



Sahyadri Shikshan Mandal's

Mahant Jamanadas Maharaj

Arts, Commerce and Science College

Karanjali, Tal. Peth, Dist. Nashik – 422208, (MS) India

(Affiliated to Savitribai Phule Pune University, Pune)

Accredited by NAAC- 'C' Grade (CGPA-1.72)



Criterion-III:

Research, Innovations and Extension

3.3.: Research Publication and Awards

3.3.2: Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during 2018-19 to 2022-23.

॥ स्वदेशे पुज्यते राजा विन्दान्सर्वत्र पुज्यते ॥
Govt. of Mah. Order No. N.G.C. 2009 (152/09) MS R - 4
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Mahant Jamanadas Maharaj
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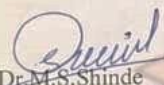
जावक क्र.: 186/2024-25 दिनांक : 20/12/2024


DECLARATION


This is to declare that the information, reports, true copies of the supporting documents, numerical data etc. submitted / Presented in the files is verified by Internal Quality Assurance Cell (IQAC) and it is correct as per the record.

This declaration is for the purpose of NAAC accreditation of HEI for the 2nd cycle period 2018-2019 to 2022-23.

Date:-20/12/2024
Place:-Karanjali


Dr. M.S. Shinde
I.Q.A.C. Co-ordinator
M.J.M. Arts, Commerce
and Science College
Karanjali, Nashik-422 208




Dr. U.P. Shinde
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M.J.M. Arts, Commerce &
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Karanjali, Tal.: Peth, Dist.: Nashik.
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Metrics Level Deviations

Metric ID:	Deviations Details:				
3.3.2	Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years 3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year wise during last five years HEI Input:				
	2022-23	2021-22	2020-21	2019-20	2018-19
	12	21	03	13	04

Finding of DVV:

1. HEI is requested to please provide data calendar year wise in the data template, as academic year is given in the sheet which is incorrect so please provide correct data calendar year wise. 2. For the metrics related to publication calendar year is to be considered for ex. paper published in 2018 should come under 2018-19 and so on. so please provide data and supporting documents accordingly. 3. Kindly note that all the Link provided for all the required supporting documents is showing ERROR " 404 " Please provide a valid Link for all the supporting documents and any other relevant data as per SOP if available. 4. Please provide all the required details in the column " ISBN number" As incomplete entries should not be considered. Please relook and provide correct revised data. 5. Please note that Publications with ISBN number only would be considered. 6. Kindly note that multiple counting of same publication with same author different author in the same calendar year should be counted as one. 7. Please provide Cover page, content page and first page of the selected publication for the last FIVE years. 8. Please provide Web-link of books. 9. Please provide any other relevant data or documents related in this metrics (if available). Note:- Kindly note that all the attached documents should be clearly SCANNED and should be SEALED and SIGNED by the Head of the Institute.

Response of HEI**

1. Data we have been arranged as per calendar year wise and with correct sheet is upload.
2. The book paper publication data have arranged as per the calendar year and provide with in new data.
3. We have resolved the issue related to link and subjected Link is provided.
4. We have revised and provide corrected ISBN number books and chapter data.
5. We have provided only ISBN number publication data.
6. We have rearranged one publication for one author in the same calendar year and provide correct data.
7. It has revised and provide data as per your suggestion.
8. We have provided Web link for books those are online, but most of the books and chapter are offline. It has provided supporting data with scan copy.
9. New HEI Input

2022-23	2021-22	2020-21	2019-20	2018-19
07	12	02	10	01

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3.3.2. Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during 2018-19 to 2022-23.

Total number of books and chapters in edited volumes/books and number of papers in national/ international conference proceedings published:

Year	2022-23	2021-22	2020-21	2019-20	2018-19	Total
Number	07	12	02	10	01	32

List of Total Books and Chapter / number of papers in national and International conference proceeding during 2018-19 to 2022-23

A.2022-2023

Sl. No.	Name of the teacher	Title of the book and chapters Published	Name of the publisher	Title of the paper	Name of the conference	National / International	ISBN number of the proceeding	Calendar Year of publication
1	Dr.A.S.Jondhale	Advances in Medicinal Plant Sciences-Volume-4	Integrated Publications			National	978-93-93502-44-5	2022-2023
2	Dr.A.S.Jondhale	Advances in Medicinal Plant Sciences-Volume-3	Integrated Publications			National	978-93-93502-44-5	2022-2023
3	Dr.M.S.Shinde	Advances in Material Science Characterization and Application	SEAM Books			National	978-81-957290-1-2	2022-2023
4	Dr.A.S.Jondhale	Evaluation and Population Genetics	Successes Publication			National	978-93-24457-57-0	2022-2023
5	Dr.S.P.Chavan	Biochemistry	Successes Publication			National	978-93-24457-57-0	2022-2023
6	Dr.M.S.Shinde	Thin Film Technology and Its Novelty in Material Science	Bumi Publication			National	978-93-91768-93-5	2022-2023
7	Dr.R.M.Nikam	Industrial Chemicals and Environment	AGPH Books			National	978-93-95936-66-8	2022-2023

