व सर्व गरीकांची दिशाभुल व आर्थिक छवणुक केली जात आहे. महाराष्ट्र भ्रषागृह (सुधारित) नियम २०२१ ची

मलबजावणी या रुग्णालयातून होताना दिसून येत नाही. ामुळे रुग्णांना व त्यांच्या नातेवाईकांना मनस्ताप सहन

महाराष्ट्र शुश्रुषागृह (सुधारित) नियम २०२१ प्रमाणे णलवाच्या दर्शनी भागात स्थानिक पर्यवेशीय ऐकायांचे आणि तकर निवारण कशाचे संपर्क क्रमांक राणे बंधनकारक आहे. रुणालयातील शरक्रिया गृह, तिदक्षता विभाग, प्रसृतिगृह यांमध्ये शासनाने विदित

केलेल्या प्रमाणकांच्या निकषांचे पालन होताना दिसत नाही. अनेक भारत हाताना दिसत नाहा. अनक रुणालयांमध्ये पार्किंगच्या अपुल्या सुविधा, अपुरा रक्तसाठा, आपत्कालीन वैद्यकीय सुविधांची कमतरता आढळून येते. तसेच त्यामध्ये काम करणारे नर्ससेस. त्यांमध्य काम करणार नससस, वॉडबॉय हे कोणतीही पदवी न घेता, कसलाही अनुभव, सटींफीकेट नसताना तेथे काम करतात व रुग्णांवर व त्यांच्या

नातेवाईकांन सोबत अराति व क्लाबर व त्याच्या नातेवाईकांन सोबत अरातीची व गलीच्छ भाषा बोलताना दिस्न येत आहे. महाराष्ट्र शुश्रुषागृह (सुधारित) नियम २०२१ मधील नियम ११ व अनुसूची जनुसार सव खाजगी रुग्गालये व नर्सिंग होम यांनी १५ सुविधांचा दर दर्शनी भागात लावणे बंधनकारक आहे. ३ अनुसार सर्व खाजगी रुग्णालये व नर्सिंग होम यांनी

भेट), सहायक वैद्यकीय शुल्क (प्रति भेट), भूल शुल्क, शस्त्रक्रिया सहाय्यक शुल्क, भूल सहाय्यक राखाक्रया सहाय्यक सुल्क, भुल सहाय्यक सुल्क, रुणालय शुल्क (प्रतीदिन), सलाईन व रक्त संक्रमण शुल्क, विशेष भेट शुल्क, मल्टिप्यारा शुल्क, पॅथॉलॉजी शुल्क, ऑक्सिजन शुल्क, रेडिओलॉजी व सोनोग्राफी शुल्क यांचा समावेश होतो. परंतु अनेक रुग्णालयामध्ये हे दरपत्रक लावलेले नाहीत तसेच अनेकवेळा रुग्ण ह द्रंपत्रक लाबलल नाहात तसच अनकवळा रूप रगाबल्यानंतर रूपालयाकाङ्क मृतदेह ताब्यात देण्यात येत नाहीत. रूपांचा परिवार दुःखात असताना त्यांचा मानसिक छळ केला जातो. अशा अनेक प्रकारे शहरातील रुणालयांकडून महाराष्ट्र गुत्रूषागृह (सुधारित) नियम २०२१ चे सर्रासपणे उङ्घेषन होत आहे. यामुळे आपणांस एक सामान्य नागरीक व शिवसेना पश्चाचा पदाधिकारी या नात्यांने आपणांस विनंती करत आहे. की, शहारातील खाजगी रूग्णालयांमध्ये महाराष्ट्र शुश्रुषागृह (सुधारित) नियम २०२१ प्रमाणे अंमलबजाणी करण्यात यावी. या कायद्याचे उठ्ठंघन करणायां रुणालयावर कड़क कायदेशीर कारवाई करणेत यावी. असे निवेदनात नमूद करण्यात

सांगोला-चिंचोली रोडच्या पश्चिम बाजुस बगीच्याला लागुन प्रवाशांसाठी बसस्टॉप उभा करावा-ॲड.दिपक मदने

सांगोला (प्रतिनिधी):-सांगोला शहराच्या हदीत महुद नाका येथुन दक्षिण उत्तर चालीत सुरू होणारा सांगोला, चिंचोली रोड असून येथून दररोज मोठ्या गावर चिंचोली, धायटी, अमाणावर विचाला, चावटा, शिरभावी, हलदहिवडी, तिसंगी या भागातील शाळकरी मुले, महिला, जेष्ठ नागरिक हे एस.टी बस,

स.जा.लिगाडे विद्यालय व भाई जगन्नाथराव लिगाडे

(ज्यु) कॉलेजच्या १००% निकालाची परंपरा कायम



खाजगी बाहणे व बहाप ने प्रवास करत असतात. या प्रवाशांना य खाजमा बाहण व बहाप न प्रवास करत असतात. या प्रवासाना व ठिकाणी बांक्यसासाठी कोणत्याही प्रकारच्या निवास रोडची सोय नाही. त्यामुळे प्रवासांचे मोठ्या प्रमाणावर हाल होत आहेत. नाइलाजाने त्यांना वाहनांची वाट बघत रस्त्यावर रखरखत्या उन्हात उभे राहाबे लागत आहे.

उभ राहाब लागत आह. बसण्यासाठी निवार शेंड नसल्यामुळे विशेषत: शाळकरी मुलांची व महिलांची तसेच वयोबुद्धांची मोठी गैरसोच होत आहे. या ठिकाणी तात्काळ निवारा शेंड (बस स्टॉप) व स्वच्छतागृहाची सोच करायी, अशी मागणी ॲंड.दिगक मदने वांनी दि.२५ मे रोजी लोकप्रतिनिधी व प्रशासनाकडे लेखी अर्जाव्दारे केली आहे

5 व उच्च माध्यमिक विद्यालयाची १२ वी ो उज्वल निकालाची परंपरा कायम















अकोला (वार्ताहर):-स.शा.लिगाडे विका जगन्नाथराव लिगाडे (ज्यु) कॉलेज (कृषी) कॉलेजचा निकाल आज जाहीर झाला असून ज्युनियर कॉलेजचा १००% निकाल लागला आहे. प्रथम क्रमांक केदार योगीता मारुती ७७% गुण मिळविले आहेत. तसेच द्वितीय क्रमांक भोसले अमृता राजेंद्र ७६.६७ % तसेच तृतीय क्रमांक स्वरांजली बापसाहेब सावंत ७६%, बाबर आकांक्षा काकासो ७६%, सावंत विश्वजीत विजय ७६% असे गुण मिळविले आहेत.

अभिनंदन रयत शिक्षण संस्थेचे जनरल बॉडी सदस्य प्रा. नानासाहेब लिगाडे, विदयालयाचे प्राचार्य बी. जे. कांबळे.

सर्व यशस्वी विदयार्थ्याचे

पर्यवेक्षक पी.व्ही. पवार, स्कुल कमिटी सदस्य प्रा. आनंदराव खटकाळे, एम.डी.शिंदे, विलास लिगाडे.सरपंच. उपसरपंच. सर्व ग्रा.पं. सदस्य, यांनी सर्व उत्तीर्ण विद्यार्थ्यांचे अभिनंदन केले व पुढील वाटचालीस शुभेच्छा दिल्या.



 उच्च माध्यमिक शालांत परीक्षा उच्च माध्यमिक शालांत परिका उच्च माध्यामक शालात पारवा जाहिर झाला असुन या परीक्षेत व्या विद्यार्थ्यांनी आपल्या उज्वल

होते त्यापैकी ५० विद्यार्थी पास . अवताडे योगीता संतोष हिने कु. जानकर रूतुजा उध्दव हिने तर कु. अवताडे स्वाती तानाजी

हिने ७०.८३ टक्के गुण मिळवून तीसरा क्रमांक मिळवला हान ७०.८३ ८क्क गुण मध्यपूर तासरा क्रमाक ामध्यका विज्ञान शाखेत पकुण १६ विद्यावी पारीकेला बसके होते ते सर्वव म्हणजे ९६ पास झाले असुन १०० टक्के निकाल लगाला. विज्ञान शाखेत कु. गढदे साक्षी बंडू हिने ७५.६७ टक्के गुण मिळवून प्रयम क्रमांक मिळवला तर कु.जानकर प्रज्ञा वामन व कु. इंगोले सुन्दी हिलीपकुमार हिने ७५.९७ टक्के गुण मिळवून व्हितीय क्रमांक मिळवला तर

इनाल कुटा (स्वानसुनार होत जर्द, २० टक्क गुन मळ्यून व्यत्ता क्रमाका मळ्याला स कृ. पवार साक्षी आणणा व शी. माने ज्ञानेत्रवर नागू यांनी ७५,०० टक्के गुण मळळ्नून तीसरा क्रमांक मिळवला आहे. विद्यार्थ्यांच्या या यशाचे संस्थेचे अध्यक्ष, उपाच्यक् प्राचार्य, सुपरवायद्वार, सर्व शिक्षक, शिक्षकेत्तर कर्मचारी व गावकन्यांनी कौतुक केले

विज्ञान महाविद्यालय सांगोला येथे नॅशनल वेबिनार संपन्न



सांगेल (प्रतिनिधी):- दि, २५ में २०२३ रोजी सव्ववर्धी १० ते दुपारी १२ यांबेळेल भारतीय लोफआर्ती समोरील आख्वाने यांविषयीचर राष्ट्रीय वेषिनार आयोजित करण्यात आले होते या राष्ट्रीय वेषिनारा डॉ.डी.एस.चीरात सर (सहकार महार्ती गंकराराय मोर्तित पाटील कांतिल, तातेपुर्तेण ३ औड.अमस्तेत बाबर (मुंबई उच्च न्यायालय) हे प्रमुख पाहुणे मृत्यून लाभले. डॉ.चीरात सरांनी आप्त्याण व्याध्याताल होतकाराहिये महत्या विशाद करून विच्या समोर असलेल्या आख्तानांचा परामर्थ घेतला. जातीयता, धर्माध्या, परंपरा, जाताव्यात, प्रारंदिशकारात होत्ये चित्रकार्शिय महत्या करांना अमेरवाराची कार्यक्षमता न पाहता तो फक आप्त्या जातीया आणि धर्माचा आहे स्थान महत्यान करण्याची पदल यावस कडाइन टीका केली व लोकशाहिमध्ये संतर्थ आस्तीत जास्त विकंडीकरण करण्यावर त्यांनी धर दिला. पुढे बोललाना त्यांनी राजकारणात्रिक लब्बिमहात आणि एक्टिकात नष्ट होत चालल्डी आहे. राजकारणात्रिके स्थानाची स्थाना वाला आणि एक्टिकात नष्ट होत चालल्डी आहे.

चारिज्यवान आणि तत्त्वतिष्ठता पाळणारे नेते खूप कमी आहेत तसेच सच्याच्या राजकारण हे स्वार्थासाठी चाललेले आहे असे त्यांनी नमूद केले. अह. अमस्तेन बाबद वांनी धर्म हे अफुची गोळी आहे क्विबहुना ती एक विषयची गोळी आहे आणि तो लोकजाहीला चलाप्रकारी पासक आहे हे सांगितले. त्यांनी घटनेच्या येग्योच्ळाच कलम संदर्भत आणि ३६८ च्या घटना हुक्ती कलमासंदर्भातील केलाबांन्द भाती केबचा संदर्भ देवन विद्यार्थनी मार्गद्रांन केले. भारतीय लोकजाही समोरील आब्हाने आणि घटनात्मक तत्तुरी

मार्गदर्शन केले. भारतीय लोकजाही समारील आखता आांच प्रदासका तरतुरी यांचा सुरेख संगम सापदता.
आपत्वा अध्यक्षीय भाषणात प्राचार्य डॉ. सिकंदर मुलाणी यांनी लोकजाहिण्या संवर्धनाची अवाबदारी समाजातील सर्व प्रदक्षांची कती आहे ते समजावृत संगितले. सदर राष्ट्रीय वेबिबता घेण्याची प्रेरणा संस्था सचिव विद्वल्याय शिर सर दिली.
प्रास्ताविक य सूत्रसंचालन प्रा.अशोक बाकडे यांनी केले, त्यांनी



आमचा पत्ता: मिरज रोड सूतगिरणी जवळ हॉटेल वरूनराज शेजारी, सांगोला.

ताचा दवारवाना

हात्मा फुले चौक, गोला जि.सोलापूर

आकाश मारुती मेटकरी

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इंद्रायणी कन्स्ट्रक्शन

- संदुर प्लॉनंग आणि उत्कृष्ट कालिटी
 द दर्जेदार १०० हुन अधिक बांधकामाचा अनुभव
 सुसन्ज अनुभवी इंजीनियरिंग आणि मॅनेजमेंट टीम
- **# आपल्या स्वप्नातील घराच्या**

बांधकामासाठी एक वेळ अवश्य संपर्क करा. रांपर्क: 9044440222/ 909656 मार्च कॉम्प्लेक्स,ज् इंग्लिट क्ल गर्कर, बालु जे Planning, 3D Design, RCC Design, terior Design, Estimating, Sanction

शनिवार दि.२७ मे २०२३



D TOURISM

कोळा विद्यामंदिरचा बारावी निकाल १०० टक्के असन यशाची परंपरा कायम ठेवली आहे.

यामध्ये शास्त्र शाखेतन प्रथम– मोरकाने साहिल जोतीराम ६०० पैकी ४८७– ८१.१७%

कॉलेज कोळाचे प्राचार्य विसाचूरे सर, पर्यवेशक मणेरी सर, शिक्षक व शिक्षकेतर कर्मचारी यांनी विद्यार्थ्यांचा व पालकांचा पुष्पहार व गुलाब पुष्प देऊन

बामध्ये शास्त्र शास्त्रदूत प्रथम- मंतकाने साहिल जोतीयम ६०० पैकी ४८०- ८१.१५% कर्मचारी चार्गी विद्याध्योचा व पालकाचा पुण्यहार व गुलाब पुण्य देकन दितीय- सारत प्रथमेश देवाणा १०० पैकी ४७५ - ७९.१५ % क्रमांक मिळविला. कला शास्त्रेत्व- प्रथम - आलदर सानिका शरद ६०० पैकी ५१९ - ८६.५०%, दितीय- आलदर सानिका शरद ६०० पैकी ५१९ - ८६.५०% सातिका सात्र सात्रकाचे अध्यक्ष प्रा. प्रयुद्ध प्रपक्ष, सचिव म. यंगारे, दितीय- आलदर अधिदा कुंडिलिक ६०० पैकी ५१९ - ८६.००%, तृतीय - सारार मिचा विष्णू ६०० पैकी ५०८ - ८४.६७ टक्के गुण मिळवून घवघचीत यश संपादन सेके प्राचा केते आहे. सर्व गुणवंत विद्याध्योचा व पालकाचा होम टू होम जाऊन कोळा विद्याधीदर न्युनिअस सर्व गुणवंत विद्याध्योचा व पालकाचा होम टू होम जाऊन कोळा विद्याधीदर न्युनिअस स्थास्त्र स्थास्त स्थास्त्र स्

SHRAVANI TRIPS WITH MAHARASHTRA DARSHAN



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Asthavinavak

Darshan 3 days



Paanch Jyotirling

Ambejogai 4 days



Dattadham Pandarnur Yatra Kholapur per person

स्वेरीचे माजी विद्यार्थी सुरज खिलारे यांचे यपीएससी मध्ये यण

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पंढरपुर- गोपाळपुर (ता.पंढरपूर) येथील श्री.विद्रल रज्यकेशन अँड रिसर्च इन्स्टिटयट एज्युकशन अड रिसच इन्स्टिट संचलित अभियांत्रिकी महाविद्यालयातील मेकॅनिकल इंजिनिअरिंग या विभागातून उत्तीर्ण झालेले माजी विद्यार्थी सुरज संभाजी खिलारे यांनी सुर्ज समाजा खिलार याना केंद्रीय लोकसेवा आयोग अर्थात यु.पी.एस.सी. मार्फत घेण्यात आलेल्या स्पर्धा परीक्षेत उञ्चल यश संपादन केले.

वश संपादन कल. यूपीएससी परीक्षेची निवड यादी नुकतीच जाहीर झाली असून ट्रेनिंग नंतर सूरज हे

National Webinar Report

Sangola Organized "National Webinar on Python for Digital Image Processing" on 30th May 2023 at 10am.by online Zoom Meeting. The Resources Persons were Dr.Parshuram Mahadev Kambale, an assistant professor, department of computer Science Central University of Karnataka, Kalburagi and Mr.Prajoyt Patil, Founder and CEO of AIS Solution Pvt.Ltd, Pune. There are 72 participants who have attended the webinar across Maharashtra and India. The webinar was successfully carried by Mr.Shaikh N.S Co-Convener, Mr.Rasal N.S Co-Convener and Mr.Shinde D.R and All Faculties of Department of Computer Science.

Prof. Kolawal H.D.

Principal
Vidnyan Mahavidyalaya, Sangola
Tal. Sangola Dist. Solapur

Date: 29/05/2023

Notice

All the M.Sc.-I & II Year students are informed that we Department of computer Science Vidnyan Mahavidyalaya Sangola organized a "National Webinar on Python For Digital Image Processing" On 30th May 2023.All Students do your registration today it is compulsory to all students, those who are not going to register for webinar will not be allowed for internal and Practical Examination.

HOD

Mr.Kolawale H.D

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प्राचीय विज्ञान महाविद्यालय, सांगीला ता.सांगीला जि.सोलपूर



Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's

Vidnyan Mahavidyalaya, Sangola.

Tal-Sangola, Dist-Solapur, MH-413307, India.

Affiliated to Punyashlok Ahilyadevi Holkar Solapur



University, Solapur.

Department Of Computer Science in Collaboration with Internal Quality Assurance
Cell(IQAC)

Organizes

National Webinar on "Python for Digital Image Processing"
(Dated 30th May, 2023)
Resource Persons



Dr. Parshuram M. Kamble
Assistant Professor and LMS Coordinator,
IQAC and ABC coordinator,
Department of Computer Science
Central University
of Kamataka,
Kalaburagi



Mr.Prajyot S.Patil
Founder and CEO,
AIS Solution Pvt.Ltd,
Python ,Data Scientist, Machine
Learning,,
Statistics Expert.

- LINK FOR REGISTRATION
 https://docs.google.com/forms/d/e/1FAIpQLSdG1sacRScjLlV8LjP6tVVPjZTIuMydoJZrdcJvOoLgWWV1Xw/viewform?usp=sf link
- FREE REGISTRATION After successful registration please join WhatsApp group by clicking on https://chat.whatsapp.com/BtfDSYw52g02YRmSTYouo5
- CERTIFICATE ON PARTICIPATION Certificate to be provided after completing the webinar.
- Zoom link for Joining:

https://us06web.zoom.us/j/4125218074?pwd=rzdEoyvyPGihaOfd8EOGFvXbFPDebp.1

Meeting ID: 412 521 8074

Passcode: xQr3Y1

Organizing Committee

Dr. S. M. Mulani Principal Vidnyan Mahavidyalaya, Sangola

> Mr.Shaikh N.S. Co-Convener & TPO Department of Comp.Sci.

Mr.Kolawale H.D.

Convener,

Head

Department of Computer Science

Mr.Rasal N.S.
Co-Convener,
Assistant Professor
Department of Comp.Sci.