B.2021-2022

Sl. No.	Name of the teacher	Title of the book and chapters Published	Name of the publisher	Title of the paper	Name of the conference	National / International	ISBN number of the proceeding	Calendar Year of publication
1	Dr.A.S. Jondhale	Advances in Medicinal Plant Sciences Volume-2	Integrated Publications			National	978-93-90471-86-7	2021-2022
2	Dr.M.S. Shinde	Renewable energy sources-I "T.Y.B.Sc. Physics	Success Publications			National	978-93-24457-54-3	2021-2022
3	Dr.M.S. Shinde	Solid State Physics	Success Publications			National	978-93-24457-54-0	2021-2022
4	Dr.M.S. Shinde	Renewable energy sources-II "T.Y.B.Sc. Physics	Success Publications			National	978-93-24457-54-6	2021-2022
5	Dr.M.S. Shinde	Electronics -II T.Y.B.Sc	Success Publications			National	978-93-24457-54-4	2021-2022
6	Dr.M.S. Shinde	Fundamentals of Physics-1	Success Publications			National	976-93-61011-29-8	2021-2022
7	Dr.M.S. Shinde	Classical Mechanics T.Y.B.Sc	Success Publications			National	978-93-24457-54-5	2021-2022
8	Dr.M.S. Shinde	Instrumentation for Agriculture	Success Publications			National	976-93-54515-05-7	2021-2022
9	Dr.D.T. Tayde	Modification and significance of catalysis	AkiNik Publication, New Delhi			National	978-93-90541-80-5	2021-2022
10	Dr.S.P. Chavan	Genetic Engineering in Safflower (Carthamus tinctorius L): Retrospect and Prospect	Springer Nature Singapore Pte Ltd. Singapore			International	978-981-15-5897-9	2021-2022
11	Dr.D.B. Jundre	Kusati	Archana Potdar			National	978-81-952671-0-1	2021-2022
12	Dr.D.B. Jundre			Machine Vet Practice	Holistic Approach of	International	2278-9308	2021-2022

Criterion III: Research, Innovations and Extension –

				Program Sports Satable and Movement its Effects	Helath Science Researc h Sports Science and Yoga During 21st Centaur y			
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C.2020-2021

Sl. No.	Name of the teacher	Title of the book and chapters Published	Name of the publisher	Title of the paper	Name of the conference	National / International	ISBN number of the proceeding	Calendar Year of publication
1	Dr.M.S .Shinde	Chemically deposited CuI thin films and Its Properties	Acade mic Publications, Germany			International	978-6-138-95247-3	2020-2021
2	Dr.A.S. Jondhale	Genetic Improvement Of Therapeutical ly Active Compounds In Selected Medicinal Plants.	AkiNik Publication, New Delhi			National	978-93-90420-77-3	2020-2021

D.2019-2020

Sl. No.	Name of the teacher	Title of the book and chapters Published	Name of the publisher	Title of the Paper	Name of the conference	National / International	ISBN number of the proceeding	Calendar Year of publication
1	Dr.D.T.T ayde			Synthesis of series of In2O3-Sio2 nanocrystalline Material by hydrothermal method	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020

Criterion III: Research, Innovations and Extension –

2	Mr.T.A. Kapadane			Studies on variation in Nanostructures and their application	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020
3	Mr.A.D. Nimbalkar			Studies on Novelty of Variation in carbon nanostructure and their applications	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020
4	Mr.M.B. Avad			Magar (Clarigari) fish banned in India	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020
5	Mr.R.H. Wagchaur			Mannich type synthesis of thiazole derivative by conventional method	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020
6	Dr.M.S.S. hinde			Studies on Nanocrystalline Cd-Zns their films Prepared by simple chemical route	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020
7	Dr.P.T. Wankhedkar			Prevalence of anemia among different age group girls from Karanjali	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020

Criterion III: Research, Innovations and Extension –

8	Mr.R.M. Nikam			Innovative Nanomaterials in Emerging Basic Sciences and Their applications: An Overview	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020
9	Dr.S.P.Chavan			Nanotechnology Application in Agriculture	Innovative Nanomaterials Has Better Future in Emerging Basic Sciences	State	978-93-89739-53-4	2019-2020
10	Dr.A.S.Jondhale			Heterosis studies for growth yield and yield components in Rabi Sorghum	Climate Change and its Effect on Biodiversity Commerce and Economics	International	978-93-89-739-81-7	2019-2020

E.2018-2019

Sl. No.	Name of the teacher	Title of the book and chapters Published	Name of the publisher	Title of the Paper	Name of the conference	National / International	ISBN number of the proceeding	Calendar Year of publication
1	Dr.A.S.Jondhale			Micropropagation of Centella asiatica(Linn) Through Leaf Explants Multiplication	Research and Recent Trends in Biosciences	State	973-93-88441-66-7	2018-2019

File description

The link for the supporting file/additional information is:

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ADVANCES IN **MEDICINAL PLANT SCIENCES**