Dr. S. S. Dhasade IQAC Coordinator

Sangola Taluka Shetkari Shikshan Prasark Mandal

Vidnyan Mahavidyalaya Sangola

Department of computer science in collaboration with Internal Quality Assurance Cell (IQAC)

Organizes

National Webinar on "Python for Digital Image Processing"

Dated 30th May 2023 Program Schedule

Teacher Name	Program Schedule	1000 1000 1000 1000 1000 1000 1000 100
Mr.Kolawale H.D Head of Dept.Comp.Sci.	Event Welcome & Guest Introduction	Time 10 am to10.20
Dr.Parshuram Kambale Assistant Professor and LMS Coordinator, IQAC and ABC coordinator.	Session-I	10.20 to 11:10am
Mr.Prajoyt Patil. Founder and CEO, AIS Solution Pvt.Ltd,	Session-II	11:10am to 12am
Dr.Shikandar Mulani Principal	Presidential Speech	12 to12:10pm
Mr.Shaikh N.S	Vote of Thanks	12:10pm to 12.20pm

Organizing Committee

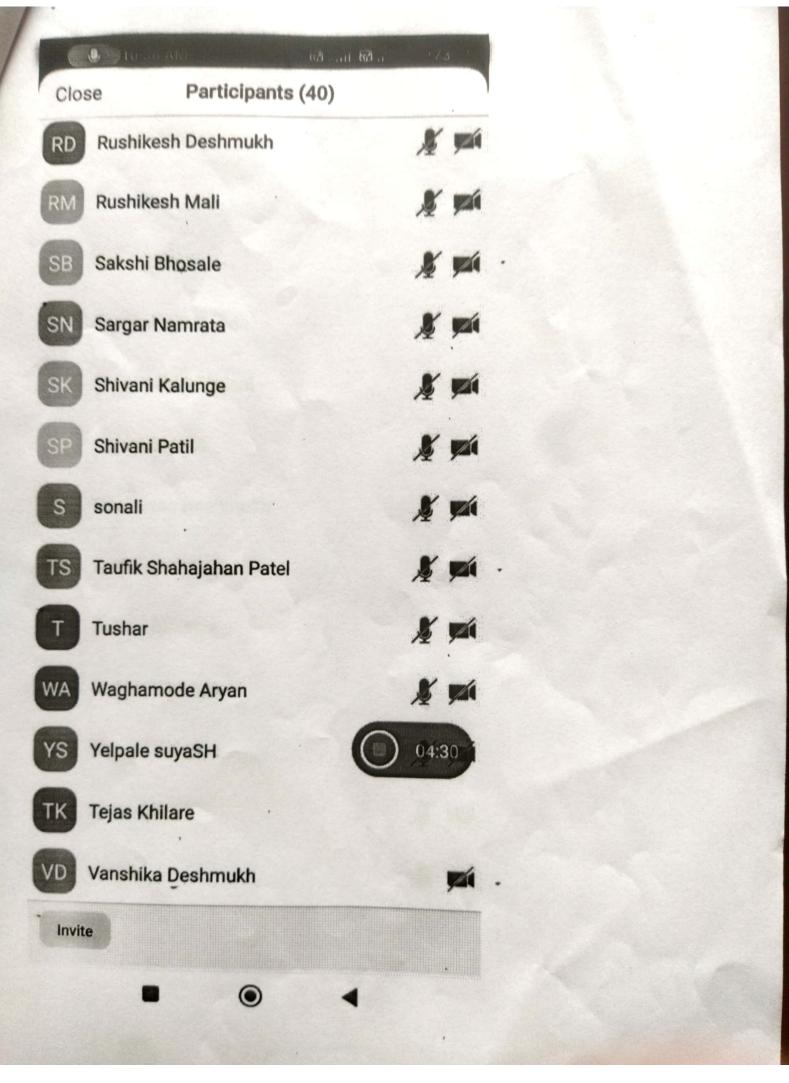
Dr. S. M. Mulani Principal Vidnyan Mahavidyalaya, Sangola

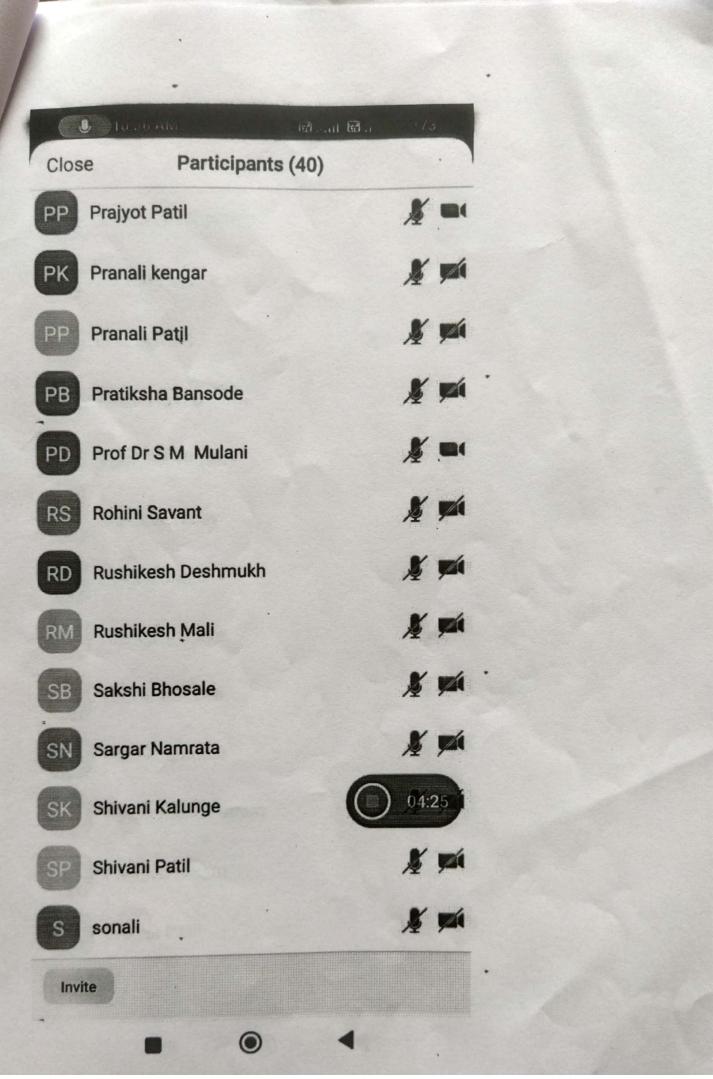
Mr.Kolawale H.D. Convener, Head Department of Computer Science

Dr. S. S. Dhasade **IQAC** Coordinator

Mr.Shaikh N.S. Co-Convener & TPO Department of Comp.Sci

Mr.Rasal N.S. Co-Convener, Dept of Comp.Sci.





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विज्ञान महाविद्यालय सांगोला

(कला, विज्ञान, इ.सी.एस. व बी.सी.ए.) ता. सांगोला, जि. सोलापूर, पिन -४१३ ३०७ (महाराष्ट्र)

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E-mail: vidnyanms@yahoo.co.in Website: www.vmssangola.org

ाचार्य : डॉ.एस.एम.मुलाणी

एम्.ए.पीएच.डी.(भूगोल) (पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठाशी संलग्नित)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

जावक क्र. By Hand 2023

दिनांक: 22/05/2028

To, Mr.Prajyot S.Patil AIS Solution Pvt. Ltd, Pune.

Subject: An Invitation as a resource person for National Webinar on "Python for Digital Image Processing".

Respected Sir,

We are happy to invite as a resource person on "Python for Digital Image Processing" on Tuesday 30th May 2023 at 11am through online Zoom Platform. Please convey your acceptance before 22nd May 2023.

Thanking you,

Your Flat Mully. विज्ञान महाविद्यालय, सांगीला ता. सांगोला जि. सोलापूर

विज्ञान महाविद्यालय सांगोला

(कला, विज्ञान, इ.सी.एस. व बी.सी.ए.) ता. सांगोला, जि. सोलापूर, पिन -४१३ ३०७ (महाराष्ट्र)

ऑ. : (०२१८७) २२०५०८ मो.नं. ९८५०७९२२४४

E-mail: vidnyanms@yahoo.co.in Website: www.vmssangola.org

्राचार्य : डॉ.एस.एम.मुलाणी एम.ए.पीएच.डी.(भूगोल)

(पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठाशी संलग्नित)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

जावक क. By Hand 2023

दिनांक: 30/05 /2023

To, Mr.Prajyot S.Patil AIS Solution Pvt. Ltd , Pune.

Subject: Thanking Letter for delivering a resource speech at National Webinar on "Python for Digital Image".

Respected Sir,

We are Very much thankful to you as a resource person on "Python for Digital Image Processing" on Tuesday 30th May 2023 at 11am through online Zoom Platform.

Thanking you,

Yours Faithfully. विद्याल महाविधालय, सांगीला ता. सांगीला जि.सोलापुर



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जावक क्र. By Hand/2023

दिनांक: 22/05/२०23

To,
Dr. Parshuram Mahadeo Kamble
Assistant Professor,
Central University of Karnataka,
Kalburgi.

Subject: An Invitation as a resource person for National Webinar on "Python for Digital Image Processing".

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विज्ञान महाविद्यालय सांगोला

(कला, विज्ञान, इ.सी.एस. व बी.सी.ए.) ता. सांगोला, जि. सोलापूर, पिन -४१३ ३०७ (महाराष्ट्र)

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E-mail: vidnyanms@yahoo.co.in Website: www.vmssangola.org

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दिनांक: 30/05 /२०23

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Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's

Dr.Ganpatrao Deshmukh Mahvidyalaya, Sangola.

Tal-Sangola, Dist-Solapur, MH-413307, India. (Old Name -Vidnyan Mahavidyalaya, Sangola.)



Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur.

Department of Economics in Collaboration with Internal Quality Assurance Cell (IQAC)

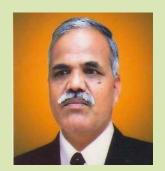
Organizing

National Webinar on "Water Management in Drought Prone Area" (On Dated 27th June, 2023 and Time 10:00 am to 12:30 pm)

Resource Persons



Former Principal S.B.Chimmad Belagavi Karnataka.



Former Principal Dr.A.G.Pujari Former President Arthshashtra prishad.

President



Principal Dr. S.M.Mulani Dr.Ganpatrao Deshmukh Maha.Sangola

- LINK FOR REGISTRATION https://forms.gle/NCUwaB7VQo5Uwytr8
- **FREE REGISTRATION** There is no registration fee. After successful registration join, WhatsApp group by clicking on https://chat.whatsapp.com/BEy4D8EJMlWKIy1aTNCBOT
- **CERTIFICATE OF PARTICIPATION** A certificate will be awarded upon completion of the webinar only after submission of feedback form.

Organizing Committee

Dr. S. M. Mulani Principal, Dr.Ganpatrao Deshmukh Maha.Sangola. Mr.S.B. Shinde
Convener,
Department of Economics
Dr.G.D.Maha.Sangola .

Dr. S.S. Dhasade IQAC Dr.G.D.Maha.Sangola

Mr.S.M. Bhosale Co-ordinator Dear All registered participants...

Greetings from Dr. Ganpatrao Deshmukh Mahvidyalaya, Sangola.!!

I may please to inform you that Department of Economics in Collaboration with Internal Quality Assurance Cell (IQAC), Dr.Ganpatrao Deshmukh Mahvidyalaya, Sangola has organized

"Water Management in Drought Prone Area" on dated On Dated 27th June, 2023 and Time 10:00 am to 12.30 pm

Herewith I am sending the details of the a Webinar link ,Webinar brochure, schedule and Google meeting link for joining etc. Have a nice day...

Thanking you!!

Enclosures:

- LINK FOR REGISTRATION https://forms.gle/NCUwaB7VQo5Uwytr8
- **FREE REGISTRATION** There is no registration fee. After successful registration WhatsApp group by clicking on https://chat.whatsapp.com/BEy4D8EJMIWKIy1aTNCBOT
- **CERTIFICATE OF PARTICIPATION** A certificate will be awarded upon completion of the webinar only after submission of feedback form.

Yours , Mr.S.B. Shinde Convener 9423334498, 9356708924 Mr. S.M. Bhosale Co-Convener 9975925507 अंगिला तालुका शेतकरी । शिस्ता प्रसारक मंद्रकाने अंग गंवापतराव देशमुस महाविद्यालम् सांद्रीला । जिल्हा-सोलापुर मेंघी शंक्येने अध्यप्त, मा. रामगंद्र खटकाले, संस्थेने सानम स्मानित्य मा. विद्वल्याव क्षिदेसर महाविद्याल्याने प्राप्तार्थ, ग्रॅं. सिनंदर मुलाकी व कौतानि गुणवाला अधिकक्षाने क्षेत्रां महाविद्याल्याने प्राप्तार्थ, ग्रॅं. सिनंदर मुलाकी व मार्गदिक्ताच्याकी मंगळवार दिनांक २५.०६ . २०२२ रोजी अर्थशास्त्र — विभाग व अतार्थन गुणवाला क्ष्मी कर्य वया (I. Q.A.C) यांग्यासंमुक्ता विद्यमाने व दुष्काळी मागातील जल्डावरथापन या विध्यावर एक-दिन्नीय राष्ट्रीय देवीलार सैंपन्न साला.

या एक दिन्हीय राष्ट्रीय क्ली वेबीनारसाही फार्ग्दर्शन करणासाही रिमोर्स पर्सन म्हणून कर्नाटक राज्यानील वेबनावी नेपित मा मानी प्राणार्थ अप्रोणिल तज्ञ न्हीं एसं. बी. म्यिम्मडसाहेब फाणी ब्लोगोला में मानी प्राणार्थ आते मानी एसं. बी. म्यिम्मडसाहेब फाणी ब्लोगोला में क्लाविरमाल्याने मा. प्राजा प्राणार्थ ने अप्रति ज्ञा औं. आप्यासाहेब प्रजारीको अपास्थित होने. या वरील दोन्हाही साधन नपल्लीने विनार एकण्यासाही — देशभरात्रीले निविध महानिरमाल्याने सन्मानमील प्राणार्थ प्राणार्थ मा. प्रभारी — प्राणार्थ अथियास्त्र विकारमानिल निविध निद्यापितातील भनेष निम्मणां प्रमुख प्राष्ट्यापक सहसीनी प्राणापक सहसीनी प्राणां प्रमुख प्राष्ट्रपापक सहसीनी प्राणां सहसीनी महाविक्राल प्राणां के विकारी राजकीय विचारवेग निविध शाखेनील । महाविक्राल प्राणीनील विद्यारीन निरमार्थीनी मोठ्या प्रमाणावर सह्यांगी आहे होने. या स्विन राजनी निरमारीला अबिशास्त्र विकार प्रमाणावर सह्यांगी आहे होने. या स्विन राजनीन केले.

अर्व उपार्श्य तांच्या स्मागनांनत अर्थितारम निकारामे प्रमुख -पा संमानीयाव शिरे यांनी प्रारताविका महते "दुक्काकी भागानीका मल्ट्यस्थापं हो विषय - किन्छलामागित काराम सर्वांना सांभीतका. स्तींगुन अभागरालीके पुरवीक्रीक पाळाली उपाल्क्यता कारि त्यांचा विश्वेतीय क्या केला पारिमेपा विषयी शविक्तर माहिता देखाला प्रमान केला. पृथ्वीचा सुमारे 70% भाग पाजाने व्यापलेला आहें आहे 30% भाग प्रभीने आपलेला आहे. प्रश्वीकरील सुमारे 97 % पाठी सारह आहे. जे पिष्पा-अभीनीने नाही. 2% पाठी वापिजा स्मान आहे. क्षांति कवळ 1% पाठी पिष्पानेण बीग्न नाही. 2% पाठी वापिजा स्मान आहे. क्षांति कवळ 1% पाठी पिष्पानेण क्षारे व शेमीशाही भीग्न आहे.

हरितानी की निजय साम प्राप्त कार्य कार्य कार्य कार्य के की की कार्य मान प्राप्त कार्य के की की कार्य प्राप्त कार्य क

माशीरिक काही दशकान भारतात पाप्पाले प्रमान ककी आहे.

स्वार्णणोलर काळात (स्कारे क्र ते ६० वर्षामध्ये) सुमारे 4०% हुन अधिक पाजी संपत्ने काहे किंवा कारी साले काहे गर दुमरीको मात्र लिक्सेक्ला सातलाने वाहत काहे. देशाकील जास्तीन जासा लेक-स्टिला ही भुशक्तिकित पाजावर कारतेनुन काहे. भुशक्तिकील पाजावी-पातळी प्रतिकवित सुमारे एकेक पुराने कारी होन काहे परिजामी सुमाने १ 15 कोश हुन अधिक लेक भिष्ण पाणी संकहात्ना तो व हेन काहेत.

अभी नी भयुन (अलाभी तुन) अनत पाण्यामा उपसा केला-आत असल्मामुके देशा मिला सुमारे 6000 5723 पेका ८३९ वर्लक अकि स्नीन (पाणी संकराअस्ते) आले आहेत. आमाभिकाला हेशांमध्ये १५ लाखायुन कि स्विक्त लोकस्वरूपा असलाना 40 मेप र शहरांभध्ये सरास्त्र एक गामापमा जामा नेटल पाणी पुरवदा केला जात नाही.

भूमारे 25 लगरवाहुम कम्पिक बोक्सरनेल्डम् अस्म वे सम्भाव पाणामा (मामीकीनीक) उपरा विश्वित्र भारणासु हे होत आहे. "राष्ट्रीत्र मालविसानर्शस्त्री भूगा" अभ्यासानुसाव शामा आरतात दरमावशी अव एकि मामानी भाराही आहे. मी पुरील भूभी का विश्व में 125 ने 150 विश्व होत्र मा वे वे प्राप्त के विश्व के माम के मा

लामुळे देशामील लोकोने स्मान्नांतराने प्रमान चतुपबाहेल. आशानेली स्मान वाहणम्या त्मिक्सेव्लोन्मा दवावामुळे पाणासाहा माराभान्या होपीले रिवाप पाणाजाही जागानिक मुद्दे होळाळी स्विमान्या। नाफारता भेजार नाहा.

जालमीकर - पार्डी समस्यावर आंगरराष्ट्रीय श्वावर जर्मा शेनआहेर रोज आहेर के के का कि आहेर महास्थाने 22 जिसेवर 1992 महर्ग स्ट एक हरान करून प्रतिक्रवार्धि 22 मार्जिला "विश्व नाल दिवस" म्हणून सालश करामामा निर्वित्र शेताला. मा हरावानुसार आहरामण्डे प्रतिक्रवार्धि 22 मार्जिला निर्वेश शेताला. मा हरावानुसार आहरामण्डे प्रतिक्रवार्धि 22 मार्जिला निर्वेश स्वाम्य सामरा केला मार्जि. तसेप जिस्केर 2023 महर्ग 'संगुक्तवार्ध्व महास्थाने" असे गाहिर देले के ने की शर्म 2005 में 2015 पर्णिण दिशाक मार्जिश मार्जिली जीवनामार्डी आवहार विवय मार्जिश आहरामणा सामना करामणा अमार्गि प्रतिक्र प्रतिक्र स्वामणा अमार्गि प्रतिक्र प्रतिक्र सामार्थि प्रतिक्र प्रतिक्र सामार्थिय स्वामणा सामार्थिय प्रतिक्र सामार्थिय स्वामणा समार्थिय समार्थिय समार्थिय स्वामणा समार्थिय स्वामणा समार्थिय समार

२००५ मह्ने ड जुनमह्ने (विश्वपम्मिवरण दिवसी) पाणी

भागित्र भागित सेमुक्त नाद्ध सेमामको नानि आहि। कि - द्रिमानमा व्यादान सुमि २ अरवहुन अभिक लोक पाणाशिनाय गडिया अहि। लाविवने महासकी कोणा अन्तान नामेश पाला निप्ति निता कावल महनान श्लोकन होने की पिलाकाही, साफरानिह आही, नं जेवला कादी पालाच्या कमताने मुठे रहा हो कि अरव पेमाही अचिक लोकों जीवन जाने महिकल द्वाले अही.

२००५ मस्ते जरा कावरवा असेलात कानने । जिल कि नी
अम अमार कारोल भावर सर्वानी मिन करेंग पालाले । जिलो का भोजा
कावरवा करेंगे कावर मावर सर्वानी काहे. एकावात्रक मगान कार्त हेमामस्वे श लोकाव्या
सातालों वादन काहे तर दुसमा वानुका पानराले प्रभाप घटन मानु लागाने
पानी सम्भा कामिका गेंभीर दुप धारण करीन काहे. पाणी हे मिन कारे
परेतु दिश्मीन दिवस माल समस्ता अमायह हम धारण कर, ल्कामील का हेप्रश्वीवरील अमालक्य पालाकी माना - पुराला कारे

भागशामहत्ते - 97.25%, वर्षा - 2.05%, अमाह तथा भौभागाह - 0.68%, तकात - 0.01% वर्षांभहते - 0.0001% वर्षांभहते - 0.0001% में मंत्रेख - 0.00004%, अहम - 0.00386% असे असंस्थाने कामलाने कामलाने कामलाने कामलाने कामलाने कामलाने कामलाने कामित्रे के

अगामील सर्वाद्यक व्लोकसंख्या असलेला देश आता भीत वसून अपाहा आरत देश आहे. मा वर्षाच्या सुक्रमा मिलाम आवित महां की भारत हा स्मीत जास्त लोकसंख्या असलेला देश अभेला असा आवित ततिला होता परेतु आता मुलाके लोकसंख्या असलेला देश अभेला असा आवित्वारी गुरुगर भाला पुहरा मिणाली आहे. लोकसंख्या पांच्युलेशन पिउच्या गांच्या आवित्वारी गुरुगर भाला पुहरा मिणाली आहे. आरागत चीलपेका सुमारे 25 लाखा हुन आश्रिक ल्याउसंख्या आहे. आता आपत्या देशाली लापाउक्या 140 कोरियमा पुढे मेली आहे.