Volume - 4

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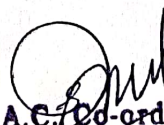
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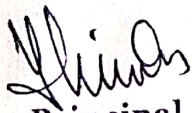
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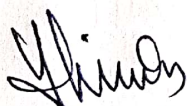
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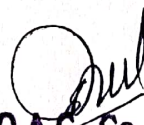
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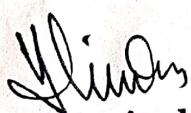
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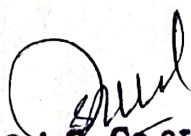
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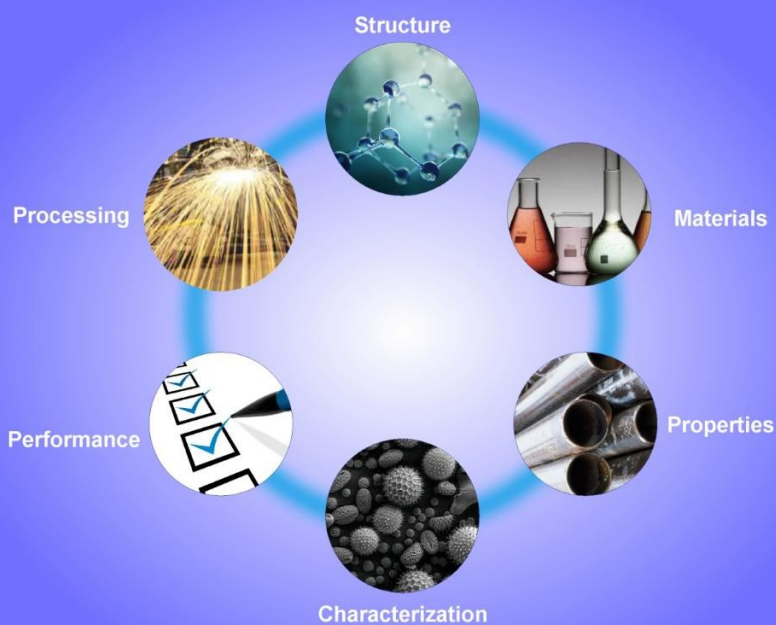
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Chapter: 4

Introduction to Smart Materials

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Introduction:

Smart materials have been used in many applications for many years. The terms "smart" and "intelligent" were coined by the US in the 1980s, and they are now widely used to describe materials and systems that exhibit some form of skillful behaviour. Many smart materials have been developed by military agencies, including the U.S. Department of Defence and NASA working on projects related to national security and aerospace projects were intended to improve the performance of weapons, aircraft, and other aerospace technologies. In recent years their use has been transferred into the civil sector for applications in the construction, transport, medical, leisure and domestic areas. The field of smart materials and structures focuses on the interaction between science, technology, and engineering, combining knowledge from physics, mathematics, chemistry, computer science, and material engineering in order to create materials that respond to their environment or respond to stimuli. This can be done by using electronics or changing the structure of a material. It also involves the use of mathematics to analyze how a device works and how it might be improved upon. Smart materials are functional; they change shape in response to external forces such as heat or pressure. Smart structures with human creativity and innovative ideas can help us improve our safety standards by making cars that are safer to drive in snowy conditions. It also can help serve humanity by making smarter products such as safer cars, more comfortable airplanes and self-repair water pipes, etc. Smart structures can also help us control environment better by increase the energy efficiency of devices or saving space in storage devices. These materials required to undergo purposeful and reversible changes and playing an active part in the structure or device works. Their ability to change their



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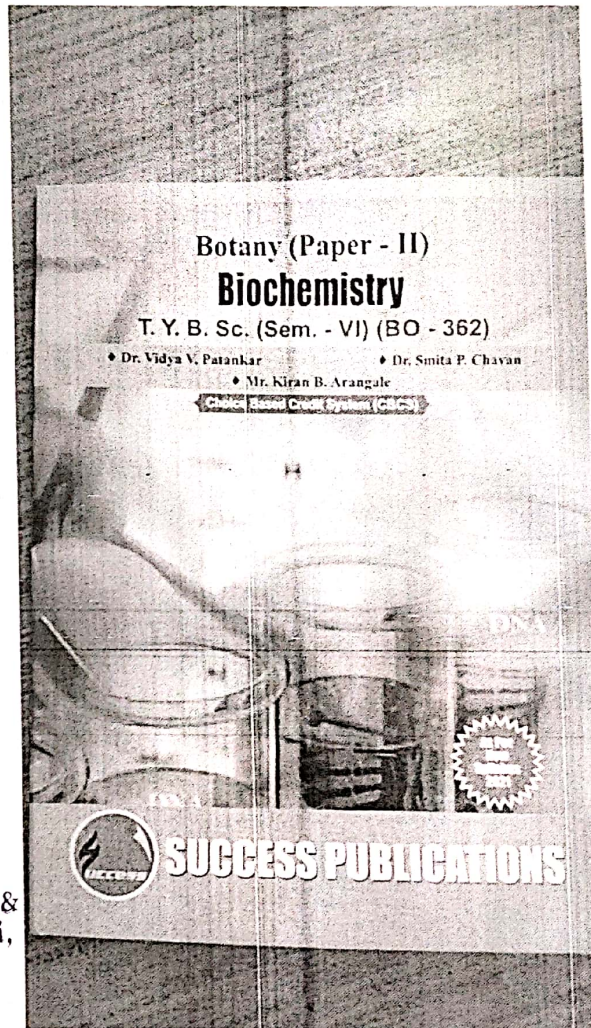



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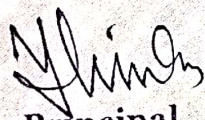
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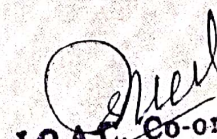
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CHAPTER

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SYNTHESIS AND CHARACTERIZATION OF ZNS THIN FILMS BY CBD

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Abstract:

Present is about the synthesis of ZnS thin films [i. e. deposition of Zn^{+2} ions (source - $ZnSO_4$) and S^{-2} ions (source- CH_4N_2S) on glass substrate] by using chemical bath deposition varied with concentration of $ZnSO_4$ as 0.11M, 0.13M, 0.15M, 0.17M and keeping concentration of thiourea constant (i. e. 0.13M). To synthesize sulphur nanoparticles in ZnS using chemical bath deposition. To study the morphology by scanning electron microscopy. To study the optical properties absorption transmittance by UV-VIS spectroscopy.

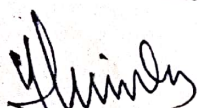
Keyword: Thin film, Chemical bath deposition, scanning electron microscopy, UV-VIS spectroscopy, etc.

Introduction:

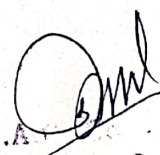
Semiconductor thin film has attracted much attention due to their applications in microelectronics, optoelectronics, nonlinear optics, photocatalysis and energy conversion industries [1-3]. The ZnS is a group II-VI (inorganic) n-type compound semiconductor having a direct optical band gap. Bonding in this compound is a mixture of covalent and ionic types. Group VI atoms are considerably more electronegative than group-II atoms and this introduces ionicity [2]. This character has the effect of binding the valence electrons rather tightly to the lattice atoms. Thus, each of these compounds has a higher melting point and larger band gaps than those of the covalent semiconductors of comparable atomic weights [3]. There are several deposition techniques such as RF sputtering, spray pyrolysis, CBD, MOCVD, etc. Among all these processes, CBD is one of the most promising and has proved advantageous for photovoltaic applications because it is efficient, cost effective and suitable for making large area high quality thin films [4].

Due to wide band gap, ZnS films are used as a layer on solar cells to transmit lighter especially short wavelength light into absorber layer. Fabrication of large area arrays. Sensors. Photo thermal solar coatings. Information storing devices. The ZnS used as a luminescent pigment such as hand on clocks, X-ray and television screens [5]. Zinc sulphide thin film are used as a window layer in photovoltaic cell, multilayer light emitting diode, cathode ray tube, photo detector and other optoelectronic devices. Buffer layer in solar cell, permitting more light especially the short wavelength light into absorber layer [6]. Owing to their wide spectrum of properties, this materials relate to a large variety of existing and potential applications in optics, solar energy

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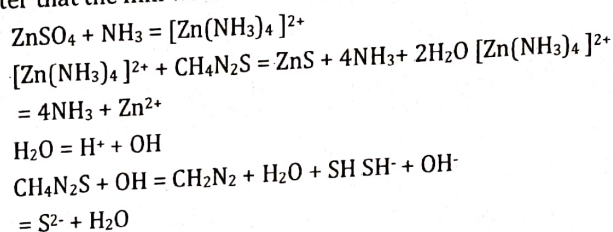
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conversion, electronics, magnetic, passivation, catalysis, batteries, fuel cells and ion sensing. Zinc sulphide is an important metal chalcogenide which is white in colour, and commonly used as a pigment [7-9].

Materials and Method:

All chemicals Zinc sulphate (ZnSO_4), Thiourea ($\text{CH}_4\text{N}_2\text{S}$) and Ammonia solution were AR grade and used as received. Double distilled water is used as solvent. The microscopic glass slides used as substrates prior to deposition were soaked in concentrated hydrochloric acid for 24h, removed and washed with foam sponge in ethanol and finally rinsed with distilled water. They were drip dried in air. For the preparation of ZnS thin film using the chemical bath deposition method in basic medium 0.11M zinc sulphate and 0.13M sodium hydroxide were added in 80 ml DDW. The solution was stirred continuously. On complete dissolution, Ammonia solution was added in to the above solution until pH of the solution become 12. Ultrasonically cleaned glass substrate was then inserted in the solution. Solution was then heated upto 650°C . Finally 0.13 M thiourea was added into the above solution which acts as a sulphur source. The film was deposited for 2 hours. After that the film was ultrasonically cleaned in DDW to remove the unreacted part.