> किया है 2023 हा श्र किलियन लाइक्स, इमामिति पासिविलियेतः द केस प्रांत्र राइट्स अंड भाइस' मा शिमकियालि ने प्रसिद्ध केल कारे. मात नमुद्द केल्पाप्रमाणे भारताली लोकसंख्या आता । 428 · 6 दशाब्ध आहे. मर चीनकी लोकसंख्या । 425 म दशाब्ध कारे महण्योग दोव्ही देशामा लोकख्ये महले 2.9 दशाब्ध इनका फरक आहे. (आरन । 428,627,663)

पाष्णामे व्यवस्थापन करही कामिनाय शतने आहे कारी

मिलतज्ञ मा. डॉ. मार्ने प्रसिंद शण। भांच्यामते देशातीक नाकुने साहे धंपाले कर तिया भागि माणुसारी मरेल गर्मातील नाकुने साहे घ्रणाने नद्यां पी हिली— अहित तथ माणुसारी मरेल गर्मातील भागि। गदी मेली तय माणुसारी मरेल ज्वारी मरेली तथ गद्या मेल्लामुं निर्मा मूल होड़ शक्तातात. हो क्या दीन- मीर्न प्रशिकामहत्ती देशाताल भागि महाराद्या नीता भागि निक्या तिल्हणाताल प्रमुक्त प्रमुक्त निर्मा भागि स्वारम् अल्लाक भागि नामुक सालि आहे तय काही नदमा कल्यावस्थे असुन कहारीहा मोना भागि होतु शक्ता भागि भागिता भागित नामुक सालि आहे तथा भागित नामुक्त स्वारम्य अस्ति कहारीहा मोना भागित होतु शक्ता भागिता भागिता नामुक्त स्वारम्य अस्ति काही नदमा भागिता भागिता नामुक्त स्वारम्य अस्ति काही नदमा भागिता भागिता नामुक्त स्वारम्य अस्ति काही नदीन हम्प काहलासारये आहे भ

भावरंग आपल्या देशान / भाजपान जालमंकट किती-भयावर आहे भागा प्राचिता भेने म्हणुण संस्थेचे सार्येच मा. विद्वाराव शिद्मार आहि मा. प्रामार्च ही. आप्याका हेब पुगारी भोक्या मार्जिदशीना व्याकी अवित्रास्त्य विभागान्या नरीने साद्धीय वेनीनारसादी "Water Management in -Doowyld Poone Area" है। विषय शिरिनेन केटनाचे स्नाजिनके

Doought Prome Area" 31 Patry Motion Benny Hilling या निस्त्र प्रस्तावनेनेन महाविद्यालपानी में भेनरित -गुजवान हमी कथाने की-भारडीनेटर पा.उँ. शंकर धसाह (पितिक्स निम्ना) योंना वरीत केन्सि साधन क्यकांचा परिचय करना दिला. (यानेनर पारिते राम्न अकारी मा एस् की निमाउ भांकी "Water management in Drought prome pred" आ खानिषमावर न मार्गदर्शन करीत असामान। अंपूर्ण निक्रवामधीले विकासील भागि भविकासील देशामील पा मध्ये पालाले व्यवस्थापन करी केले जाने है लाला देशांकील अनेक उदाहरन देनु सम्मान्न सोजितले. पानी है जीन्न क्रमुन लापी उपाठक्यना पासुक दुवलाळी भागामील जागने लगामा काटकसरीने नापर करने कालाची गर्म असुन हामा वापराविवची अविष्यान भारून कार्ये जागून असने भहत्वाचे असुन शासन आनि जनने भोकि मिन विचार करावा अन्यमा अविद्यान पाजादाही जनामस्ते सुर्थ सुरा होन्द्रिक म्हणून आतापासुन्त कर्वां की दुवलाकी भागानीक पामामी उपासका मनियाराम केंद्रका शेती, शेतिवराल कामारीन अलीगरीत अंक करनाना पाला अपनल-टाखलामा हुम्सन सम्मा शहलाचे आवाहन मेले. कारण जालसंकटामा -समस्यान्या विविध कार्की असून लामग्रह - नगदि कोकी, लाहनेकारिकाक्ति करता, जाहना पामामा। अपलप्प, स्रीतक्रीती, राजकीम क्रांख्यरभक्तीचा अभाव, आउंभी अधारीद होगारी कालाल, वाहने जालपुर्सण, जागाजीक नापमानानील होजारी नाढ, इ. कारणामुढे जालसेकट अभावह हुए अमह धारण कह शकते म्हुश्र आयण सर्वी की मिछ्न जल्डमवस्थापनाकडे व्या हिने पाहिने, समाजामहरे-जावुक लाम्यान म लाउनेकी जामीव- जागूनी करने गरमेनो असमारे स्तीरीति लानंतर दुसरे यात्रम ज्यान ज्यानि राहुन मार्गलिन -

करनाना आ प्राम्मि हो, आप्यादानि पुरामी भीनी आमरणा के प्राप्ति हों। आमिता कि आमिता कि आमिता के आमिता क

गर्येन संपूर्व अवन देशामध्ये पालामा दुष्यात नसून नहीं रहनी-मली आदि शांन्यानील नाहि जिल्लामहो दुल्लाटी भाग आद्युन मेत असून दुष्काक हा भागवाजीक्षेत्र नायून तो भामकि। जिस्त अभावाले प्राणपादन केले. पुरकाकि शानिक लामांकी पालामे त्रीक्य कावस्थापक करना पकांचा कहाने मिक्किक्ट्रिक पालामा काटकसरीने न भारतेनुकार वापन कर्क्य शेनी करावी करना आविकार पाकारी समस्या आपकीन तीन ननेल आहि लामुळे लामा सेनी, उद्मोग्यरे इ. नव विपरीन परिमाम होतुरा देशाला अमीलवस्येटमा निकासन अनेय अडमरे निर्माण होने सामान म्हण्डा आगा सर्वानीन नेकीन साममध्ये वाळमुक्र पारपाले जीमा. उभवरमापन मरपे कार्मन गरनेने कसून ला दूरीने शंतीय प्राच्यापयु श्रीमकरी, ज्यावराम्पिक इं.की प्रावे अका अधिक साम्मादेउन पाणि केक्ट राटकार्यायाही विवाद हिंचन तुमार प्राक्तिला श्रीतीन्थ्ये नापरकरा का पाणी अर्रीन कार्ति वन-व्यवस्थापन मोक्साम समन्त्र भाषाना अनामाना कानियंनीत शोषवामुखे भारतानील जावसंकर नंत्रीर बनाने आहे मार्क लामाहि विचार कावा आक्रक्नोतांनी स्वारक्ता कहन देशामीक अष्टिनी, गामव नदमा ३ स्नारक करने कावस्पदा क्रम्य भारते शहरपामाने प्रमाण वाहेल जाणि केल्या प्रमाणावर पानि सादवर करने मा थार्यका। अनदा उपायांचा अवलेन क्रिंग पालाकी क्यम भरेग काटकासकी लामा नापर मलगावकरी मार्गकिन केले.

तर अलाक्षीय मनोगात्व महाविलाल्या प्राप्ति

त्री. स्निकंदन मुक्का भारती भारती भारती अप्रामित निमान कारती भारती प्रामित स्मान कारती भारती प्रामित हों अप्रामित प्रामित भारती भारती प्रामित हों अप्रामित प्रामित भारती भारती प्रामित कारती में के प्रामित कारती कारती भारती भारती कारती कारती कारती कारती भारती कारती कारती

मान भेकिक सामा दिना के महिन्द्र किकाविक्र का 2020-21 नेनर मिन के मिन के

तसेप कांग्रालिं आवारि मेंगाविष मेंगावि

पान्ति माना कोवरी मा कार्यां परमामानी । प्राम्या कोवरी मा कार्यां परमामानी । प्राम्या के कार्यां कार्यां के क

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विज्ञान महाविद्यालय सांगीला

(कला, विद्यान, इ.सी.एस. व बी.सी.ए.) ता. सांगोला, जि. सोलापूर, पिन -४९३ ३०७ (महाराष्ट्र) अर्थः : (०२१८७) २२०५०८ भी.मं. १८५०७६२२४४

E-mail: vidnyanms@yahoo.co.in Website: www.vmssangola.org

प्राचार्यः डॉ.एस.एम.मुलाणी

एम्.ए.पीएच.डी.(भूगोल) (पुण्यक्रलोक अहिल्यादेवी होळकर सोलापुर विद्यापीठाशी संलक्षित)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

जावक क. LANCT /2023-2 8

Rain: 98/06/2023

निमंत्रण पत्र

प्रति,

मा. डॉ. आप्पासाहेब गोविंद पुजारीसाो , माजी प्राचार्य , सांगोला महाविद्यालय, सांगोला, ता. सांगोला, जि. सोलापुर

विषय :- "Water Managemen In Drought Prone Area" या विषयावर ऑनलाईल राष्ट्रीय वेबिनार कार्यक्रमास साधन व्यक्ती म्हणून उपस्थित राहणेबाबत...

महोदय,

विज्ञान महाविद्यालयामध्ये मंगळवार दि. २७/६/२०२३ रोजी सकाळी २०.०० वा. " अर्थशास्त्र विभागाच्या " च्या वतीने आयोजित केलेल्या " Water Managemen In Drought Prone Area " या विषयावर ऑनलाईल राष्ट्रीय वेबिनार कार्यक्रमास उपस्थित राहुन आपण संशोधक व विद्याच्यांना मार्गदर्शन करावे, ही विनंती.

कळावे,

आपला विश्वास प्राचीर्य विज्ञान महाविद्यालय,सोमीस्त्र ता.सोमोस्त्र जि.सोस्त्रपूर ''सांगोला तालुका शेतकरी शिक्षण प्रसारक मंडळ, सांगोला'' संबक्तित



विज्ञान महाविद्यालय सांगोला

(कला, विद्यान, इ.सी.एस. व श्री.सी.ए.) ता. सांगोला, जि. सोलापूर, पिन -४१३ ३०७ (महाराष्ट्र)

湖. ((ロマリとロ) ママロロミン 初.ボ. モとロロモマンション

E-mail - vidnyanmo@yahoo.co.io Website - www.vmssangola.org

प्रातार्थ : डॉ.एस.एस.मुलाणी १५.९.पेएच.बी.(भूगोल)

) (पुण्यत्रलोक अहिल्यावेची होज्ञका सोलापुर विद्यार्थाहाणी सलीवत)

(Third Cycle Accredited by NAAC with B' Grade (CGPA of 2.24)

जावक का. ब्यूमावनी 2023-28

दिनांक: 97/ 04/2023

निमंत्रण पत्र

प्रति.

मा. प्रा. एस. बी . चिम्मड , माजी प्राचार्य , हुपरी कॉलेज कोल्हापूर, जि. कोल्हापूर

विषय :- "Water Managemen In Drought Prone Area" या विषयावर ऑनलाईल राष्ट्रीय वेबिनार कार्यक्रमास साधन व्यक्ती म्हणून उपस्थित राहणेबाबत...

महोदय,

विज्ञान महाविद्यालयामध्ये मंगळवार दि. २७/६/२०२३ रोजी सकाळी १०.०० वा. " अयंज्ञास्त्र विभागाच्या " च्या वतीने आयोजित केलेल्या " Water Managemen In Drought Prone Area " पा विषयावर ऑनलाईल राष्ट्रीय वेबिनार कार्यक्रमास उपस्थित राहुन आपण संज्ञोधक व विद्याच्यांना मार्गदर्शन करावे, ही विनंती.

कळावे.

आपना विश्वास.
प्राचार्य
विज्ञान महाविद्यास्य,सांगीता
ता.सांगोता जि.सोस्तपूर



DR. GANPATRAO DESHMUKH MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)
Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)
(Affiliated to P.A. H. Solapur University)

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Website : www.vmssangola.org

Principal : Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No.

Date: / /20
Sangola
Sangola

Best Practice: 01

1. Title of the Practice: Organization of International/National Conference/Seminars.

2. Objectives of the Practice

To develop a research culture on the campus.

To provide a platform for researchers to exhibit their research work for the best career development.

3. To give better exposure to final year students to interact with researchers at the national as well as international level

3. The Context

Organization of National and international conferences or seminars at college is a difficult task because of lack of funds and unavailability of resource persons.

4. The Practice

At the beginning of the academic year, the academic calendar is published by the Principal and IQAC coordinator through media and website. The schedule of conferences/seminars is to be mentioned in the academic calendar. The Head of respective departments is informed by a notice regarding the organization of conferences/seminars.

Dr. S.S. Dhasade Coordinator,IQAC

Pr. Ganpatrao Deshmukh Mahavidyalaya, Sangola Tal.Sangola Dist. Solapur Principal
Dr.Ganpatrao Deshmukh Mahavidyalaya
Sangola Tal. Sangola Dist. Solapur

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DR. GANPATRAO DESHMUKH MAHAVIDYALAYA SANGOLA

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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography) ☎ Off. (02187) 220508 Mob. No. 9850792244

Email: vidnyanms@yahoo.co.in Website: www.vmssangola.org

Date:

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)



Ref. No.

A respective department prepares a plan for conference/seminars and organizes the conference/seminars by conducting meetings. Respective departments advertise the flyers of conferences/seminars amongst researchers. In conferences/seminars, a number of interactive sessions are

5. Evidence of Success made.

organized, and fruitful discussions are made.

Due to the organization of national/international conferences/seminars, a research culture is developed in the faculty some faculty members are participating in such events and publish their work as oral or poster presentations. During discussion sessions, final-year students participate in interactions with resource persons, so they have self confident to achieve something.

- 6. Problems Encountered and Resources Required Problems: Some researchers expect offline mode for the conduction of this activity. Most students are not aware of importance of conferences and seminars.
- 7. **Resources required:** A well-equipped audio-video system is an essential requirement. A good quality resource person should spend some time delivering lectures. Participants should have sufficient internet facilities, good mobile or Laptops, etc.
- 8. Notes (Optional): Depending on the expectations of the participants, it is possible to organize the event through a hybrid mode.

Dr. S.S. Dhasade Coordinator,IQAC

Dr. Ganpetrao Deshmukh Mahavidyalaya, Sangola Tal.Sangola Dist. Solapur Dr.Ganpatrao Deshmukh Mahavidyalaya Sangola Tal, Sangola Dist, Solapur





DR. GANPATRAO DESHMUKH MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.) Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) (Affiliated to P.A. H. Solapur University)

 Off. (02187) 220508 Mob. No. 9850792244

Email: vidnyanms@yahoo.co.in Website: www.vmssangola.org

Date:

nouth Man

(Third Cycle Accredited by NAAC

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

with 'B' Grade (CGPA of 2.24)

Ref. No.

Online as well as offline. Apart from the resource person's speech, participants' presentation and interaction; everything else is a waste of money.

Contact Person:

Dr. Dhasade S.S.

Coordinator IQAC

09422652388

Coordinator, IQAC

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

Dr. Ganpetrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur





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(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Date:



3.2.2 - Number of workshops/seminars conducted on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship during the year-2022-23

This year nine international/national conferences were organized by the different departments and one IPR workshop is also organised.

Year	Name of the workshop/ seminar	Number	Date From -
		of	To
		Particip	
		ants	1 10
2022-23	International e-Conference on Recent Trend in	150	03/05/2023
	Nano-Materials and Its Applications-2023 (RTNA-		To
	2023) DAY-01		04/05/2023
2022-23	International e-Conference on Recent Trend in		
	Nano-Materials and Its Applications-2023 (RTNA-		,
	2023) DAY-02	5	
2022-23	International conference on Recent Trends,	162	08/072023 To
	Challenges and issues in Social Science & Languages		08/07/2023
	2023		
2022-23	One day National Seminar on, Natural Resources	110	27/04/2023To
	Management and G20		27/04/2023
2022-23	National webinar on Python for digital Image	72	30/05/2023
	processing		To
			30/05/2023

Dr. S.S. Dhas Coordinator, IQAC

Dr. Ganpatrao Deshmulch Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

Dr. Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur







(Arts & Science, E.C.S. & B.C.A.) Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

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(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)



Ref. No.

M.A.Ph.D. (Geography)

Principal: Dr. S.M.Mulani

Date:

1



2022-23	National Webinar on "The Challenges before Indian Democracy"	144	25/05/2023
			To
			25/05/2023
2022-23	National conference on Formation of Maharashtra	167	05/06/2023
2022 20		-	To
			05/06/2023
2022-23	National Webinar on "Water Management in	207	27/06/2023
2022-23	Drought Prone Area"		To
	Diought From the a		27/06/2023
2022-23	National online conference on Statistics and its	156	06/07/2023
2022-23	Applications-2023		To 06/07/023
2022-23	National webinar on "Modernism and	122	29/05/2023
2022 25	Postmodernism in Literature		To
	1 Ostmodel money		29/05/2023
2022-23	One Day Webinar On Awareness On Intellectual	146	27/04/2023
2022-23	Property Rights, Patents For Aspiring Minds		To
	Troperty regies, ratems 2 or 1-1-1-1-1		27/04/2023
2022-23	Workshop on occasion of Science day-2023	120	04/03/2023
2022-23	Workshop on occasion of science		To
			04/03/2023

Dr. S.S. Dhasade Coordinator, IQAC

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

Principal

Dr.Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur



DR. GANPATRAO DESHMUKH MAHAVIDYALAYA, SANGOLA

Tal-Sangola, Dist-Solapur 413307 (Third Cycle Accredited by NAAC with 'B' Grade)

Department of Geography and Internal Quality Assurance Cell (IQAC)

Collaboration With

Solapur Bhoogol Shikshak Sangh, Solapur

and

Pangaea Geographical Association, India

Organized by

One Day Interdisciplinary Online

International Conference

On

"Recent Trends, Challenges and Issues in Social Science and Languages"

Date: - July 08, 2023, Day- Saturday, Time-10.30 am to 02.00 pm

WELCOME AND INTRODUCTION OF CONFERENCE

Dr. Fule Raghunath Appa

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola

Time-10.30 am to 10.35 am

INAUGURAL SPEECH

Prof. Dr. S. M. Mulani

Principal

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola

Time-10.35 am to 10.40 am

KEYNOTE ADDRESSOR

Dr. Praveen G. Saptarshi

Visiting Professor

Salisbury University, USA

Time-10. 40 am to 11.15 am

Topic- Recent Trends, Challenges and Issues in Social Science and Languages

Chairman

Dr. H. B. Tipe,

Professor, Head Dept. of Geography, Vasundhara Kala Mahavidyalaya, Solapur

Time-10. 15 am to 11.20 am

PLENARY SESSION

Prof. Dr. S. D. Shinde

Chairman

Board of Studies in Geography and Geology & Head Department of Geography, Shivaji University, Kolhapur

Time-11.20 am to 11.45 am

Topic-Recent Trends Social Science

Chairman

Dr. T. N. Lokhande

Principal,

Mandesh Mahavidyalaya, Junoni, Tal-Sangola, Dist-Solapur. Maharashtra (India)

Time-11.45 am to 11.50 am

PLENARY SESSION -II

Dr. S. C. Advitot

Principal

Head, Dept. of Geography, C. B. Khedgi's Basaveshwar College, Akkalkot

Time-11.50 am to 12.15 am

Topic- Perspectives On Livelihood Status And Sustainability In Rural India And Sustainable Millennium Development Goals

Chairman

Dr. Shivaji Maske

Professor, Dept. of Geography, Sangameshwar College, Solapur

Time-12.15 pm to 12.20pm

Dr. Jyotiram More

Former, BOS Chairman in Geography, Savitribai Phule Pune University, & Head, Department of Geography, B. J. S. College, Wagholi, Pune

Time-12.20 pm to 12.45 pm **Topic-** Sustainable Water Management

Chairman

Prin. Dr. Harwalkar D. S.

Acting Principal

Mauli Mahavidyalaya, Wadala

Time-12.45 pm to 12.50 pm

TECHNICAL SESSION-II

Chairman

Dr. N. T. Deshmukh

Professor, Head Department Of Geography, Mahatma Gandhi Mahavidyalaya, Ahmedpur

(12.50 pm to 2.00 pm)

Vote of Thanks

Dr. Dhasade Shankar Sangappa

IQAC Coordinator

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola

CHIEF ORGANIZER

Prof. Dr. S. M. Mulani

Principal

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola

Convener

Co-Convener

Dr. Dhasade Shankar Sangappa

IQAC Coordinator

Organizing Secretary Dr. Miss. Jundhale M.S.

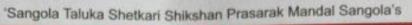
Dr. Waghmode M. B.

Convener Dr. Fule Raghunath Appa

Dr. Patil Bhupal Dnyaneshwar

Feed Back Link

https://forms.gle/SwvAENM7XzZN7m8G7





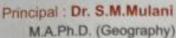
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with 'B' Grade (CGPA of 2.24)

Ref. No. By Hand /2023-24

Date: 10/07/2023

Letter of Appreciation

To,

Dr. Praveen G. Saptarshi, Visiting Professor Salisbury University, USA.

Subject: Letter of Appreciation

Dear Sir.

We are very much thankful to you for delivering a "Keynote Address" during Inaugural Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & delivered a wonderful Keynote Address.

Your talk will definitely enlighten all the participants of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages" to make awareness about social issues, cultural events, etc and its use in daily life. So, thank you very much for your kind support and valuable discussions. Thanking you,

Yours,

Dr. Ganpatrao Deshmukh Mahavidyalaya

Sangola Tal. Sangola Dist. Solapur



(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

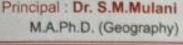
(Affiliated to P.A. H. Solapur University)

★ Off. (02187) 220508 Mob. No. 9850792244 Email: vidnyanms@yahoo.co.in

Website: www.vmssangola.org

Date: 10/67/2023

(Third Cycle Accredited by NAAC



with 'B' Grade (CGPA of 2.24)

Ref. No. By Hand/2028-24

Letter of Appreciation

To,

Dr. H. B. Tipe, Professor, Head Dept. of Geography, Vasundhara Kala Mahavidvalaya, Solapur,

Subject: Letter of Appreciation

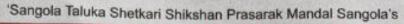
Dear Sir.

We are very much thankful to you for being with us as a "Chairperson" during Plenary Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions. Thanking you,

Yours

Dr. Ganpatrao Deshmukh Mahavidyalava Sangola Tal, Sangola Dist, Solapur





(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

(Affiliated to P.A. H. Solapur University)

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography) ★ Off. (02187) 220508 Mob. No. 9850792244

Email: vidnyanms@yahoo.co.in Website: www.vmssangola.org

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Ref. No. 134 Hand /2023-24

Date: 10/07/2028

Letter of Appreciation

To.

Prof. Dr. S. D. Shinde, Chairman Board of Studies in Geography and Geology Department of Geography, Shivaji University, Kolhapur.

Subject: Letter of Appreciation

Dear Sir.

We are very much thankful to you for delivering an "Invited Talk" during Plenary Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & delivered a wonderful Invited talk on Recent Trends Social Science.

Your talk will definitely enlighten all the participants of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages" to make awareness about Social issues. So, thank you very much for your kind support and valuable discussions.