Characterization Techniques:

The structural characterization of the films was carried out using Philips (PW-3710) X-ray diffractometer with $\text{CuK}\alpha$ radiation ($\lambda = 1.5404\text{\AA}$) in 2θ range from 20° - 80° . The surface morphological study of ZnS films was carried out by Scanning Electron Microscopy using a Model JOEL, JSM 6360 A. The optical absorption spectra of the figure were recorded on Systronic spectrophotometer in the wavelength range of 350-850 nm.

Result and Discussion:

Structural Studies

Fig. 1 shows XRD pattern onto glass substrate showing nanocrystalline structure with some sharp diffraction lines with wurtzite hexagonal ZnS phase.

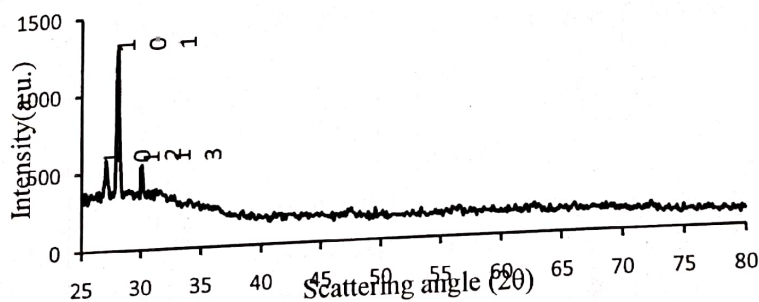


Fig. 1: The X-ray diffraction pattern of as-deposited ZnS on glass substrate

The average grain size of ZnS film particles is determined Using the scherrer's formula. The crystalline size (d) was calculated as

$$d = 0.19\lambda / \beta \cos \theta \dots\dots\dots (1)$$

Where β is the broadening of diffraction line measured at full width of half maximum intensity (rad.) and $\lambda = 1.5406 \text{ \AA}$ is the wavelength of $\text{CuK}\alpha$ radiation. The average grain size of ZnS thin films was found to be about 150 nm.

Morphological Properties

The surface morphology of ZnS thin films were studied using the scanning electron microscopy (SEM- JOEL JSM 6360A with an operating voltage 20 kV). Fig. -2 shows the SEM images of ZnS thin films grown at various concentration of complexing agent: 1) 0.11M, 2) 0.13M, 3) 0.15M, 4) 0.17M. All ZnS layers show the uniform, compact and dense morphology. Moreover it is observed that at low concentration of complexing agent, overgrowth is observed.

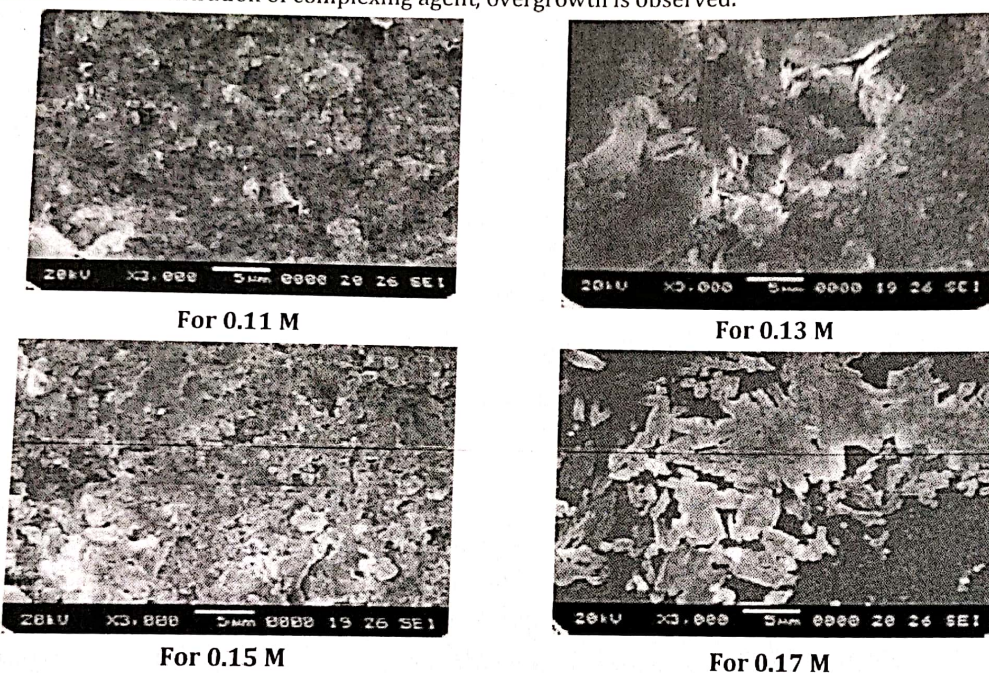


Fig2: SEM images for ZnS thin films grown at various complexing agent concentration

Optical Properties

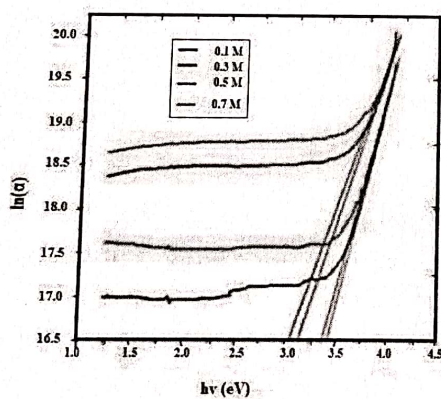


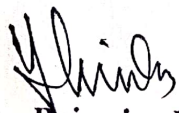
Fig. 3: Absorption spectra for ZnS thin film grown at various complexing agent concentration as 1) 0.11M, 2) 0.13M 3) 0.15M and 4) 0.17M

Conclusions:

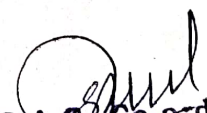
Zinc sulphide (ZnS) thin films successfully deposited from the single bath by using chemical bath deposition method with different concentration of zinc sulphate. The XRD study showed the Wurtzite (Hexagonal) structure of ZnS thin films with The average grain size of ZnS thin films was found to be about 150 nm. SEM shows the compact deposition over the substrate with planar morphology. The sample deposited with 0.17 M zinc sulphate concentration shows uniform deposition of ZnS particles with no overgrowth present on the surface. Optical band gap was found for ZnS thin film deposited at 2hour deposition time at various concentration as: 1) 3.45eV for 0.11M, 2) 3.40eV for 0.13M, 3) 3.20eV for 0.15M, 4) 3.05eV for 0.17M. The band gap decreases with increases in concentration.

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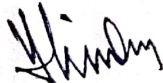
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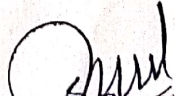
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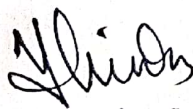
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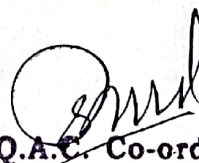
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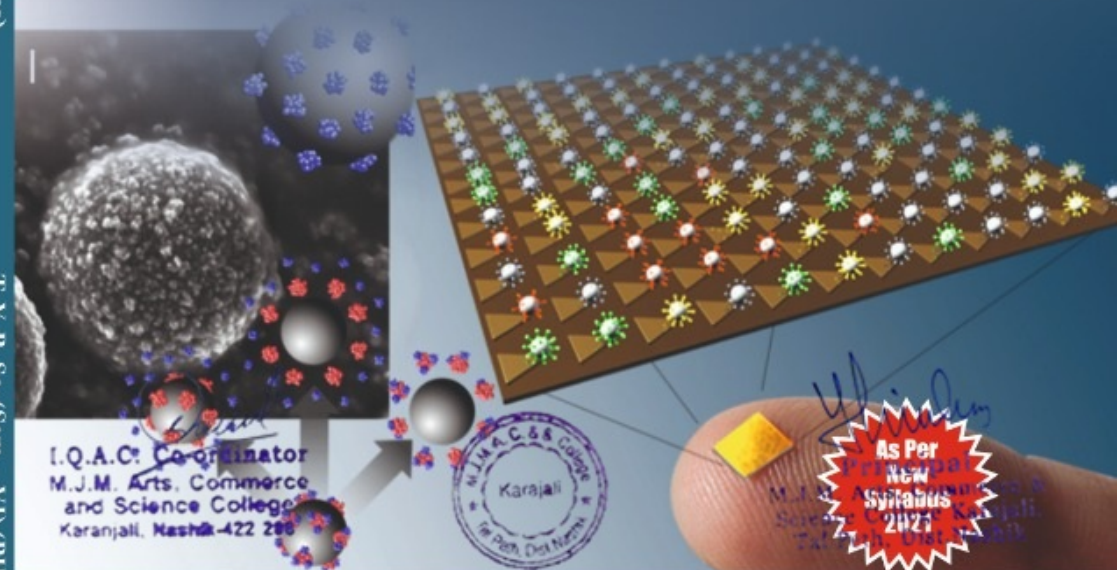
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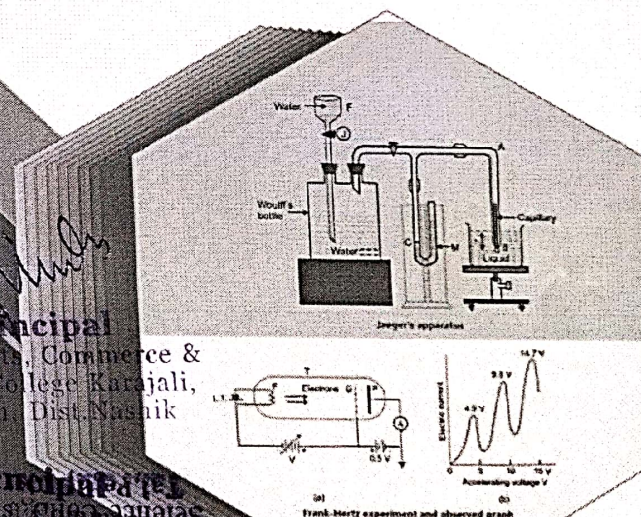
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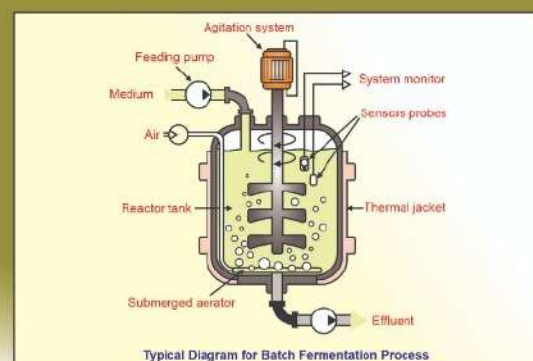
INSTRUMENTATION FOR AGRICULTURE