HOR TO

Thanking you,

Yours

Dr. Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur



(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

(Affiliated to P.A. H. Solapur University)

Company of the Compan Mob. No. 9850792244

Email: vidnyanms@yahoo.co.in Website: www.vmssangola.org

Date: 10/07/2023

(Third Cycle Accredited by NAAC



Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

with 'B' Grade (CGPA of 2.24)

Ref. No. By Hand /2029-24

Letter of Appreciation

To,

Dr. T. N. Lokhande Principal, Mandesh Mahavidyalaya, Junoni,

Subject: Letter of Appreciation

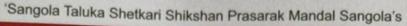
Dear Sir.

We are very much thankful to you for being with us as a "Chairperson" during Plenary Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions. Thanking you,

Yours

Principal Dr Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur





DR. GANPATRAO DESHMUKH MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

(Affiliated to P.A. H. Solapur University)

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography) ★ Off. (02187) 220508 Mob. No. 9850792244

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Date: | 0 | 7 | 12023

Ref. No. By Hand/2023-24

Letter of Appreciation

To,
Dr. S. C. Advitot,
Principal
Head,
Dept. of Geography,
C. B. Khedgi's Basaveshwar College,
Akkalkot.

Subject: Letter of Appreciation

Dear Sir,

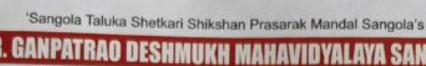
We are very much thankful to you for delivering an "Invited Talk" during Plenary Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & delivered a wonderful Invited talk on Perspectives on Livelihood Status and Sustainability in Rural India and Sustainable Millennium Development Goals.

Your talk will definitely enlighten all the participants of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages" to make awareness about Rural India. So, thank you very much for your kind support and valuable discussions.

Thanking you,

Yours

Dr. Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur



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Ref. No. By Hand/2028-24

Date: 10/07/2023

Letter of Appreciation

To,

Dr. Shivaji Maske Professor, Dept. of Geography, Sangameshwar College, Solapur

Subject: Letter of Appreciation

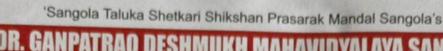
Dear Sir,

We are very much thankful to you for being with us as a "Chairperson" during Plenary Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions. Thanking you,

Yours

Dr. Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur



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Ref. No. By Hand/2023-24

Date: 10/07/2023

Letter of Appreciation

To,

Dr. N. T. Deshmukh Professor & Head, Department of Geography, Mahatma Gandhi Mahavidyalaya, Ahmedpur Dist-Latur

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for being with us as a "Chairperson" during Technical Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions. Thanking you,

Yours

Dr.Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur



DR. GANPATRAO DESHMUKH MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

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(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

08

Ref. No. By Hand/2023-24

Date: 10/07/2023

Letter of Appreciation

To,

Dr. Harwalkar D. S. Acting Principal Mauli Mahavidyalaya, Wadala

Subject: Letter of Appreciation

Dear Sir,

We are very much thankful to you for being with us as a "Chairperson" during Plenary Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & motivated participants.

So, thank you very much for your kind support and valuable discussions.

Thanking you,

Yours

Principal

Dr Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur



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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

☎ Off. (02187) 220508 Mob. No. 9850792244 Email: vidnyanms@yahoo.co.in

Website: www.vmssangola.org (Third Cycle Accredited by NAAC

with 'B' Grade (CGPA of 2.24)

Ref. No. By Hand/2023-29

Date: 10/07/2023

Letter of Appreciation

To,

Dr. Jyotiram More, Former, BOS Chairman in Geography, Savitribai Phule Pune University, & Head. Department of Geography, B. J. S. College, Wagholi, Pune

Subject: Letter of Appreciation

Dear Sir.

We are very much thankful to you for delivering an "Invited Talk" during Plenary Session dated on July 08, 2023 on the eve of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages". You have accepted our invitation & delivered a wonderful Invited talk on Sustainable Water Management.

Your talk will definitely enlighten all the participants of International Conference on, "Recent Trends, Challenges and Issues in Social Science and Languages" to make awareness about Sustainable Water Management. So, thank you very much for your kind support and valuable discussions.

Thanking you,

Yours

Dr. Ganpatrao Deshmukh Mahavidyalaya Sangola Tal. Sangola Dist. Solapur

Special Issue (Only Arts and Humanities)









Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola

Tal-Sangola, Dist-Solapur 413307 (Third Cycle Accredited by NAAC with 'B' Grade) Department of Geography and Internal Quality Assurance Cell (IQAC)

Collaboration With

Solapur Bhoogol Shikshak Sangh, Solapur and

Pangaea Geographical Association, India

Organized by

One Day Interdisciplinary Online

INTERNATIONAL CONFERENCE

Or

"Recent Trends, Challenges and Issues in Social Science and Languages"

Date: - July 08, 2023, Day- Saturday



PATRONS

Mr. Vittalrao Shinde Secretary "Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola Mr. Chandrakant Dheshmukh
Member
"Sangola Taluka Shetkari Shikshan Prasarak Mandal
Sangola

Special Issue (Only Arts and Humanities)

CHIEF ORGANIZER

Prof. Dr. S. M. MulaniPrincipal

Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola

Convener Dr. Patil Bhupal Dnyaneshwar

(Mob; 9766239335)

Co-Convener
Dr. Dhasade Shankar Sangappa
IQAC Coordinator
(Mob.9422652388)

Organizing Secretary Dr. Miss. Jundhale M.S. Dr. Waghmode M. B.

Please Join the Whatsapp Group For Future Instructions

https://chat.whatsapp.com/D1enU98KfpV2BJ42nJBz4C

Please Join the Telegram Group For Future Instructions

https://t.me/+DMOqsnAP4UdhN2Vl

RESOURCE PERSON

Dr. Praveen G. SaptarshiVisiting Professor,
Salisbury University, USA

Convener

Dr. Fule Raghunath Appa (Mob.9421045987)

Prof. Lal Mervin Dharmasiri
Senior Professor (Chair)
Department of Geography,
University of Kelaniya, Kelaniya, Sri Lanka

Professor, Head Department of Geography, Shivaji University, Kolhapur

Prof. Dr. S. D. Shinde

Dr. S. C. Advitot

Principal
Head, Dept. of Geography,
C. B. Khedgi's Basaveshwar College, Akkalkot

Dr. Jyotiram MoreFormer, BOS Chairman in Geography,
Savitribai Phule Pune University, &
Head, Department of Geography,

B. J. S. College, Wagholi, Pune

DEAR COLLEAGUES

It gives us immense pleasure to invite and welcome you to participate in the One Day Interdisciplinary International Conference "Recent Trends, Challenges and Issues in Social Science and Languages" organized by the Dept. of Geography and IQAC of our colleges and your esteem presence is cordially solicited.

ABOUT THE INSTITUTION

Established in 15 May, 1969, Sangola Taluka Shetkari Shikshan Prasarak Mandal, Sangola aims at providing the quality education to socially and economically backward and weaker sections of society for the overall development and progression of deprived region of Sangola Tahsil. Since its establishment, the institution has been running a unit called New English School and Junior College Sangola which includes technical department and professional courses. In order to cater higher educational demands of society, the institute came forward with science college called **Vidnyan Mahavidyalaya on 23rd September, 1991** Besides science stream, other programs like Bachelor of Arts (B.A.), Entire Computer Science (E.C.S.), Bachelor of Computer Application (B.C.A.) are introduced in the college. The institute has started post graduate programs like M.A. English, M.A. History; M.Sc. **Computer Science & Chemistry has started in June 2004, June 2009 and June 2022** respectively.

Since its establishment, the college has been doing tremendous progress in educational field and has become important academic and research centre in the region of Sangola Taluka. In its third cycle the college has been reaccredited with grade "B" in 2018.

The college has been contributing to intellectual and academic development of students through the various departments under Arts and Science facilities. The college takes utmost care of academic progress of students. The is not only providing quality education but motivating and encouraging students to participate in cultural activities and sports. It has large playground and is connected to both railway and bus stand.

"Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's" Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola (Arts, Science, B.Sc. (ECS), B.C.A., M.A.(Eng.),M.A.(History), M.Sc.(Comp Sci., Chemistry)) Tal. Sangola, Dist. Solapur. Affiliated to Punyashlok Ahilyadevi Holkar Solpaur University, Solapur

THEME OF THE CONFERENCE

History, Psychology, Sociology, Management, Science and many other related topics and subjects. This conference aims at bringing together stalwarts in the field and academicians, teachers as well as researchers together on one platform for fruitful interaction and enhancement in knowledge. It will provide an excellent forum for sharing knowledge and results in theory, methodology in this theme. The conference looks for significant contributions to the theme, in theoretical and practical aspects. It is expected to provide an opportunity for an interchange of ideas among researchers and practitioners in different fields of Language, Social Science, Commerce, Science and Technology.

The focal theme of this e-conference is "Recent Trends, Challenges and Issues in Science, Social Science and Languages for Sustainable Development". The delegates are requested to submit their research papers on this focal theme and topics of interest on or before 30th July 2022. All good quality research papers that relate to the focal theme will be considered for presentation and publication.

Special Issue (Only Arts and Humanities) SUB THEME

"Recent Trends, Challenges and Issues in Social Science and Languages"

	<u> </u>	
Social Science Language	Importance Of Language In Social Science	Contemporary Trends and Issues in Science
Economics As Social Science	Social Welfare Studies As Interdisciplinary Practice	Horizons Of Interest: Agenda Setting In The Social Sciences
Sociology And History: The Dynamics Of Synchrony And Diachrony	Geographical Perspectives On Spaces And Flows	Research And Knowledge In Action: The Applied Social Sciences
Philosophy's Place In The Social Sciences	Social Sciences For The Professions	Social Breakdown: Dysfunction, Crime, Conflict, Violence
Social Sciences For Social Welfare	Accounting For Inequalities: Poverty And Exclusion	Social Sciences Addressing Social Crisis Points
Technologies In And For The Social	Economics, Politics And Their Social Effects: Investment, Ownership, Risk,	Research Methodologies Involving 'Human Subjects'
Mass Media	Productivity, Competition, Regulation And	Gender Issues
Commonalities, Differences And Relationships Between The Social And The Natural Sciences: Research Methodologies, Professional Practices And Ethical Positions	Deregulation, Public Accountability, Stakeholders, Trust, Worklife, Resource Distribution, Consumption, Wellbeing, Living Standards	The Social Sciences In The Applied Sciences And Professions: Engineering, Architecture, Planning, Computing, Tourism, Law, Health
The Need For A Public Understanding Of Sciences	Teachers' Beliefs, Classroom Practices And Professional Development Towards Socio- Scientific Issues	Teachers' Beliefs, Classroom Practices And Professional Development Towards Socio-Scientific Issues
Health In Community	Important Trends and Challenges in the Social Science & Science	Recent Trends and Issues in International Mobility
Government And Politics In Social Studies	emerging trends in science and technology	All the Contemporary Trends and Issues in Science & Social Sciences
Sustainable Development	Entrepreneurship Development	International Trade and Foreign Policy
Regional development and Inequality	Tourism Development	Gender Discrimination and Gender Equality
Organic Farming	Rural Development	Crypto Currency
Global Financial Crisis	Major trends in Feminism	NEP 2020 New Approaches to Indian Education System
NGOs and Social Development	Contemporary Social Movements	Modern Trends in Social Sciences
Contemporary Bilateral Conflict (Ukraine-Russia, India-China etc.)	One Part Dominance in India	Anti-Constitutional Parties in India
Leadership of Socio-Political Movement	Privatization and Constitutional Social Security	Central Constitutional Agency and Politics
Role of Governor in Indian Politics	Recent Development in Languages	
New Trends in Criticism	New Trends in Criticism	Globalization and Literatures
Effect on Dialect	Effect of Modernization on Folklore	Different Streams of Language Studies
Media Literacy	Social Media and Society	Translanguaging
Recent Developments in Languages Teaching	Content and Languages Integrated Learning	Popular Literature
Cycle 4leannes of the conformer of his odly covering	the same of a f "Descrit Transfer Challenges and	d Issues in Cosial Coisses and I successor?

Sub themes of the conference broadly cover the aspects of "Recent Trends, Challenges and Issues in Social Science and Languages" but are not limited to the sub themes explicitly mentioned here. Any other good quality research paper that relates to the focal theme may also be considered for presentation and publication.

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Special Issue (Only Arts and Humanities)

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Celebration of Mother Earth Day
Theme: Invest In Our Planet

Date: 27.04.2023

Time: 11.00 am to 02.00 pm.





One Day National Seminar on, "Natural Resources Management & G20" Jointly Organized

Vidnyan Mahavidyalaya, Sangola, Br. Balasaheb Khardekar College, Vengurla, Indian Womens Scientist's Association (IWSA), Kolhapur

> Date: 27.04.2023 Time: 11.00 a.m. to 02.00 p.m.

Program Schedule

- ♦ Introduction: Dr. Suryavanshi R. S. Head Dept. of Botany, V. M. Sangola 5 min.
- Introduction of Inaugural speaker: Dr. Dhanshree Patil 2- min HOD, Botany Dept. Br. B. K. C. Vengurla
- Inaugural Speech: Dr. Shyamala Bharadwaj 45 min.

Vice President, IWSA, Editor, IWSA Newsletter, EX-Head, Fuel Cell Materials & Catalysis Section Chemistry Division Bhabha Atomic Research Centre, Trombay

- Resource Persons:
 - ➤ Dr. Manjusha Deshpande - 45 min.

Topic: G20 Lifestyle for Environment
Director, Lokvikas Kendra - Shivaji University, Kolhapur

> Dr. J. B. Pishte - 45 min.

Topic: Soil of Western Maharashtra Ret. Principal, Ex-head, Geology, GKG College, Kolhapur

➤ Mr. Satish Khade - - 45 min.

Topic: Youth in Action Mode for Water Editor, Jalsanwad, Pune

Vote of Thanks: Mrs. Deepali Taywade Patil - 3 min.

Convener- IWSA, Kolhapur

Anchor: Dr. Seema Gaikwad

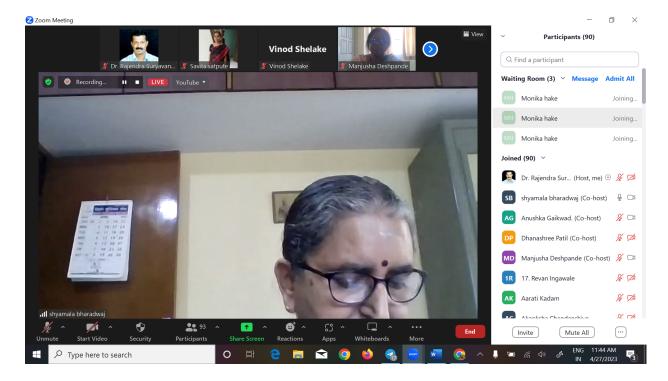
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Dr. Seema Gaikwad Coordinator - V. M. Sangola Co-convener -IWSA, Kolhapur **Dr. Dhanshree Patil**HOD, Botany Dept. Br. B.
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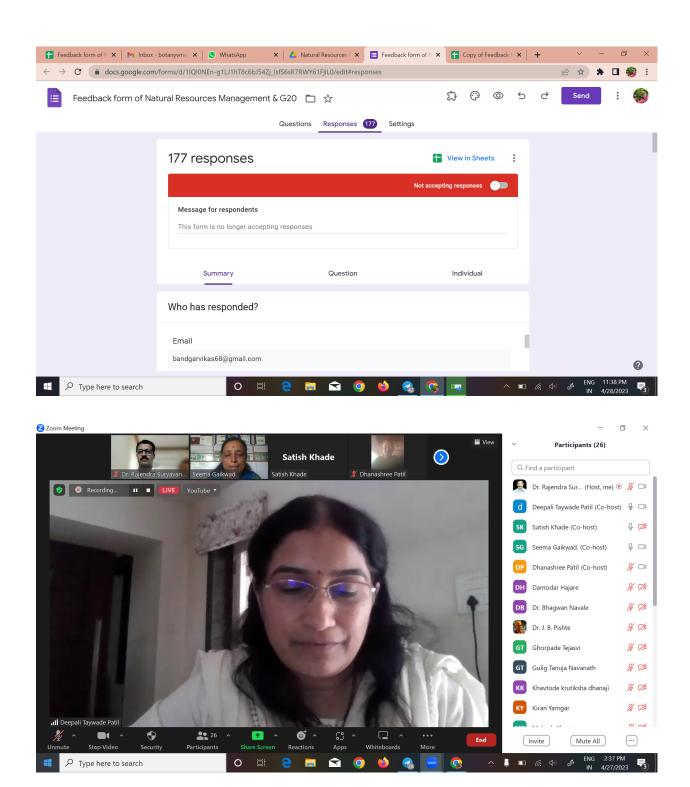
Dr. Mulani S. M. Principal, V. M. Sangola















(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244

Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

(Affiliated to P.A. H. Solapur University)

Principal: Dr. S.M.Mulani

(Third Cycle Accredited by NAAC

with 'B' Grade (CGPA of 2.24)

M.A.Ph.D. (Geography) Ref. No. 69 2023-24

Date: 03/05/2023

To,

Dr. Shyamala Bharadwaj

Vice President, IWSA, Editor, IWSA Newsletter, EX-Head, Fuel Cell Materials & Catalysis Section Chemistry Division Bhabha Atomic Research Centre, Trombay.

Subject: Vote of Thanks

Respected Madam,

We are very much pleased to have your valuable guidance on 27/04/2023 as a Inaugural speaker for a one day National Seminar on "Natural Resources Management & G20" programme organized in our college.

Your speech was really important for the students. Once again we extend our heartfelt gratitude towards you. Thank you very much for your cooperation. We expect the same in future.

Thank You,

Yours Sincerely

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur





(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

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Principal : Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 70/2023-24

Date: 03/05 /2023

To,

Dr. Manjusha Deshpande

Director, Lokvikas Kendra, Shivaji Uni. Kolhapur

Subject: Vote of Thanks

Respected Madam,

We are very much pleased to have your valuable guidance on 27/04/2023 as Resource person for a one day National Seminar on "Natural Resources Management & G20" programme organized in our college.

Your speech was really important for the students. Once again we extend our heartfelt gratitude towards you. Thank you very much for your cooperation. We expect the same in future.

Thank You,

Yours Sincerely

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur





VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

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Mob. No. 9850792244

Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal : Dr. S.M.Mulani

M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 71 2023-24

Date: 03/05/2023

To,

Dr. J. B. Pishte

Ret. Principal, Ex-head, Geology Dept. GKG College, Kolhapur

Subject: Vote of Thanks

Respected Madam,

We are very much pleased to have your valuable guidance on 27/04/2023 as Resource person for a one day National Seminar on "Natural Resources Management & G20" programme organized in our college.

Your speech was really important for the students. Once again we extend our heartfelt gratitude towards you. Thank you very much for your cooperation. We expect the same in future.

Thank You,

Yours Sincerely

Vidnyan Mahavidyalaya,Sangola Tal. Sangola Dist. Solapur



(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244

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Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal: Dr. S.M.Mulani

(Third Cycle Accredited by NAAC

M.A.Ph.D. (Geography)

with 'B' Grade (CGPA of 2.24)

Ref. No. 72

Date: 03/05/2023

To,

Mr. Satish Khade

Editor, Jalsanwad, Pune

Subject: Vote of Thanks

Respected Madam,

We are very much pleased to have your valuable guidance on 27/04/2023 as Resource person for a one day National Seminar on "Natural Resources Management & G20" programme organized in our college.

Your speech was really important for the students. Once again we extend our heartfelt gratitude towards you. Thank you very much for your cooperation. We expect the same in future.

Thank You,

Yours Sincerely

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur





Botany Department & IQAC Vidnyan Mahavidyalaya, Sangola Br. Balasaheb Khardekar College, Vengurla,

Indian Women Scientist's Association (IWSA), Kolhapur

Organized One Day National Seminar on

"Natural Resources Management and G20"





© CERTIFICATE ®

<<FULL NAME>>

This is to certify that Dr./Mr./Mrs./Miss.

of <<NAME OF COLLEGE/INSTITUTE>>

has participated / worked as Resource Person / Organizing committee member in the One Day Workshop on "Natural Resources Management and G20" on 27th April 2023

(Mrs. Deepali Taywade-Patil)

Convener IWSA, Kolhapur Organizing Secretary, HOD, Botany, VMS

(Dr. R. S. Suryavanshi) (Dr. V. A. Dewoolkar) Principal BKC, Vengurla

(Dr. S. M. Mulani) Principal,

V. M. Sangola

Vidnyan Mahavidyalaya, Sangola

Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of English

Report of National Webinar on

"Modernism & Postmodernism in Literature"

Academic year 2022-23

The Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) organized one day national webinar on May 29, 2023 in collaboration with Internal Quality Assurance Cell (IQAC). The topic of the webinar was "Modernism & Postmodernism in Literature". Since, the world is in the phase of transition from modernism to postmodernism it is necessary to through discussion on certain issues under the topic. Hence the department made an attempt to contribute in terms of the national webinar. There were 154 participants from the category of undergraduate and postgraduate students of languages – Marathi, Hindi and English, research scholars, faculties and eminent professors around the nation. The report consists of webinar's broacher and required links, schedule, resource persons' invitation letters, the letters of appreciations, list of participants, certificates as given below.