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Chapter - 3

Modiification & Significance of Catalysis

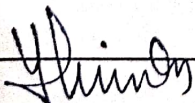
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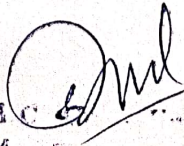
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Assistant Professor, M.J.M. ACS College, Karanjali, Tal-Peth,
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Chapter - 3

Modification & Significance of Catalysis

Dr. Deepak Tayde and Rohit Nikam

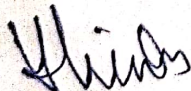
Abstract

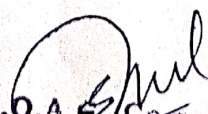
In this 20th century, the world is very fast and everyone doesn't have enough time to do time consuming work. As per today's need to develop a new modification methods to expedient catalysis which is having the capacity to do multi component reaction in one step with reducing the rate of chemical reaction and have ease of performance, high yield, and especially synthetic feasibility and efficiency.

Keywords: Catalysis, modification, activity, application

Introduction

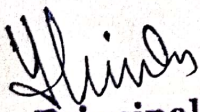
Nature is comprehensible through observation and study. The observation lies in deep knowledge of different branches of nature like science and technology, arts and humanity, engineering and astronomy, commerce and agriculture. Science can be easily understood with the help of nature. Organization of knowledge in systemic way is the key indicator of serving nature through human efforts [1]. The science is divided into many branches and sub-divisions such as physical sciences like Chemistry and Physics, life sciences like Botany and Zoology, environmental sciences like Geology and Oceanography along with nuclear science, engineering and technical science based branches and pharmaceutical science. Among all Chemistry plays central role in the study of basic concept in science and technology and often interlinked with other subdivisions. Chemistry plays vital role in daily life and it will have very much better future in basic and applied sciences [2, 3, 4]. Chemistry is the disciple of science which deals with composition, interactions of molecules and their transformation. As per the Roald Hoffmann said that "Chemistry is the science of molecules and their transformations. It is the science not so much of the one hundred elements, but of the infinite variety of molecules that may be built from them..." [5]. The definition itself implies the fundamental and technical importance of chemistry. Definition of above chemist fortify the all branches of chemistry

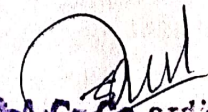

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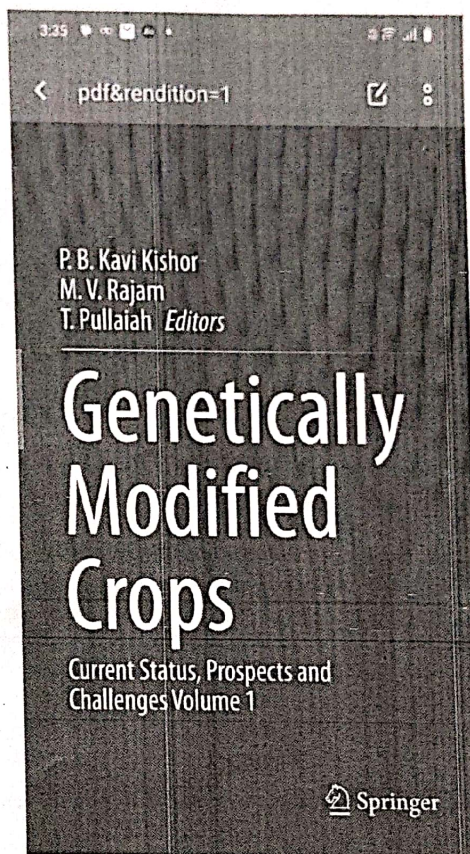

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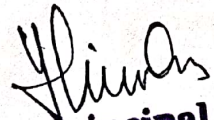


Genetic Engineering in Safflower (*Carthamus tinctorius* L.): Retrospect and Prospect

Kirti M. Nitnaware, Vikas B. Naikawadi, Smita S. Chavan,
Deepak B. Shelke, Rajkumar B. Barmukh, Archana A. Naik,
and Tukaram D. Nikam