Vidnyan Mahavidyalaya, Sangola

Tal-Sangola-413307, Dist-Solapur, (MS), India

Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Department of English in collaboration with Internal Quality Assurance Cell(IQAC) organizes

A National Webinar on "Modernism & Postmodernism in Literature" On May 29, 2023

Resource Persons

Key Note Speaker



Dr. Ramesh Chougule
Professor & Head,
Department of English,
Dr. Babasaheb Ambedkar Marathwada
University, Sub-Campus, Osmanabad

Invited Speaker



Prof. M. A. Sami Siddiqui Director, Center for Professional Development of Urdu Medium Teacher, Maulana Azad National Urdu University Hyderabad

Invited Speaker



Dr. Rita Mishra Assistant Professor, Department of English Government PG College, Chunat, Dist. Mirzapur, Uttar Pradesh

- LINK FOR REGISTRATION
 https://docs.google.com/forms/d/e/1FAIpQLSe76Okypi35XSe5oCaMPfoSOWCUnVINd-WGZfGS4nVIv0zAzw/viewform?usp=sf_link
- FREE REGISTRATION After successful registration, please join the WhatsApp group by clicking on https://chat.whatsapp.com/JpSq5Pz0iscAEG0uIF8cDr
- CERTIFICATE ON PARTICIPATION Certificate to be provided after completing the webinar
- Zoom link for Joining:

https://us06web.zoom.us/j/6429496122?pwd=nUZ7I8dENdfgUfswYbQLb3btLqPdZX.1

Meeting ID: 642 949 6122

Passcode: USY2qp

Organizing Committee

Dr. S. M. Mulani Principal, Vidnyan Mahavidyalaya, Sangola Dr. P. J. Rupnar Coordinator Head, Department of English

Dr. S. S. Dhasade IQAC Coordinator Dr. Manojkumar Mane Convener Associate Professor, Department of English

Mr. Kailas Sagare Associate Professor, Department of English Dear All

Greetings from Vidnyan Mahavidyalaya, Sangola

We are pleased to inform you that the department of English in collaboration with Internal Quality Assurance Cell (IQAC), Vidnyan Mahavidyalaya, Sangola has organized a national webinar on "Modernism and Postmodernism in Literature" on May 29, 2023 at 10.00 am

The details of the webinar are given herewith as: the webinar link, the webinar brochure and a link for joining WhatsApp group.

Thanking you,

Yours Truly,

Dr. Pandurang Rupnar 9421061479

Associate Prof. Kailas Sagare 9881631261

Dr. Manojkumkar Mane 9561781188

- LINK FOR REGISTRATION
 https://docs.google.com/forms/d/e/1FAIpQLSe76Okypi35XSe5oCaMPfoSOWCUnVINd-WGZfGS4nVIv0zAzw/viewform?usp=sf_link
- WhatsApp group https://chat.whatsapp.com/JpSq5Pz0iscAEG0uIF8cDr
- Zoom link for Joining:

https://us06web.zoom.us/j/6429496122?pwd=nUZ7I8dENdfgUfswYbQLb3btLqPdZX.1

Meeting ID: 642 949 6122

Passcode: USY2qp

Letters of Invitations



'Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola'

VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) (Affiliated to PA. H. Solapur University)

Mob. No. 9850792244 Email: vidnyanms@yahoo.co.in

Website : www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 1274/2023-24

Date: 27/05 /2023

To,
Mr. Bilyansidha k. Payagonde
Assistant Professor,
Department of English,
Arignar anna Govt. Arts and Science College
Karaikal – 609605, Puducherry (UT)

Dear Sir,

The Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) has organized one day national webinar in collaboration with Internal Quality Assurance Cell (IQAC)

I hope this letter finds you in good health and spirits. I am writing to invite you to be a part of a national webinar on "Modernism and Postmodernism in Literature", organized on May 29 at 10 am.

As an expert in the field of modern and postmodern literature, we would be honored to have you as a chairman of a session and share your valuable insights on the subject matter with our participants. Your experience and expertise would be an invaluable addition to our webinar, and we believe that your contribution would greatly benefit all the participants.

The webinar aims to provide a platform for scholars, researchers, and students to explore the complexities and nuances of modern and postmodern literature. The discussions will cover a wide range of topics, including the historical context, literary techniques, and themes of modernism and postmodernism in literature.

We would be delighted if you could join us as a chairman for the webinar and share your expertise with us. Your presence would be highly appreciated, and we believe that your contribution would make the webinar more meaningful and insightful.

Thank you for considering our invitation. We look forward to hearing from you soon. Thanking You,

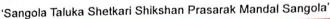
Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener Dr. S. M. Mulani

Principal
 Vidnyan Mahavidyalaya, Sa

Vidnyan Mahavidyalaya, Sangol Tal. Sangola Dist. Solapur





(Arts & Science, E.C.S. & B.C.A.)

☆ Off. (02187) 220508

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Principal: Dr. S.M.Mulani

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 1274 / 2023-24

M.A.Ph.D. (Geography)

Date: 27/05 /2023

To, Dr. Rita Mishra Assistant Professor, Department of English Government PG College, Chunar, Dist. Mirzapur, Uttar Pradesh

Dear Madam,

The Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) has organized one day national webinar in collaboration with Internal Quality Assurance Cell (IQAC)

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Thank you for considering our invitation. We look forward to hearing from you soon. Thanking You,

Warm regards,

Wereese Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener

Dr. S. M. Mulani

Principal

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist, Solapur



VIDNYAN MAHAVIDYALAYA SANGOLA

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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 1274/2023-24

Date: 27 / 05 /2023

To,

Prof. M. A. Sami Siddiqui Director, Center for Professional Development of Urdu Medium Teacher, Maulana Azad National Urdu University Hyderabad

Dear Sir,

The Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) has organized one day national webinar in collaboration with Internal Quality Assurance Cell (IQAC)

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Thanking You,

Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener Dr. S. M. Mulani

Principal
 Vidnyan Mahavidyalaya, Sangola
 Tal. Sangola Dist. Solapur



VIDNYAN MAHAVIDYALAYA SANGOLA

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Principal : Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 127 1/2023-24

Date: 27 105 120 23

To,

Dr. Ramesh B. Chougule Professor & Head, Department of English Dr. Babasaheb Ambedkar Marathwada University, Sub-Campus, Osmanabad

Dear Sir,

The Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) has organized one day national webinar in collaboration with Internal Quality Assurance Cell (IQAC)

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Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener

Dr. S. M. Mulani

Principal Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur



(Arts & Science, E.C.S. & B.C.A.)

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Website: www.vmssangola.org

Principal : Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 127 A/2023-24

Date: 27/05/2023

To. Dr. Prabhanjan Mane Professor, Department of English, Shivaji University, Kolhapur

Dear Sir,

The Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) has organized one day national webinar in collaboration with Internal Quality Assurance Cell (IQAC)

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Thank you for considering our invitation. We look forward to hearing from you soon. Thanking You,

Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener

Principal

Vidnyan Mahavidyalaya, Sangol Tal. Sangola Dist. Solapur

The List of Registered Participants

	Email Address	Name of the Participants	Designati on	Name of Institute / College / University	Address & Pin code	Contact No.	State
1.	kambleashok625@gmail.	Ashok M Kamble	Faculty	Vidnyan Mahavidyalaya Sangola	Sangola	9673922572	Maharashtra
2.	ph225546@gmail.com	Dr. Manojkumar Tatyasaheb Mane	Faculty	Vidnyan Mahavidyalaya, Sangola	Baramati	9561781188	Maharashtra
3.	amolvbhamare@gmail.co	BHAMARE AMOL VIJAY	Research Scholar	Shri Shivaji Mahavidyalaya, Research Centre, Barshi,	Sawatamalina gar, A/p- Tal - Indapur, Dist - Pune, PIN - 413106	7709354001	MAHARAS HTRA
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6.	rupaliagalave22@gmail.c	Ms. Rupali Rajendra Agalave	Assistant Professor	Changu Kana Thakus Arts, Commerce and Science College, New Panvel (Autonomous)	604, Riddhi Siddhi Ashiyana, Plot-42-43, Sector- 35, Kamothe, Pin -410209	9152561992	MAHARAS HTRA
7.	patilswati559@gmail.co m	patilswati559@gma il.com	Research Scholar	Sangameshwar College Solapur	L-80 Snehsnwad Nagar Mahadha colony Jule solapur	9766163905	Maharashtra
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10	sonal.karambe@gmail.co	Sonal Prabhakar Karambe	Research Scholar	N H College Bramhapuri	Musabhai Nagar Nagbhid 441205	8983737637	Maharashtra
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12				Walchand College of	49/12A, Hanuman Nagar Bhayani Peth		
	kadamashwini890@gmail .com	Ashwini Babruwan Shinde	Research Scholar	Arts And Science Solapur	Solapur 413006	9823377356	Maharashtra
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14	dattatrayarayban9@gmail .com	Dattatraya Madhukar Rayban	Research Scholar	Punya shlok ahilya Devi Holkar University solapur	At Post Patkhal Talk Mangalwedha Dist-Solapur	7028999848	Maharashtra
	apurvakale94@gmail.co m	Apurva Santosh Gaikwad	PG Student	Punyashlok ahilyadevi holkar Solapur University Solapur	Mohol 41323	9821330798	Maharashtra
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17	vijayajadhav7896@gmail .com	Vijaya Baban Bagal	Assistant Professor	Shankarrao Mohite Mahavidyalaya, Akluj	At post Khandali Tal - Malshiras,Dis t - Solapur, 413113	8888283197	Maharashtra
18	sjk8785@gmail.com	Sudhakar Jayram Kulkarni	Research Scholar	Walchand College of Arts and Science	411041	8698385842	Maharashtra
19		Sushant Balasaheb Chavan	PG Student	Sushant Balasaheb Chavan	AP- Mahud, Tal- Sangola, dist- solapur 413306	8390303053	MAHARAS HTRA
20	mogalhasan9@gmail.com	Mogal Hasan Jafar	Assistant Professor	SMSMPM Natepute	A/P. Natepute, Tal. Malshiras, Dist. Solapur	9423258460	Maharashtra
21	neetapsarode1997@gmail.com		Research Scholar	New Arts, Commerce and Science College Ahmednagar	Anand row housing bhushan nagar kedgaon Ahmednagar 414005	8605320245	
22	gundnitin90@gmail.com	Gund Nitin Prabhakar	Assistant Professor	Baburao Patil College of Arts and Science, Angar	Atp- Angar Tal- Mohol,Dist- Solapur	8208700872	
23	ashwinipujari1012@gmai l.com		Research Scholar	PAHSUS	Krushnai Niwas, mahud road sangola	7756947119	

24	vikkasbhoval@gmail.com	Vikas Govindrao Bhoval	Research Scholar	Dr Babasaheb ambedkar Marathwada University Aurangabad	Datta nagar osmanabad 413501	9922128831	MAHARAS HTRA
25	dhavalemeher@gmail.co m	Dhavale Meher Ashok	Research Scholar	PAHSUS	Sangola	9890530437	Maharashtra
26	biluresuhasini@gmail.co m	Bilure Suhasini Ramchandra	Research Scholar	PAHSUS Solapur university Solapur	53,simla Nagar, Vijapur Road, Solapur 413004	9834533267	Maharashtra
27	sonaliparbat555@gmail.c om	Sonali Popat Parbat	Assistant Professor	PHA Solapur university	Akole bk, at post parite 413211 ,Tel- Madha,Dist- Solapur	9021536926	Maharashtra
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15	chavansushant786@gmai l.com	Sushant Balasaheb Chavan	PG Student	Solapur Univercity	Mahud, sangola	8390303090	MAHARA HTRA
15	kadamashwini890@gmail .com		Research Scholar	Walchand College of Arts And Science Solapur	49/12A Hanuman Nagar Bhavani Peth Solapur	9823377356	
15			Assistant Professor	Mahamaya government Degree college,shrawasti	271805	9838612290	Uttar

15					A/P-		
					Lohagaon Tq-		
	prashant.mane510@gmail	Dr. Prashant	Assistant	Deogiri College,	Tuljapur Dist-		
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				Shri MD Shah Mahila	Malad		
	tamasha.acharya11@gma			College of Arts and	West,Mumbai		
	il.com	Tamasha Acharya	Professor	Commerce	-64	9867330870	Maharashtra

Vidnyan Mahavidyalaya, Sangola
Tal-Sangola, Dist-Solapur, MH- 413307, India
(Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) Department of English in collaboration with Internal Quality Assurance Cell (IQAC) organizes

A National Webinar on "Modernism & Postmodernism in Literature" on May 29, 2023

Program Schedule

Inauguration:							
10.00 am	Welcome & Introduction	Dr. Pandurang Rupnar					
10.20 am	Key Note Address	Dr. Ramesh B. Chougule					
	Topic: "Postmodernism in Literat	ure"					
11.00 am	Presidential Address	Dr. S. M. <u>Mulani</u>					
11.20 am	Vote of Thanks	Mrs. Savita Gawade					
sion I:							
	Walaama & Introduction	Dr. Manailamar Mana					
		Dr. Manojkumar Mane					
11.35 am Resource Person		Dr. Sami Siddiqui					
	Topic: "Modernism & Postmodernism in Literature"						
12.35 pm	Chairperson's Talk	Dr <u>Prabhanjan</u> Mane					
1.10 pm	Vote of Thanks	Mrs. <u>Vishali</u> Patil					
sion II:							
1.15 pm	Welcome & Introduction	Mr. Kailas Sagare					
1.20 pm	Resource Person	Dr. Rita Mishra					
Topic: "Perspectives on Postmodern Metafiction and the							
Literature of Exhaustion"							
2.00 pm	Chairperson's Talk	Mr. Bilyansidha K. Payagonde					
2.25 pm	Vote of Thanks	Mrs. Rupali Patil					
	10.00 am 10.20 am 11.00 am 11.20 am 11.25 am 11.35 am 12.35 pm 1.10 pm 1.10 pm 1.20 pm 1.20 pm	10.00 am Welcome & Introduction 10.20 am Key Note Address Topic: "Postmodernism in Literat 11.00 am Presidential Address 11.20 am Vote of Thanks sion I: 11.25 am Welcome & Introduction 11.35 am Resource Person Topic: "Modernism & Postmoder 12.35 pm Chairperson's Talk 1.10 pm Vote of Thanks sion II: 1.15 pm Welcome & Introduction 1.20 pm Resource Person Topic: "Perspectives on Postmoder Literature of Exhaustion" 2.00 pm Chairperson's Talk					

Anchor: Dr. Manojkumar Mane Technical Support: Dr. Jagannath Thombare

Modernism and Postmodernism in Literature

YouTube Link:

The List of Active Participants

1.	Name	Name of the Institution/ University.		
2.	Sushant Balasaheb Chavan	Solapur Univercity		
3.	Mr. Janrao Niwrutti Bhimrao	Shri Shivaji Mahavidyalaya Barshi		
4.	Ms. Bhagyashri Siddharam Patil	P. A. H. Solapur University, Solapur		
5.	Dr.Shinde Ashok Krishna	Mudhoji College, Phaltan		
6.		Padambhushan Dr. Vasantravdada Patil		
	Tejal Anil Ghatage	Mahavidyalaya Tasgaon		
7.	R.DHAMAYANTHI	A.V.C.College (Autonomous), Mayiladuthurai		
8.	Prof. Shaikh Firoj Husen	Mudhoji College, Phaltan		
9.	M M Sohil	Govt High School Bohardar Neel		
10.	SOPAN THAKAJI KALE	Mudhoji College Phaltan		
11.	SHINDE VAIBHAV BHIVA	Shri Shivaji Mahavidyalaya, Barshi		
12.		MVP'S Arts, Commerce and Science College		
	Mr Zankar Rajesh Dattatray	Tryambakeshwar		
13.	Dr. Shridevi P. G.	Karnatak University, Dharwad		
14.	Dr.Mrs.S.C.Jagtap	Mudhoji College,Phaltan		
15.		D. B. F. Dayanand College of Arts & Science,		
	Dr. T. N. Kolekar	Solapur		
16.	Piyush Kumar	Piyush Verma's classes English		
17.	Dr.Sarita Ashok Mane	Mudhoji College Phaltan		
18.	Vaishali Vishnu Patil	Punyashlok Ahilyadevi Holkar Solapur University		
19.	Kamble Narayan Nandkumar	SNDT Women's University, Pune Campus		
20.	Kadam Priyanka Jaydeep	Mudhoji College Phaltan		
21.		Bharati Vidyapeeth Institute of Technology, Navi		
	Dr. Pandurang Ananda Kirdat	Mumbai		
22.	Wagaj Ganesh Dattatray	PAH Solapur University Solapur		
23.		Guest Lecturer, Department of English, Arignar		
	M VASANTHAMULLAI	Anna Govt Arts College, Attur.		
24.	Prof. Dr. Annie John	A. R. Burla Mahila Mahavidyalaya, Solapur		
25.	D. D. DIVI A GI	N.M.S.S. Vellaichamy Nadar College, Naga		
	Dr. R. DULASI	malai,Madurai		

26.	Wadkar Pradnya Dharmraj	Shree shivaji Mahavidyalaya, Barshi		
27.	Kailas Namdeo Sagare	Vidnyan Mahavidyalaya Sangola		
28.	Mr.Dhope Kuber Tukaram	PAH Solapur University Solapur		
29.	Dr Sanjay Dixit	Mudhoji College Phaltan Dist Satara		
30.	Arun Duryodhan Pachore	Miraj Mahavidyalaya, Miraj		
31.	Pragati Devrao Munde	Solapur university		
32.	Dr. Sachin Londhe	P.A.H. Solapur University, Solapur		
33.	Bhagyashri Ramrao Deshmukh	PAHSUSOLAPUR		
34.	Dr. Sonali Rahul Pawar	Shripatrao Kadam Mahavidyalaya, Shirwal		
35.	Dr.Geeta Vishvanath Waghmare	Jaikranti Art's Senior College, Latur		
36.	Prof. Borate Manjusha Manoj	Mudhoji College, Phaltan		
37.		Dr. Babasaheb Ambedkar Marathwada University		
	Dikare Sonam Sunil	Sub-campus, Osmanabad		
38.	Dr. Iftekhar Ahmed Md Hanif			
	Khairdi	C. B. Khedgi College Akkalkot		
39.	Shital Rajendra Kedare	A.C.S. College Lasalgaon		
40.	Ashwini Babruwan Shinde	Walchand College of Arts And Science Solapur		
41.		Annai Hajira women's college, Manonmaniam		
40	Dr.S.Subbammal alias Kala	sundaranar university		
42.	Mr.Godase Vaibhav Mahadev	Dhananjayrao Gadgil College of Commerce, Satara		
43.	Wil.Godase varbilav Manadev	Punyashlok Ahilyadevi Holkar Solapur University		
73.	Bhagyshri Narayan Shelake	Solapur		
44.	Sudhakar Jayram Kulkarni	Walchand College of Arts and Science		
45.	Mete Aparna Rajendra	Jai Shriram College of Education, Shikrapur, Pune		
46.	Vijaya Baban Bagal	S.M.College,Akluj		
47.	3 3	Punyashlok Ahilyadevi Holkar Solapur University,		
	Mr. Sachin Subrav Gadhire	Solapur		
48.	R.Saradha	KG COLLEGE OF ARTS AND SCIENCE		
49.		N.V.P. Mandal's Arts, Commerce and Science		
	Dr. Pranav Khoche	College, Lasalgaon		
50.		School of Languages and Literature, Punyashlok		
<i>E</i> 1	Ganapat Jalindar Tad	Ahilyadevi Holkar Solapur University Solapur		
51.	Mr.Amol Ganpati Rajpankhe	Dept of English, Dr B.A.M.U,Aurangabad		
52.	Dr. Rupnar Pandurang Jagannath	Vidnyan Mahavidyalaya Sangola		
53.	Chaitali Nandkumar Mane	vidityan ivianavidyalaya Sangola		
33.	Deshmukh	Shankarrao Mohite Mahavidyalaya, Akluj		
54.	Bilyansidha Kallappa	Arignar Anna Government Arts and Science		
	Payagonde	College, Karaikal, Puducherry		
55.	Satheesan S	Infant Jesus Degree College Hyderabad		
56.	Dr. Manojkumar Tatyasaheb	5 5		
	Mane	Vidnyan Mahavidyalaya Sangola		

57.		Changu Kana Thakur Arts, Commerce and Science		
	Mrs. Rupli Kumar Patil	College, New Panvel (Autonomous)		
58.	Mayuri Chandrakant Lagashetti	Walchand College of Arts and Science Solapur		
59.	Ms. Kolekar Savita M.	P D.V.P. College, Tasgaon		
60.	Dr Ravindra Ashok Kulkarni	Willingdon College Sangli		
61.		JBSP Sanstha's C.K. Thakur ACS College New		
	Abhijeet Hiray	Panvel (Autonomous) Dist. Raigad, 410206		
62.	Daryaba Krishna Imade	Shri Shivaji Mahavidyalaya, Barshi.		
63.	Savita Sadanand Jadhav	S.M.College,Akluj		
64.	Manjusha M.P	Krupanidhi Degree College		
65.	M.Vairamuthu	Sri Kaliswari College, Sivakasi		
66.	Prof Kamble Shreyas Bhimrao	PDP Law College, Phaltan		
67.	Ghorpade Sulbha Dnyandeo	Mudhoji College Phaltan		
68.	Sachin Gaikwad	P.A.H.Solapur University, Solapur		
69.	VANITHA JEYAKUMARI V	KG COLLEGE OF ARTS AND SCIENCE		
70.		Shri. Shivaji Mahavidyalay Barshi, Solapur (
	Mr. Navanath Dnyaneshwar	Punyshlok Ahilyadevi Holakar Solapur University,		
71	Bedare	Solapur)		
71.	J.Santha Christina	Sri Kaliswari College, Sivakasi		
72. 73.	Prof kadam Abhijit Ashok	Mudhoji college phaltan		
74.	Prof. Shinde Shekhar Savata	Mudhoji College, Phaltan.		
	Sonal p karambe	N H COLLEGE BRAMHAPURI		
75. 76.	Pandhare Priti Tukaram	PAHSUS		
	R. Kumara Balaji	Sri Kaliswari College, Sivakasi		
77.	Bansode Swapnali Mahadev	Shankarrao Mohite Mahavidyalay Akluj		
78.	S. Keerthana	N.M.S.S Vellaichamy Nadar College		
79.	Pooja Kamble	GKG Kanya Mahavidyalaya,Jaysingpur		
80.	Aparna Shailesh Sakhare	PAHSUS, Solapur.		
81.	Dr.Rita Mishra	SSSVS Govt.P.G.College,Chunar, Mirzapur		
82.	BHAMARE AMOL VIJAY	Shri Shivaji Mahavidyalaya and Research Centre,		
83.	Pooja Pramod Wavhal	Barshi, PAHSUS Gramonnati mandals ACS college Narayangaon		
84.	Vyavhare Somanath Saudagar	PAH Solapur University Solapur		
85.	Gund Nitin Prabhakar	· · · · · · · · · · · · · · · · · · ·		
86.	Gung mun Fraunakar	Baburao Patil College of Arts and Science, Angar New Arts Commerce and Science College		
00.	Sarode Neeta Pandurang	Ahmednagar		
87.	Dr. S. FEMINA	Sri Kaliswari College, Sivakasi		
88.	Bilure Suhasini Ramchandra	PAHSUS Solapur		
89.	Pradnya Vaijanath Kate.	Sangola College,Sangola		
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Certificates







Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's

Vidnyan Mahavidyalaya, Sangola

Tal-Sangola, Dist-Solapur, (MS) - 413307 (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of English in collaboration with Internal Quality Assurance Cell (IQAC)

A National Webinar on "Modernism & Postmodernism in Literature" on May 29, 2023

CERTIFICATE

This is to certify that

Mr./Mrs./ Ms./ Dr. Abhijeet Hiray

of

Changu Kana Thakur Arts, Commerce and Science College, New Panvel (Autonomous)

has participated in

A National Webinar on "Modernism & Postmodernism in Literature" on May 29, 2023.



Dr. P. J. Rupnar Coordinator & Head

Dr. S. S. Dhasade

Coordinator, IQAC



Mr. K. N. Sagare Associate Professor



Dr. Manojkumar Mane Convener









Vidnyan Mahavidyalaya, Sangola

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CERTIFICATE

This is to certify that

Mr./Mrs./ Ms./ Dr. BHAMARE AMOL VIJAY

of

Shri Shivaji Mahavidyalaya and Research Centre, Barshi, PAHSUS

has participated in

A National Webinar on "Modernism & Postmodernism in Literature" on May 29, 2023.



Dr. P. J. Rupnar Coordinator & Head



Mr. K. N. Sagare Associate Professor



Dr. Manojkumar Mane Convener



Dr. S. S. Dhasade Coordinator, IQAC









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This is to certify that
Mr./Mrs./ Ms./ Dr. M.Vairamuthu
of
Sri Kaliswari College, Sivakasi

has participated in

A National Webinar on "Modernism & Postmodernism in Literature" on May 29, 2023.



Dr. P. J. Rupnar Coordinator & Head



Mr. K. N. Sagare Associate Professor



Dr. Manojkumar Mane Convener



Dr. S. S. Dhasade Coordinator, IQAC









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CERTIFICATE

This is to certify that
Mr./Mrs./ Ms./ Dr. Manjusha M. P.
of

Krupanidhi Degree College

has participated in

A National Webinar on "Modernism & Postmodernism in Literature" on May 29, 2023.



Dr. P. J. Rupnar Coordinator & Head



Mr. K. N. Sagare Associate Professor



Dr. Manojkumar Mane



Dr. S. M. Mulani Principal



Dr. S. S. Dhasade







Vidnyan Mahavidyalaya, Sangola Tal-Sangola, Dist-Solapur, (MS) - 413307 (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur)

Department of English in collaboration with Internal Quality Assurance Cell (IQAC)

A National Webinar on "Modernism & Postmodernism in Literature" on May 29, 2023

ERTIFICATE

This is to certify that

Mr./Ms./Dr. R. DHAMAYANTHI

A. V. C. College (Autonomous), Mayiladuthurai

has participated in

A National Webinar on "Modernism & Postmodernism in Literature" on May 29, 2023.



Dr. P. J. Rupnar Coordinator & Head



Dr. S. S. Dhasade Coordinator, IQAC



Mr. K. N. Sagare Associate Professor



Dr. Manojkumar Mane Convener



Letters of Appreciation



'Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola'

VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

a) Mob. No. 9850792244 Email: vidnyanms@yahoo.co.in

(Affiliated to PA. H. Solapur University)

Website : www .vmssangola org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 137/2023 - 24

Date: 31/05/2023

To,
Prof. M. A. Sami Siddiqui
Director, Center for Professional
Development of Urdu Medium Teacher,
Maulana Azad National Urdu University Hyderabad

Dear Sir,

I hope this letter finds you in good health and spirits. I am writing to express my heartfelt gratitude for the invaluable guidance and support that you provided during the national webinar on "Modernism and Postmodernism in Literature" organized by the Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) in collaboration with Internal Quality Assurance Cell (IQAC).

Your insights and expertise on the subject matter were truly enlightening and inspiring. Your thoughtprovoking presentations and engaging discussions helped us to gain a deeper appreciation of the complexities and nuances of modern and postmodern literature.

The knowledge and skills that you imparted to us will undoubtedly benefit us greatly in our respective fields of study and work. Your passion and dedication to the subject matter were evident throughout the webinar, and we felt privileged to have had the opportunity to learn from you.

On behalf of all the participants, I would like to thank you once again for your invaluable contribution to the webinar. Your guidance and support have left a lasting impression on us, and we look forward to applying the insights and knowledge gained from the webinar in our future endeavors.

Thank you once again for your time, effort, and invaluable contribution to the webinar. Thanking You.

Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener Principal

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur



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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 136/2023-24

Date: 31 /05 /20 23

To,

Dr. Ramesh B. Chougule

Professor & Head,
Department of English
Dr. Babasaheb Ambedkar Marathwada
University, Sub-Campus, Osmanabad

Dear Sir,

I hope this letter finds you in good health and spirits. I am writing to express my heartfelt gratitude for the invaluable guidance and support that you provided during the national webinar on "Modernism and Postmodernism in Literature" organized by the Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) in collaboration with Internal Quality Assurance Cell (IQAC).

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Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener Dr. S. M. Mulani Principal

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur



(Arts & Science, E.C.S. & B.C.A.)

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University)

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Principal: Dr. S.M.Mulani

M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 139/ 2023-24

Date: 31 105 12023

To, Dr. Rita Mishra Assistant Professor, Department of English Government PG College, Chunar, Dist. Mirzapur, Uttar Pradesh

Dear Madam,

I hope this letter finds you in good health and spirits. I am writing to express my heartfelt gratitude for the invaluable guidance and support that you provided during the national webinar on "Modernism and Postmodernism in Literature" organized by the Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) in collaboration with Internal Quality Assurance Cell (IQAC).

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Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener

Dr. S. M. Mulani Principal

Vidnyan Mahavidyalaya, Sange Tal, Sangola Dist Solapur



(Arts & Science, E.C.S. & B.C.A.)

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Principal: Dr. S.M.Mulani

M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 138/2023-24

Date: 31 /05 /20 202

Dr. Prabhanjan Mane Professor, Department of English, Shivaji University, Kolhapur

Dear Sir,

I hope this letter finds you in good health and spirits. I am writing to express my heartfelt gratitude for the invaluable guidance and support that you provided during the national webinar on "Modernism and Postmodernism in Literature" organized by the Department of English of Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola's Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH- 413307, India (Affiliated to Punyashlok Ahilyadevi Holkar Solapur University, Solapur) in collaboration with Internal Quality Assurance Cell (IQAC).

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Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener

Dr. S. M. Mulani Principal

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur



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Principal : Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 140 / 2023-24

Date: 31/05/2023

Mr. Bilyansidha k. Payagonde Assistant Professor, Department of English, Arignar anna Govt. Arts and Science College Karaikal - 609605, Puducherry (UT)

Dear Sir,

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Thanking You,

Warm regards,

Dr. Pandurang Rupnar Head, Dept. English

Dr. Manojkumar Mane Convener

Dr. S. M. Mulani

Principal

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur



सांगोला तालुका शेतकरी शिक्षण प्रसारक मंडळ, सांगोला

विज्ञान महाविद्यालय, सागोला

ता. सांगोला जि. सोलापूर- ४१३३०७ (महाराष्ट्र)

इतिहास विभाग व IQAC आयोजित

राष्ट्रीय चर्चासत्र (ऑन्लाईन)

महाराष्ट्राची जडणघडण





* उद्घाटक व बीजभाषक * ·---





प्रा. डॉ. नारायण भोसले प्रोफेसर, इतिहास विभाग, मुंबई विद्यापीठ

*** उद्घाटन सत्राध्यक्ष ***

डॉ. प्रभाकर कोळेकर

इतिहास विभाग, पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ





* विशेष व्याख्यान *



प्रोफेसर, इतिहास विभाग, वालचंद कॉलेज, सोलापूर



प्रा. डॉ. विष्णू वाघमारे

प्रोफेसर, अध्यक्ष- इतिहास अभ्यास मंडळ पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ





* समारोप सत्र *

प्रा. डॉ. अशोकराव शिंदे



संचालक. सांगोला तालुका शेतकरी शिक्षण प्रसारक मंडळ, सांगोला



* अध्यक्ष *

प्राचार्य डॉ. एस. एम. मुलाणी

विज्ञान महाविद्यालय, सांगोला



Registration For National E - Seminar on "Maharashtrachi Jadanghadan" राष्ट्रीय चर्चासत्र - इतिहास (Online Mode) " महाराष्ट्राची जडणघडण "

Dear All

Its our immense pleasure to inform you that, Department of History in Collaboration with IQAC, Vidnyan Mahavidyalaya, Sangola, Tal-Sangola, Dist-Solapur, MH-413307, India is organizing National Seminar on

"Maharashtrachi Jadanghadan" dated on June 5, 2023. You are cordially invited to Register and join the same. Registration and other details are given in the information broacher of Seminar.

With kind regards:
Dr. S. M. Mulani
Principal,
Vidnyan Mahavidyalaya,Sangola



(Arts & Science, E.C.S. & B.C.A.)

2 Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to P.A. H. Solapur University)

Email: vidnyanms@yahoo.co.in Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography) (Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 132

Date : 24 15

To,

Dr. Narayan Bhosale

Professor, Department of History,

Mumbai University, Mumbai

Subject: Invitation as a Key Note Speaker.

Respected Sir

With reference to the above subject, it is our great pleasure to invite you as Key Note Speaker one day National Seminar on "Maharashtrachi Jadanghadan" on 5th June 2023. We kindly request you to accept our invitation and remain present on 5th June 2023.

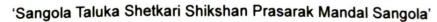
Thanking you

Convener

(Dr. Tanaji Fulari)

Yours faithfully,

(Dr. S. M. Mulani)





(Arts & Science, E.C.S. & B.C.A.)

✿ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)

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Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

To,

Dr. Chandrakant Chavan

Professor & HoD, Department of History,

Walchand College, Solapur.

Subject: Invitation as a Resource Person.

Respected Sir

With reference to the above subject, it is our great pleasure to invite you Resource person one day National Seminar on "Maharashtrachi Jadanghadan" on 5th June 2023. We kindly request you to accept our invitation and remain present on 5th June 2023.

Thanking you

Convener

(Dr. S. M. Mulani)

Yours faithfully,



(Arts & Science, E.C.S. & B.C.A.)

☎ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244 (Affiliated to PA. H. Solapur University)

Email: vidnyanms@yahoo.co.in

Website: www .vmssangola.org

Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 135

Dr. Vishnu Waghmare,

HoD, Dept. of History

Shri Shivaji Mahavidyalaya, Barshi

Subject: Invitation as a Chairperson...

Respected Sir,

With reference to the above subject, it is our great pleasure to invite you Chairperson one day National Seminar on " Maharashtrachi Jadanghadan" on 5th June 2023. We kindly request you to accept our invitation and remain present on 5th June 2023.

Thanking you

Convener

(Dr. Tanaji Fulari)

Yours faithfully.

(Dr. S. M. Mulani)



VIDNYAN MAHAVIDYALAYA SANGOLA

(Arts & Science, E.C.S. & B.C.A.)

■ Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra)
(Affiliated to PA. H. Solapur University)

) Mob. No. 9850792244 Email: vidnyanms@yahoo.co.in Website: www.vmssangola.org

Principal : Dr. S.M.Mulani

M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. 134/2073-24

Date: 29 / 5 /20 23

To,

Dr. Prabhakar Kolekar

Dept. of AIHC, School of Social Science,

P.A.H. Solapur University

Subject: Invitation as a Chairperson...

Respected Sir,

With reference to the above subject, it is our great pleasure to invite you Chairperson one day National Seminar on "Maharashtrachi Jadanghadan" on 5th June 2023. We kindly request you to accept our invitation and remain present on 5th June 2023.

Thanking you

Convener

(Dr. Tanaji Fulari)

Yours faithfully

(Dr. S. M. Mulani)

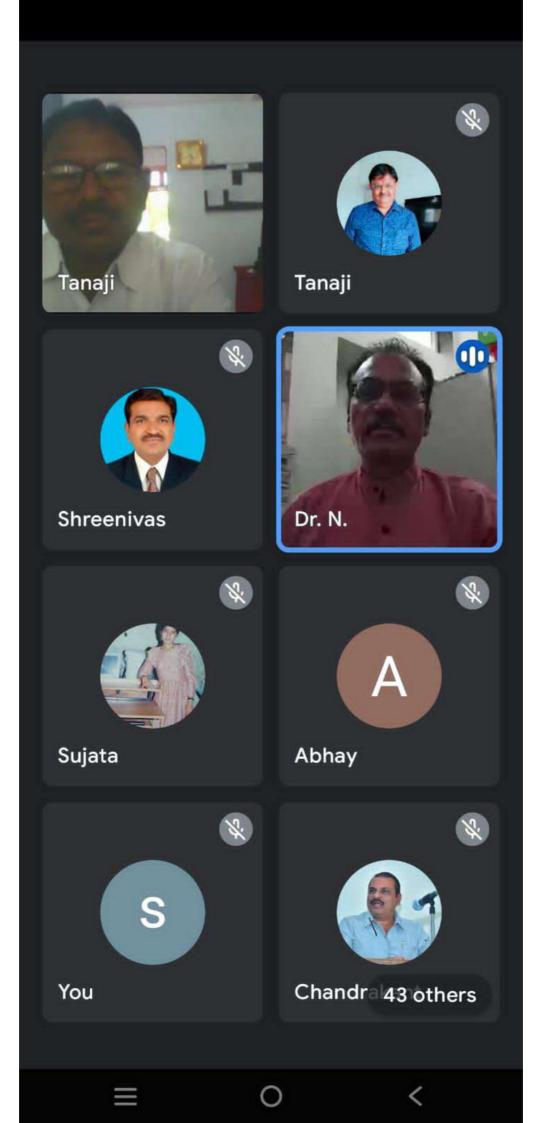
सांगोला तालुका शेतकरी शिक्षण प्रसारक मंडळाचे पुण्यश्लोक अहिल्यादेवी होळकर सोलापूर विद्यापीठ सोलापूर सलग्नित

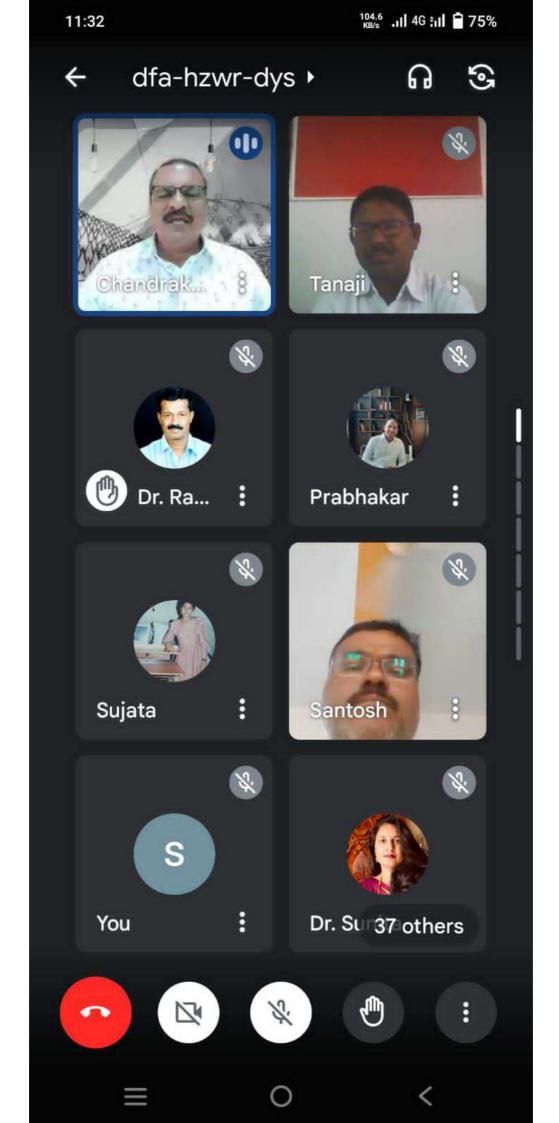
विज्ञान महाविद्यालय, सांगोला. इतिहास विभाग आणि अंतर्गत गुणवत्ता हमी कक्ष आयोजित

ऑनलाइन राष्ट्रीय सेमिनार 2022-23 महाराष्ट्राची जडणघडण

दि. 5 जून 2023 सकाळी 10 ते 2 कार्यक्रम पत्रिका

कार्यक्रमाचे स्वरूप	प्रमुख वक्ते	वेळ
स्वागत व प्रास्ताविक	डॉ. तानाजी फुलारी	10.00-10.15
प्रमुख पाहुणे परिचय	विकास येलपले	10.15-10.30
पहिले सत्र -बीजभाषक	प्रा. डॉ. नारायण भोसले	10.30- 11.30
सत्र - अध्यक्ष	डॉ. प्रभाकर कोळेकर	11.30 – 11.45
दुसरे सत्र -प्रमुख	प्रा.डॉ.चंद्रकांत चव्हाण	11.45 -12.45
व्याख्याते		
सत्र - अध्यक्ष	प्रा.डॉ.विष्णू वाघमारे	12.45 – 1.00
तिसरे सत्र - समारोप	प्रा.डॉ. अशोकराव शिंदे	1.00 – 1.30
अध्यक्षीय मनोगत	प्राचार्य डॉ. सिकंदर	1.30 – 1.45
	मुलाणी	
आभार	प्रा.अशोक वाकडे	1.45 – 2.00
सूत्रसंचालन	प्रा.किसन पवार	



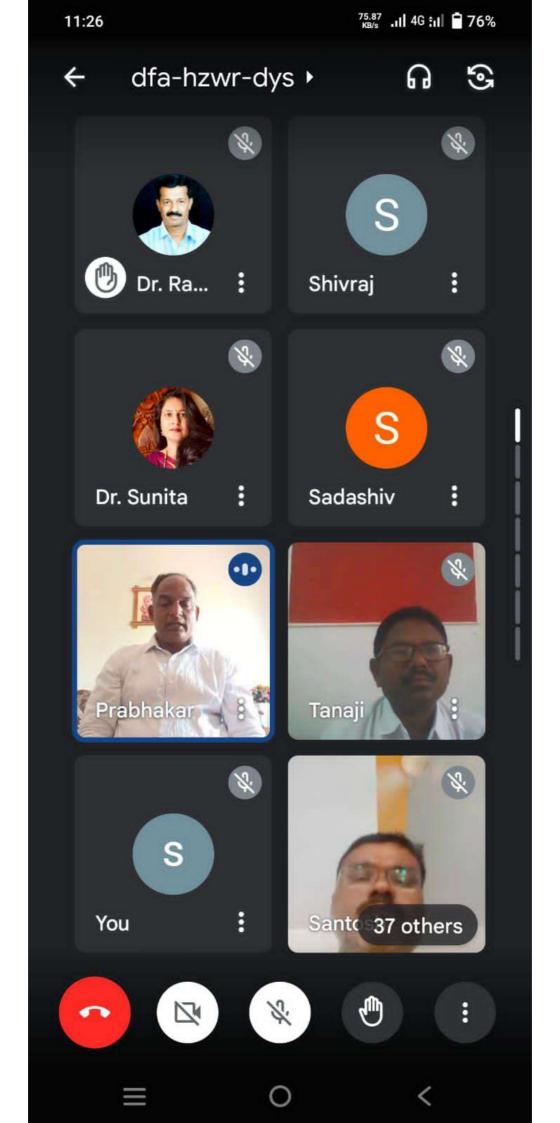


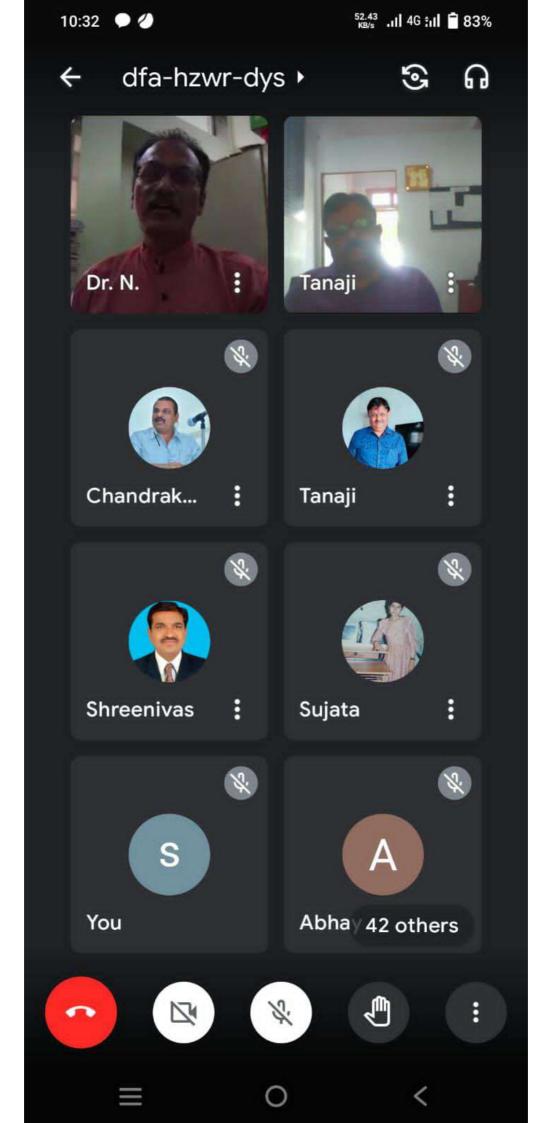
← About this call

	People	Info	
	kunal gaikwad	1%	:
M	Mahesh Ghadage	3.	:
	Mr. Abhishek Mule	12:	:
	Prabhakar Kolekar	12:	:
P.	Pradip Babar	13:	:
P.	Pratap Pawar	13:	:
P.	Puja Gaikwad	13:	:
R	Rasmin Mulani	1%	:
3.	Ravi Shinde	13:	:
k.	Sagar Chavhan	13:	:
	Sagar Tambade	13.	:
S	sambhaji shinde	13.	:
S	sangram fulari	18:	:
S	Sanjay Waghmar		0
S	Shivraj Kore	Tana	+35

← About this call

	People	Info	
S	sambhaji shinde	1%	•
s	sangram fulari	1%	•
S	Sanjay Waghmare	13:	:
S	Shivraj Kore	1%	:
?	Shreenivas Yelpale	13.	:
S	Shubham Chormale	1%	:
S	Soham Jadhav	1%	•
	Sujata Deshmukh	13:	:
	Vaibhav Jadhav	1%	:
	Vaibhav Navale	13:	:
V	vilas fulari	3:	•
	Vinayak Gejage	3	:
	vinayak waghmare	X.	:
	yashoda pangud s		
	अमृता अदाटे	Tana	+35







(Arts & Science, E.C.S. & B.C.A.) Off. (02187) 220508

Tal. Sangola Dist. Solapur Pin. 413 307 (Maharashtra) Mob. No. 9850792244

(Affiliated to PA. H. Solapur University)

Email: vidnyanms@yahoo.co.in Website : www .vmssangola.org

Principal : Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. By Hand 12023-24

Date: 05/ 06/2023

To,

Dr. Vishnu Waghmare,

Professor, Dept. of History Shri Shivaji Mahavidyalaya, Barshi

Dear Sir,

We are thankful to you for being the Chairperson for the session in the One Day National Seminar on "Maharashtrachi Jadanghadan" to be conducted by our college on 5th June 2023.

Thanking You,

Convener

(Dr. Tanaji Fulari)

Yours faithfully

(Dr. S. M. Mulani) Principal

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur





(Arts & Science, E.C.S. & B.C.A.)

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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. By Hand 2023-24

Date: 05/06/2023

To,

Dr. Narayan Bhosale

Professor, Department of History,

Mumbai University, Mumbai

Dear Sir,

We are thankful to you for being the Key Note Speaker/ Resource Person / for the session in the One Day National Seminar on "Maharashtrachi Jadanghadan" to be conducted by our college on 5th June 2023.

Thanking You,

Convener

Yours faithfu

Principal Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur



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M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. By Hand | 2023-24

Date:05/06/2023

To,

Dr. Chandrakant Chavan

Professor & HoD, Department of History,

Walchand College, Solapur.

Dear Sir,

We are thankful to you for being the Resource Person for the session in the One Day National Seminar on "Maharashtrachi Jadanghadan" to be conducted by our college on 5th June 2023.

Thanking You,

Convener

(Dr. Tanaji Fulari)

Yours faithfull

(Dr. S. M. Mulani)

Principal

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur



(Arts & Science, E.C.S. & B.C.A.)

🕿 Off. (02187) 220508

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Principal: Dr. S.M.Mulani M.A.Ph.D. (Geography)

(Third Cycle Accredited by NAAC with 'B' Grade (CGPA of 2.24)

Ref. No. By Hand 12023-224

Date: 65 1 06 12023

To,

Dr. Prabhakar Kolekar

Dept. of AIHC, School of Social Science,

P.A.H. Solapur University

Dear Sir,

We are thankful to you for being the Chairperson for the session in the One Day National Seminar on "Maharashtrachi Jadanghadan" to be conducted by our college on 5th June 2023.

Thanking You,

Convener

(Dr. Tanaji Fulari)

Yours faithfi

(Dr. S. M. Mulani)

Principal

Vidnyan Mahavidyalaya, Sangola Tal. Sangola Dist. Solapur

"महाराष्ट्राची जडणघडण" राष्ट्रीय चर्चासत्राचा अहवाल

इतिहास विभागा- अंतर्गत "महाराष्ट्राची जडणघडण" एकदिवसीय राष्ट्रीय चर्चासत्राचे आयोजन 5 जून 2023 रोजी करण्यात आले होते. या चर्चासत्रामध्ये ८० प्राध्यापक,संशोधकांनी इ. सहभाग घेतला. चर्चासत्राचे प्रथम सत्र उद्घाटक व बीज-भाषक म्हणून मुंबई विद्यापीठातील डॉ. नारायण भोसले यांनी महाराष्ट्राच्या प्राचीन कालखंडापासूनचा ऐतिहासिक वाटचाल स्पष्ट केली त्यामध्ये सम्राट अशोक, सातवाहन ,वाकाटक इत्यादींच्या कालखंडातील सामाजिक, राजकीय, आर्थिक, सांस्कृतिक इतिहासाची मांडणी त्यांनी केली मध्ययुगीन महाराष्ट्राची मांडणी करत असताना छत्रपती शिवाजी शिवरायांनी स्थापन केलेल्या स्वराज्याची वैशिष्ट्यपूर्ण अशी त्यांनी मांडणी केली महाराष्ट्राची मराठी भाषा लोक संस्कृती चालीरीती, रूढी, परंपरा इत्यादीचा विकास त्यांनी स्पष्ट केला. महाराष्ट्राच्या स्थापनेनंतरच्या कालखंडामध्ये 1972 नंतरचा काळा महत्त्वपूर्ण असून या कालखंडामध्ये जनजागरनाच्या संबंधित विविध चळवळी उदयास आल्या. याच महाराष्ट्रातील सामाजिक समतेसाठी चळवळीने पुढाकार घेतला. प्रथम सत्राच्या अध्यक्षस्थानी डॉ. प्रभाकर कोळेकर होते. त्यावेळी त्यांनी महाराष्ट्राच्या स्थापनेची ऐतिहासिक मांडणी केली. महाराष्ट्राच्या समकालीन इतिहासाची मांडणी करत असताना त्यांनी महाराष्ट्रातील सहकारी चळवळी, कामगार चळवळी, शेतकरी आंदोलने ,दलित चळवळी ,जातीव्यवस्था, प्रादेशिक असमतोल इत्यादी विषयावर त्यांनी भर दिला महाराष्ट्र धर्म या भावनेतूनच समाजकारण झाले पाहिजे महाराष्ट्राचा वारसा जपला पाहिजे यासंबंधी त्यांनी आवाहन केले महाराष्ट्राची वैचारिक प्रगल्भता आपण जपली पाहिजे यावर त्यांनी भर दिला.

द्वितीय सत्राच्या विशेष व्याख्यानाबाबत डॉ.चंद्रकांत चव्हाण यांनी मध्ययुगीन महाराष्ट्रातील वारकरी संप्रदाय यांनी सामाजिक धार्मिक क्षेत्रातील परिवर्तनीय अशा कार्याचा आढावा घेतला.संत परंपरेम्ळे सामाजिक समतेसाठी

केलेल्या प्रयत्नाची मांडणी केली. महाराष्ट्राच्या स्थापनेनंतर यशवंतराव चव्हाण पासून तत्कालीन मुख्यमंत्र्यापर्यंतच्या कार्याचा त्यांनी आढावा घेतला. द्वितीय सत्राचे अध्यक्ष डॉ. विष्णू वाघमारे यांनी बोलताना महाराष्ट्राच्या जडणघडणीमध्ये छत्रपती शिवाजी महाराज ,महात्मा, फुले, सावित्रीबाई फुले विठ्ठलराव महर्षी शिंदे ,गाडगे बाबा, डॉक्टर बाबासाहेब आंबेडकर इत्यादी महापुरुषांचा महाराष्ट्राच्या जडणघडणीतील कार्याचा आढावा घेतला. 19 व्या शतकातील मध्यमवर्गाच्या कार्यातून महाराष्ट्राच्या विकासाचा आढावा घेतला.

तृतीय सत्र हे समारोप सत्राचे असून, सत्राचे अध्यक्ष म्हणून प्राचार्य. डॉ.शिकांदर मुलांनी यांनी भूगोलच्या पार्श्वभूमीवर इतिहासाची जडणघडण होत असते. आजचा भूगोल उद्याचा इतिहास असतो. यातून इतिहास विषय आणि भूगोल विषयाच्या निकटच्या संबंधाचे स्पष्टीकरण त्यांनी केले.चर्चासत्राचे प्रस्ताविक डॉ. तानाजी फुलारी यांनी केले. तर सूत्रसंचालन डॉ. किसन माने यांनी केले. चर्चासत्राचे आभार प्रा. अशोक वाकडे यांनी मानले. चर्चासत्र यशस्वी होण्यासाठी डॉ.रावसाहेब गडिहरे, IQACसमन्वयक शंकर धसाडे, श्रीनिवास येलपले, प्रा. किसन पवार, डॉ. जगन्नाथ ठोंबरे, डॉ.महेश घाडगे, डॉ.रिव शिंदे, डॉ.बाळकृष्ण माळी यांनी प्रयत्न केले.

इतिहास विभाग प्रमुख

डॉ.तीनाजी फुलारी







Untitled form

Questions

Responses 115 SettingsTotal points: 0

Feedback Form

STSSPM's Vidnyan Mahavidyalaya, Sangola, Department of History in Collaboration with IQAC, is organizing National Seminar on "Maharashtrachi Jadanghadan" dated on June 5, 2023.

This form is automatically collecting emails from all respondents. Change settings

Full Name (Capital-Surname First) *

Short-answer text

College/Institute * Name

		С	D	E	F	
1		Full Name	Other Identifier	Other Identifier 2	Total Score	P
2	3@gm	ravishinde7173@gm ail.com			0	
3	17@g	balkrishnamali17@g mail.com	Dr. Balkrishna Hari Mali	Shrimant Babasaheb Deshmukh Mahavidyalaya Atpadi	0	
4	3@gm	ravishinde7173@gm ail.com	SHINDE RAVINDRA PANDURANG	PAH solapur university solapur	0	
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6	esh97	ghadage.mahesh97 @gmail.com	Dr. Mahesh Tanaji Ghadage	Sangola college	0	
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8	esh97	Dr.Mahesh Tanaji Ghadage	Sangola college,sangola	Excellent	0	
9	²@gma	MOHOL DIPTI SADASHIV	Abasaheb Garware college	Good	0	Ī
10	ar@gm	Dr Bankar Sadashiv Rajaram	Rayat Shikshan Sanstha Satara	Excellent	0	İ
11	:023@g	•	Vidnyan Mahavidyalaya , Sangola,	Good	0	
12	39@gm	GAIKWAD BALU BHIMRAO	Karmveer Bhaurao Patil Mahavidayalaya Pandharpur	Excellent	0	
13	2004@	Ranjeet Panduranga Shinde	Dr.D.Y.Patil College of engineering	Excellent	0	
14	vad456	GAIKWAD MAHADEO SHRAVAN	Sangola College Sangola	Good	0	
15	j@gma	DR. SHINDE YUVRAJ ARJUN	Shri Vaishnav Institute of Agriculture, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore, Madhya Pradesh	Excellent	0	
16	gmail.	Dr. Tanaji Fulari	Vidnyan mahavidyalaya,Sang ola	Excellent	0	
17	23@gm	WAKADE ASHOK KISAN	Vidnyan Maha.Sangola	Excellent	0	
18	'@gma	MOHOL DIPTI SADASHIV	Abasaheb Garware college	Good	0	
19	iil.com	Prof. DAMJI B H	DBF Dayanand College of Arts and Science Solapur	Excellent	0	
20)0@gm	Kore shivraj praflla	Vidnyan Mahavidyalaya sangola	Excellent	0	
21	2833@	CHAVAN PRACHI DAYANAND	Abasaheb Garware College Pune	Excellent	0	
22	ır123@	Pawar Shahurao Dada	Rashtrapita Mahatma Gandhi Mahavidyalaya Khed K. N. Bhise Art's,	Excellent	0	



S.T.S.S.P.Mandal's

VIDNYAN MAHAVIDYALAYA, SANGOLA



CERTIFICATE OF PARTICIPATION

Presented to

{{full name}} Of

{{other identifier}}

He/She has successfully completed the National E-Seminar on the occasion of "Maharashtrachi
Jadanghadan" organized by Department of History & IQAC of this college through online mode on 05

June 2023

Dr. T.J.Fulari Head, Convener

Dr.S.S.Dhasade **IQAC** Coordinator Dr.S.M.Mulani Principal



S.T.S.S.P.Mandal's

VIDNYAN MAHAVIDYALAYA, SANGOLA



CERTIFICATE OF PARTICIPATION

Presented to

Dr.Mahesh Tanaji Ghadage Of

Sangola college,sangola

He/She has successfully completed the National E-Seminar on the occasion of "Maharashtrachi
Jadanghadan" organized by Department of History & IQAC of this college through online mode on 05 June 2023



Dr. T.J.Fulari Head, Convener

Dr.S.S.Dhasade **IQAC** Coordinator

Dr.S.M.Mulani Principal

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मीणद्त एक्सप्रेस

स्व.वसंतदादांनी जोपासलेला परिवार कल्याणरावांची साथ कदापी सोडणार नाही.: सुधाकर कवडे

पंढरपू(प्रतिनीधी):- घेआमन कल्याण्याच करळे संच्या विरोधात खोटे नाटे आरोप करीत विरोधकांनी विठालच्या निवडणुकीप्रमाणे सा समासदांचीती दितामुल करण्याचा प्रवल सुरू केला आहे परंतु, हा समासद स्व.संतरप्रदा काळे यांनी जोपासलेल्या पॉस्सार्ताल आहे त्यामुळे हा परिचार कल्याणप्राचांची साथ कटापीही संहणार नाही असे बाहीर यत संचालक सुधाकर कचडे यांनी व्यवका केले आहे.

पंदरप्र तालुक्यातील आंचे येथे कल्याणराव काळे यांच्या वसंतदादा शंतकरी विकास पंनेतच्या उमेरावारांच्या प्रचाराथं आयोजित करण्यात आतेल्या बैदकीत बोलत होते. यावेळी चेअरमन कल्याणराव कर्तित विद्युल परिवारांचे नेते गणेश पाटील, बुवा नेते समाधानदाद पर्तात पांचसत चिठल परिवारातील नेते उपस्थित होते.

वावेळी चेअप्सन कल्वाणाल काळे, गणेश दादा पाटील, लानेधर जवलेकर, समाधान पाटे, नितिन बागल, समाधान दादा काळे, हणमंत दांडणे आदीची धाषणे प्राली. वावेळी सुभाव बगदाळे, आरण्या तिंदे, राजराम पाटील, दिलीप कोळे, लहावी साळ्के, महादेव देठे, संभव कबडे, जवसिंह देशमुख, तानाती जाधान, चोटर गाओ, प्रदीव निर्मेळ, सुभाव होंगे, भारका घोसले, पांदूरंग मेरे, पांदूरंग धोसले, तिरुदेशर मोरे, घारल माने, लालेबर घाडणे, नागेल मोरे, अधिन गांवकताड, बालु माने, दादा डोले, विभिन्नण अस्पट, तानाती लिंदे, तानाती चार्चकर्त पिटे, हण्यांन घोसले, कीरंग चोले, विकल्प चाल, तिर्देश्य पद्मा, पराची चींगुले, वांचेमह सहकार विरोक्णीचे आजी मानी संचालक, यश्चेल परसंग्येचे संचालक, विठठलचे मानी संचालक वांचेलह विठठल परिचारतील कांचेकरें

डोंगर पाचेगाव येथील पांडुरंग बिले यांचे निधन.



कोळा (वार्ताहर):-मांगीला राजुक्वातील पाचेगाव बुटुक रायचे मध्या मांगीला सहग्रतीत मिरत ठेडक गीरी पेट्रोल पंत्र केतारी संस्कृती संस्थान स्थापिक असलेले पंडुरंग हरिदास बिले गांचे इट्यपिकसच्या प्रटक्वाने दु-खद निधन झाले त्यांचे वब ५५ वर्षे होते. त्यांच्या डोग पाचेगाव सांगीला शहरात निध्यासुळी सर्वाहर कला होत आहे. सर्वाम्बाह्य स्थापाचे होते.

पांदुरंग किले हे विमिन्ननाडू राज्यातील सोने वांदीचे प्रसिद्ध स्वाचारी होत. डोंगर पांचेगाव चे उत्हास किले, विशाल किले, सागर किले बांचे वे चुलते होते त्यांच्या पक्षत पन्ती, २ मुले, हे मुलगी, वार्चा, पांड असा पर्याचार आहे.

त्यांचा तिसरा शनिवार दिशंक १० दून रोजी सकाबी ८ चावता डोंगर पासेगाच वेथे समझारमूमीत होगार असल्याचे त्यांचे गतिवाईकांनी सांगितते.

विज्ञान महाविद्यालयात एकदिवसीय राष्ट्रीय चर्चासत्र संपन्न

सांगोला(प्रतिनिधी):-चितान महाविद्यालय सांगोला क्षेत्र इतिहास विभागात अंतर्गत एकदिवसीय राष्ट्रीय चर्चासत्राचे नुकतेच अर्थाजन करण्यात आले होते. या चर्चान प्रभागमध्ये प्रशायिक डॉ. तानाजी पुन्तारी चर्चानी कताना सांगोला तालुका जेतकरी जिसका प्रमारक चंड्रवरच्या स्थापेन्यसून ची माहिती दिली. चंड्रवा मार्चत सांगोल्याच्या जैसिणिक विकासातील चोगदान स्पष्ट केले . इतिहास विभागामार्चत चेन्यात आलेल्या राष्ट्रीय चर्चासत्राची उद्दिष्ट स्पष्ट केली.

चर्चाम्बाचे उद्ग्राटक व बीज पाषक परमृत् मुंबई विद्यापीठारील डॉ. नारायण मोमले बांनी महाराष्ट्रच्या प्राचीन कारायंडळ्यासून्या ऐतिहासिक बाट्याल स्पष्ट केली. त्यापच्ये सम्राट उत्तरीक, सारायहत स्ट्याटेंच्या कललंडडातील सामाजिक, पाक्कीय, आर्थिक, सांस्कृतिक इतिहासाची मांडणी त्यांनी केली. मांच्युणीन महाराष्ट्राची यांडणी करत उसताना छाटपति शिवाची महाराज बांनी स्थानन केलोन्या स्वराज्याची वैशिष्टपपूर्ण अशी

त्यांनी मांडणी केली. महाराष्ट्राची मराठी भाषा, लोक संस्कृती चालीरीती, स्वी, पांपरा इत्यादीचा विकास त्यांनी स्पष्ट केला.

प्रथम सवाच्या अध्यक्षस्थानी डी. प्रभाकर कोळकर होते. त्याचेळी त्यांनी महाराष्ट्राच्या स्थापनेची ऐतिहासिक मांडणी चेत्ती, महाराष्ट्राच्या सम्पकालीन इतिहासाची मांडणी करत असताना त्यांनी महाराष्ट्रातील सहकारी चळवळळी, कामगार चळवळळी, तेतकरी आंटोलने, ट्रॉलत चळवळी, जातीत्याच्याच्या आंटीक असमतील इत्यादी विश्ववाचा ज्यांनी भा दिला

द्वितीय सञ्ज्ञाच्या विशेष व्याप्यानाबाबत इ. स्ट्रेस्ट्रेन चकाल यांनी मध्यपुरीन महागृहतील बारकरी संप्रदाय वांनी सामाजिक धार्मिक स्टेशतील परिवर्तनीय अता कार्याचा आडाचा घेतला.संव परिपेमुळे सामाजिक सम्पत्रेसाठी केलेल्या प्रथलाची मोडणी केली. महागृहच्या स्थाननेतंत्र सम्प्रकेताच चकाण पासून तत्कालीन मुख्यमञ्जापर्यंतच्या कार्याचा ल्यांनी आडाचा घेतला. द्वितीय सताचे अध्यक्ष डॉ. विष्णू चायमारे यांनी महाराष्ट्राच्या जडणपडणीमध्ये छत्रपती त्रिकाजी महाराज ,पहाला, पुल्ले, साचित्रोबाई पुल्ले,महाची त्रितं, गाडणे बावा, डॉ. बाबासारेख असंबंदक इत्यादी स्मापुरक्षांचा महाप्राच्या कहणपडणीतील कार्याचा अस्त्राचा घेतला. १९ च्या जतकारतील मध्यम्यमांच्या कार्यासून महाराष्ट्राच्या विकासाचा आदावा घेतला. १९

मृतीय सत्राच्या समारोप सत्राचे अध्यक्ष महणून प्राचार्थ डॉ.शिकंदर मुलांणी यांनी मृगोलच्या पार्थभूमीयर इतिहासाची जडणप्रडण होत असते. आज्ञ्या भूगोल उद्याचा इतिहास असतो. मानून इतिहास विश्य आणि भूगोल विश्याच्या विकटच्या संबंधाचे स्पष्टीकाण व्यांनी केले. सृत्रसंचालन डॉ. किसन माने यांनी केले तर आभार प्रा. अत्रोक चाकडे यांनी मानले. चर्चासत्र बरास्मी होग्यासाठी डॉ. प्रथसांक्ष गडलिरे, साम्ययक रांकर धसाडे, श्रीनिचास येलपले,प्रा. किसन पचार, डॉ. अगलाय ठींबरे यांनी प्रयान केले

माऊली यात्रा कंपनी आयोजित

अधिक व श्रावण मास निमित्त त्रिस्थळी

काशी आयोध्या यात्रा

यात्रेला तीर्थस्थळेः घृष्णेश्वर, मुक्ताईनगर, ऑकारेश्वर, नर्मदा स्नान, उज्जैन, शिशासन, चित्रकट्ट, गुप्त गोदावरी, सतिअनुसया, प्रचागराज, त्रिवणीसंगम, झोपलेला मारुती, अयोध्या, शरयूस्नान, राम लङ्कादर्षण (प्रचागराज गंगा यमुना सरस्वती स्नान) वाराणसी, काशी विश्वेश्वर दर्शन, ८४ घाट दर्शन, गंगा स्नान, विलोधनीय गंगा आस्ती, मेहर शास्त्रा देवी, जबलपूर, भेडाघाट, नर्मदा स्नान, माहूरगड, रेणुका माता दर्शन, औदानागन्नाथ, परळीवीजनाथ, पंढरपूर, सांगोला

* यात्रा निघणारः २८ जुलै ते १० ऑगस्ट पर्यंत (१२ दिवस)
* प्रवास+ निवास+ चहा+ नाश्ता+ दोन वेळ शाकाहारी भोजन







अभयकड जाए, कार, १२शा, ट्रक व दुचाका स्कुटरचे ट्रेनिंग दिले जाईल.
अमित्रलंसाती स्कूटर शिकवण्याची विशेष सुविधा
व परवाना नुतनीकरण करून दिले जाईल.

पत्ता- कर्मवीर नगर, वासुद रोड, सांगोला मो.९७६७१७९२२९, ९९२२२३१३२९



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This is to certify that Ms. SUBHASHREE. M from Annamalai University has presented a paper entitled "The Characterization and Properties of Area-Biased Suja Distribution" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Mr. RAJU BHAKTA from National Institute of Technology Rourkela has presented a paper entitled "Stochastic Comparisons between two Finite Mixture Models with Exponentiated Location-Scale Distributed Components" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that TANGSMAIHA REANG from TRIPURA UNIVERSITY has presented a paper entitled "Two-Stage Hybrid Vns Algorithm for Multi Attribute Decision Making Strategy on Possibility Theory" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **KANNAN THIRUVENGADAM** from **ICMR** has presented a paper entitled "Comparison of Traditional and Tree-Based Feature Selection Methods for Different Data Set sizes" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Ms. Preeti from Department of Statistics & Operational Research, Kurukshetra University, Kurukshetra (136119) has presented a paper entitled "Performance Analysis of Single Unit System with Preventive Maintenance under Warranty and Bi-Objective Inspection Policy" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Sachin Sachdeva from School of Mathematics and Statistics, University of Hyderabad. has presented a paper entitled "Exploring Power Function Distribution Processes and Its uses in Proportional Reverse Hazard Processes" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Mrs V.SURIYA from Shrimathy Devkunvar Nanalal Bhatt Vaishnav College For **Women** has presented a paper entitled "Count Data Models for the Nfhs Iv Survey in India to Determine the Factors Affecting the Number of Antenatal Care Visits in India" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Mr. G. Avinash from The Graduate School, ICAR-IARI, ICAR-IASRI, New Delhi. has presented a paper entitled "Price Forecasting of Agricultural Commodities using Hidden Markov Based Deep Learning Approach" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Mr. Gulshan Chauhan from Department of Operational Research, University of Delhi has presented a paper entitled "A Machine Learning Classification of Brain Features in Children and Adolescents on the Basis of their Parental Occupation" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that M. M. DESHPANDE from Punyashlok Ahilyadevi Holkar Solapur University has presented a paper entitled "Robust Estimation of Process Capability Indices" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Mr. Pankaj Kumar from Department of Mathematics and Statistics, DDU Gorakhpur **University, India** has presented a paper entitled "Alpha Power Odd Transformation: A New Family of Probability Distributions" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **Onkar Dattatray Ghadge** from **Punyashlok Ahilyadevi Holkar Solapur University** has presented a paper entitled "New Approach for Monitoring Linear Regression Profiles" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Mrs S A Pawar from Punyashlok Ahilyadevi Holkar Solapur University has presented a paper entitled "Synthetic Control Chart for Process Variability Using Auxiliary Information" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Dr. Goutam Saha from Department of Statistics, Maharaja Bir Bikram College, Agartala, Tripura has presented a paper entitled "Implementation of Six Sigma Techniques in New Education Policy (Nep)-2020: Especially in Higher Education Institutions" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **Dr. S. R. Sruthi** from **S. D. N. B. Vaishnav College for Women** has presented a paper entitled "Stochastic Reliability Modelling of M/Hr/1/N Queueing System with Working and Working-Breakdown States" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Dr.S SANTHANA LAKSHMI from S.D.N.B. VAISHNAV COLLEGE FOR WOMEN, CHROMPET, CHENNAI 44. has presented a paper entitled "A Statistical Survey on the Effectiveness of Online Learning Methods for College Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that TUKARAM NAVGHARE from SRTM, University Nanded has presented a paper entitled "Face Mask Detection and Recognition using CNN Deep Learning Models" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Chandrakant Gardi from Punyashlok Ahilyadevi Holkar Solapur University has presented a paper entitled "Dispersion Control Chart Based on Group Runs" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Vrushali VijayKumar Ghadage from Punyashlok Ahilyadevi Holkar Solapur University has presented a paper entitled "Acceptance Sampling Based on Truncated Life Tests for Pranav Distribution" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Ms. Anusha James from Department of Statistics, RSMS, Pondicherry University has presented a paper entitled "Inferences on a Copula Based Stress-Strength Reliability Estimation" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that PATIL ANJALI from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "A Case Study On Petrol Diesel Rate Analysis" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that PATIL PRANAVIKA from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "A Case Study On Petrol Diesel Rate Analysis" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that CHOUGULE YASHODA from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "A Case Study On Petrol Diesel Rate Analysis" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that FADATARE SHOBHA from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "A Case Study On Petrol Diesel Rate Analysis" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that PRAJAKTA PATIL from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "A Case Study On Petrol Diesel Rate Analysis" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **PRANAV KUTTE** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Statistical Analysis of Effect of Coaching Classes on Student Marks" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **DIGVIJAY SURYAVANSHI** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Statistical Analysis of Effect of Coaching Classes on Student Marks" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **G. D. SATPUTE** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Statistical Analysis of Effect of Coaching Classes on Student Marks" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **PRATIK KORE** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Statistical Analysis on the Role of Music in Everyday Life" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that ANIKET KADAM from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis on the Role of Music in Everyday Life" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that AKSHAY NAGANE from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis on the Role of Music in Everyday Life" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **G. D. SATPUTE** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Statistical Analysis on the Role of Music in Everyday Life" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **PAWAR YOGITA** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Comparative Analysis of Milk Fat Content in Cows and Buffaloes and the Role of Professionals in Milk Production" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **LATTHE ROHINI** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Comparative Analysis of Milk Fat Content in Cows and Buffaloes and the Role of Professionals in Milk Production" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that BHOSALE SUSHMITA from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Comparative Analysis of Milk Fat Content in Cows and Buffaloes and the Role of Professionals in Milk Production" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that V. V. KOSHTI from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Comparative Analysis of Milk Fat Content in Cows and Buffaloes and the Role of Professionals in Milk Production" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that MALI PRIYANKA from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis on Impact of Social Media on College Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that SHINDE SHAILAJA from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis on Impact of Social Media on College Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

Vijaykumar Ghadage

Convener

Dr. S. M. Mulani



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This is to certify that SHINDE ASHWINI from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis on Impact of Social Media on College Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **PATIL AKSHATA** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Statistical Analysis on Impact of Social Media on College Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that JADHAV AARTI from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis on Impact of Social Media on College Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **PATIL SHITAL** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Statistical Analysis on Impact of Social Media on College Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that PRATIKSHA PATIL from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis of Height And Weight of Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that GEETA CHOUDHARY from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis of Height And Weight of Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **SWATI CHAVAN** from **P.V.P.Mahavidyalaya Kavathe Mahankal** has presented a paper entitled "Statistical Analysis of Height And Weight of Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that ASHWINI MAHAJAN from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis of Height And Weight of Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that PRAJAKTA PATIL from P.V.P.Mahavidyalaya Kavathe Mahankal has presented a paper entitled "Statistical Analysis of Height And Weight of Students" in the National online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **Dnyaneshwar Narayan Darekar** from Central University of Pondicherry has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Chakrala Sreelatha from Rajendra University has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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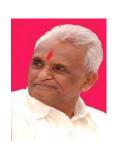
Statistics and Its Applications

This is to certify that Swayamprabha Tiwari from Integral University, University has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Ashwini Digambar Wakale from S.R.T.M.University Nanded has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **HIRA FATIMA** from MANGALAYATAN UNIVERSITY has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that P. KRISHNAPRIYA from THIAGARAJAR COLLEGE OF ENGINEERING has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Reshma Alliso Inamdar from P.A.H Solapur University, Solapur has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that R Madhumidha from Vellore Institute of Technology, Chennai has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Dr Uppara manjulamma from Nitte Meenakshi Institute of Technology has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Hirak Jyoti Sarma from Institute of Advanced Study in Science and Technology has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Arundhati Banerjee from Bagnan Girls High School (HS) has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that BANKITDOR M NONGRUM from National Institute of Technology Meghalaya has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that KAMALAPRIYA. B from M.O.P.VAISHNAV COLLEGE FOR WOMEN has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Navin Chandra from Department of Statistics, Pondicherry University has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that LINSU V. MATHEW from PONDICHERRY UNIVERSITY has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Nirupama Mohapatra from Utkal University Vani Vihar Bhubaneswar Odisha has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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Statistics and Its Applications

This is to certify that **Nagashree Narayan Bhat** from Bangalore Technological Institute has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Lavanya.B.S from The Oxford college of engineering Bangalore VTU has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Vivek Vishnu Jadhav from Punyashlok Ahilyadevi Holkar Solapur University, Solapur has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Sagar Anil Khandagale from Savitribai Phule Pune University has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that S. Sheeja from Shri Krishnaswamy College for Women has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that Ashwini Sourabh Mhetras from P.A.H.S.U Solapur has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that S. Raguraman from DDGD Vaishnav College, Arumbakkam, Chennai has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **Dr. S. SANTHI** from DG Vaishnav College Chennai Tamil Nadu has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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This is to certify that **Dhananjay Madhukar Kshirsagar** from Arts, Commerce and Science College Lanja Dist. Ratnagiri University of Mumbai has participated in the National Online Conference on 'Statistics and its Applications' organized on July 6th, 2023 by Department of Statistics, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola(MS).

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Department of Statistics

Organizes

National Online Conference on

Statistics and Its Applications

(July 06th, 2023)

Inauguration Program & Key Note Address

(Zoom Meeting Link:

https://us06web.zoom.us/j/6429496122?pwd=nUZ7I8dENdfgUfswYbQLb3btLqPdZX.1)

10.30am - 10.40am	Welcome Address -Mr. V. K. Ghadage	
10.40am - 10.45am	Introduction of Chief Guest - Dr. S. S. Dhasade	
10.45am – 11.15am	Key Note Address - Prof. V. B. Ghute Director, School of Computational Sciences, PAH Solapur University	
11.15am -11.25 am	Presidential Address - Dr. S. M. Mulani Principal, Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola	
11.25am - 11.30am	Vote of Thanks - Dr. J. V. Thombare	

Invited Sessions

Invited Talk-I (11.40 am -12.10pm)		
Topic	Hidden Markov Models of Financial Marketing	
Speaker	Prof. Tirupati Rao Padi Dean, Faculty of Mathematical Sciences Pondicherry University, Pondicherry	
Chair	Prof. V. B. Ghute Director, School of Computational Sciences, PAH Solapur University	
Invited Talk-II (12.10pm to 12.40pm)		
Topic		
Topic Speaker	(12.10pm to 12.40pm) Nonparametric tests for two sample location problem based on ranked set	

Invited Talk-III (12.40 pm -01.10pm)		
Topic	Content Validation & Scale Development in Biostatistics	
Speaker	Dr. Anjali Upadhye Biostatistician& IQAC Director, Annasaheb Dange Ayurved College, Sangli	
Chair	Prof. K. G. Potdar Head, Department of Statistics, Ajara Mahavidyalaya, Ajara	

Technical Session

Technical Session-I

(2.00pm to 3.30pm)

Chair: Dr. Navin Chandra,

Ramanujan School of Mathematical Sciences, Pondicherry University, Puduchhery

(Google Meet Link: https://meet.google.com/hjv-eyvw-can)

Name of the Speaker	Title of the Talk
C. SUBRAMANIAN and M. SUBHASHREE	The Characterization and Properties of Area-Biased Suja Distribution
RAJU BHAKTA	Stochastic Comparisons between two Finite Mixture Models with Exponentiated Location-Scale Distributed Components
TANGSMAIHA REANG	Two-Stage Hybrid Vns Algorithm for Multi Attribute Decision Making Strategy on Possibility Theory
KANNAN THIRUVENGADAM, RAJENDRAN KRISHNAN	Comparison of Traditional and Tree-Based Feature Selection Methods for Different Data Set sizes
PREETI and M.S. KADYAN	Performance Analysis of Single Unit System with Preventive Maintenance under Warranty and Bi- Objective Inspection Policy
SACHIN SACHDEVA	Exploring Power Function Distribution Processes and Its uses in Proportional Reverse Hazard Processes
V.SURIYA and R. GEETHA	Count Data Models for the Nfhs Iv Survey in India to Determine the Factors Affecting the Number of Antenatal Care Visits in India
AVINASH, RAMASUBRAMANIAN, V. and HARISH NAYAK, G. H.	Price Forecasting of Agricultural Commodities using Hidden Markov Based Deep Learning Approach

Technical Session-II

(2.00pm to 3.30pm)

Chair: Dr. Nilesh H. Jadhav, D. R. K. College of Commerce, Kolhapur (Google Meet Link: https://meet.google.com/hdg-bxmz-wkt)

(Google Meet Link: https://meet.google.com/nag-bxmz-wkt)		
Name of the Speaker	Title of the Talk	
GULSHAN CHAUHAN	A Machine Learning Classification of Brain Features in Children and Adolescents on the Basis of their Parental Occupation	
M. M. DESHPANDE and V. B. GHUTE	Robust Estimation of Process Capability Indices	
PANKAJ KUMAR, LAXMI PRASAD SAPKOTA and VIJAY KUMAR	Alpha Power Odd Transformation: A New Family of Probability Distributions	
O. D. GHADGE and V. B. GHUTE	New Approach for Monitoring Linear Regression Profiles	
S. A. PAWAR and V. B. GHUTE	Synthetic Control Chart for Process Variability Using Auxiliary Information	
Dr. GOUTAM SAHA	Implementation of Six Sigma Techniques in New Education Policy (Nep)–2020: Especially in Higher Education Institutions	
S.R. SRUTHI and Dr. P. R. JAYASHREE	Stochastic Reliability Modelling of M/Hr/1/N Queueing System with Working and Working-Breakdown States	
Dr. S. SANTHANA LAKSHMI	A Statistical Survey on the Effectiveness of Online Learning Methods for College Students	
ANIKET MULEY, TUKARAM NAVGHARE VINAYAK JADHAV	Face Mask Detection and Recognition using CNN Deep Learning Models	

Technical Session-III

(2.00pm to 3.30pm)

Chair: Dr. Santosh S. Sutar, Shivaji University, Kolhapur (M.S.)

(Google Meet Link: https://meet.google.com/ qta-nhhj-szh)

Name of the Speaker	Title of the Talk
C. G. GARDI and V. B. GHUTE	Dispersion Control Chart Based on Group Runs
V. V. GHADAGE and D. M. ZOMBADE	Acceptance Sampling Based on Truncated Life Tests for Pranav Distribution
A. JAMES and N. CHANDRA	Inferences on a Copula Based Stress-Strength Reliability Estimation
PATIL ANJALI , PATIL PRANAVIKA, CHOUGULE YASHODA, FADATARE SHOBHA, PRAJAKTA PATIL	A Case Study On Petrol Diesel Rate Analysis
PRANAV KUTTE, DIGVIJAY SURYAVANSHI, M.K. Patil, G. D. SATPUTE	Statistical Analysis of Effect of Coaching Classes on Student Marks
PRATIK KORE, ANIKET KADAM, AKSHAY NAGANE, G. D. SATPUTE	Statistical Analysis on the Role of Music in Everyday Life
PAWAR YOGITA, LATTHE ROHINI, BHOSALE SUSHMITA, V. V. KOSHTI	Comparative Analysis of Milk Fat Content in Cows and Buffaloes and the Role of Professionals in Milk Production
MALI PRIYANKA, SHINDE SHAILAJA, SHINDE ASHWINI, PATIL AKSHATA, JADHAV AARTI, PATIL SHITAL	Statistical Analysis on Impact of Social Media on College Students
PRATIKSHA PATIL, GEETA CHOUDHARY, SWATI CHAVAN, ASHWINI	Statistical Analysis of Height And Weight of Students

MAHAJAN and	i
PRAJAKTA PAT	



Dr. Ganpatrao Deshmukh Mahavidyalaya, Sangola Dist. -Solapur (M.S.)



organizes

National Online Conference

On

Statistics and It's Applications

in collaboration with

Internal Quality Assurance Cell (IQAC)

(July 6th, 2023)



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Vijaykumar Ghadage

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Director, School of Computational Sciences
PAH Solapur University, Solapur

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Vijaykumar Ghadage Head, Department of Statistics, Dr. G. D. Mahavidyalaya, Sangola

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About the College:

The Institution, Sangola Taluka Shetkari Shikshan Prasarak Mandal Sangola, was established on 15thMay 1969, with the aim of giving availability and facility of education to socially backward society, to Bahujan society including Harijan, Girijan, Farmers, Labours and socially deprived from progress in the region of SangolaTaluka. Since its establishment, the Sanstha has started Highschool, Junior College, Professional courses of +2 section and Dr. Deshmukh Mahavidyalaya. Dr. Ganpatrao Ganpatrao Deshmukh Mahavidyalaya was established on 23rd September 1991. There is the facility of B.Sc., B.A. B. Sc. (ECS), B.C.A (degree courses), M.A. (English), M.A. (History) & M. Sc.(Computer Science) education in the college. Since its establishment, the college has been progressing ahead and has now become an important academic center in the region of Sangola Taluka. The college is accredited by NAAC with Grade "B" in the year 2018 in 3rd cycle. Along with an intellectual & all round development of students, in order to develop their academic career, there are various departments under Arts & Science faculties.

About Department of Statistics:

Statistics plays a key role in the development of modern science, management and many other important applied areas. With this motivation in mind, the department was established in 1991. The department is running B.Sc. I and B.Sc. II courses. Apart from teaching, the department has actively participated in research activity and overall development of students.

Theme of the Conference:

The National Conference on Statistics and It's Application aims to provide aplatform for researchers working in Statistical Science to share their innovative ideas and research. The advancement of Statistical Science in different branches such as Science, Commerce, Arts, Engineering, Medical and Pharmacy has led to new research avenues for researchers in Statistics. The main objective of this Conference is to better understand these advances in the field of Applied Statistics.

Scope and Area to be covered:

Scope of the conference covers but is not limited to the following topics-

- > Statistical Inference
- ➤ Distribution Theory
- > Sampling Techniques
- Design of Experiments
 Statistical Computing
- > StatisticalProcess Control
- Design of Experiments Regression Analysis
- Predictive Modeling
- Data Analytics

- Clinical Data Analysis
- Statistical Computing
- Actuarial Statistics
- Biostatistics
- > Statistical Genetics

Call for Papers:

The conference will be held in online mode. The authors are invited to contribute their papers. Authors should register and send abstract of their work using the google form before the scheduled date. The received abstracts will be reviewed by experts and the decision will be taken by organizing committee based on the recommendation by experts.

Important Dates:

Submission of abstract :	23-06-2023
Acceptance communication of abstract:	25-06-2023
Registration:	28-06-2023

Registration Link: Kindly register at https://forms.gle/TtY66Uv3EXhxd2YU8

Further communication with participants will be done through mails on their registered e-mail ids.

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For Paper Presentation	Rs. 200/-
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For details:

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