Abstract

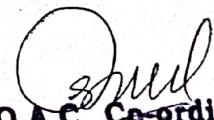
Safflower (*Carthamus tinctorius* L., Asteraceae) is an important edible oilseed crop. Because of the distinct seed oil profile, high α -tocopherol content, utilization as a leafy vegetable and useful petal pigments, it has special value among oilseed crops and is of much scientific interest. Recently, safflower has been improved for agronomical, nutritional and other traits with the introduction of specific genes from safflower and also other sources. The prerequisite for successful transformation is development of an in vitro propagation protocol, transformation method and gene of interest. Variation exists in regeneration frequency via organogenesis or somatic embryogenesis in different genotypes of safflower. Therefore, standardization of regeneration protocol is necessary for each genotype before gene transformation. Among different explants, cotyledons and api-


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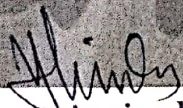
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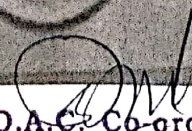

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६) सामन्यात गुण कमी असल्यास करावयाचे डावपेच

याशिवाय एकलंगी टांग, आतली व बाहेरील टांग, मुलतानी, धोबीपछाड, घिस्सा, पट काढणे, स्वारी, कलाजंग ही कुस्तीतील प्रमुख डावपेचांची नावे आहे.

१०. भारताची ऑलिम्पिक क्रीडा सामन्यांतील कामगिरी

इ. स. १९२० साली सर दोरबाजी टाटांच्या सक्रीय सहानुभूतीने काही कुस्तीगीर व खेळाडू अँटवर्प ऑलिम्पिक सामन्यासाठी गेले होते. त्यावेळी शिंदे यांनी कुस्तीत थोडी चुणूक दाखवली. त्यानंतर इ. स. १९४८ च्या लंडन ऑलिम्पिक क्रीडा सामन्यात भारताच्या खाशाबा जाधवांनी फ्री-स्टाईल कुस्तीच्या फ्लायवेट गटात दोन कुस्त्या जिंकून सहावा क्रमांक मिळविला. पुढे इ. स. १९५२ च्या हेलसिंकीच्या ऑलिम्पिक सामन्यात मात्र खाशाबा जाधवांनी बॅटमवेट गटात तिसरा क्रमांक मिळवून भारताला एकमेव कांस्य पदक मिळवून दिले. त्याच स्पर्धेत के. डी. मानगावे यांचा पाचवा क्रमांक मिळविला. इ. स. १९६२ साली झालेल्या आशियाई कुस्ती स्पर्धेत मारुती माने व सतपाल यांनी सुवर्ण पदक मिळविले. इ. स. १९५६ च्या मेलबर्न ऑलिम्पिक स्पर्धेत बी. सिंग यांनी एक कुस्ती जिंकली.

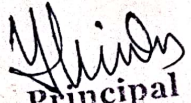
इ. स. १९६० च्या रोम येथील ऑलिम्पिक स्पर्धेत उदयचंद, ग्यान, एस. श्याम, महादेव सिंग यांनी भारताचे प्रतिनिधित्व केले. इ. स. १९६४ च्या टोकीओ सामन्यात फ्री-स्टाईल कुस्तीत भारताचे विश्वंभर सहावे आले. गणपत आंदळकर, मारुती माने, जीतसिंग, माधो सिंग, बंडू पाटिल व मालवा हे तिसऱ्या व चौथ्या फेरी पर्यंत गेले पण पुढे यश मिळू शकले नाही. ग्रीको-रोमन पद्धतीच्या कुस्तीत विश्वंभर तिसऱ्या फेरीत तर मालका दुसऱ्या फेरी व इतर पहिल्याच फेरीत बाद झाले या नविन पद्धतीच्या कुस्त्यांची माहिती नसल्यामुळे काहीना दुखापत झाल्या. इ. स. १९६८ च्या मेक्सिको ऑलिम्पिक मध्ये कुस्तीगीरांना विशेष कामगिरी करता आली नाही.

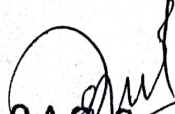
भारताला १९५२ नंतर २००८ साली बीजिंग ऑलिम्पिक मध्ये सुशील कुमार यांनी कांस्य पदक मिळविले. त्यानंतर २०१२ च्या लंडन ऑलिम्पिक मध्ये सुशील कुमार यांनी रौप्य पदक तर योगेश्वर दत्त यांनी ही कांस्य पदक मिळवून भारताला यशाच्या शिखरावर पोहचविले. २०१६ साली रियो दि जेनरियो ऑलिम्पिक मध्ये साक्षी मलिक ने कांस्य पदक मिळवून इतिहास घडविला. गेल्या १५ वर्षा पासून भारत आंतरराष्ट्रीय स्तरावर कुस्ती खेळात सातत्याने पदके देत असल्याने देशाला या खेळा कडून अपेक्षा वाढलेल्या दिसून येतात.

प्रा. दिपक जुंदे

क्रीडा संचालक

(२९)


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He/She has presented a paper entitled "मशीन वेट प्रशिक्षण कार्यक्रमाच्या खेळाडूंच्या कबरेखालील स्थिरता व गतिशीलता या घटकावर होणारा परिणामाचा अभ्यास" And published in an International B. Aadhar Peer_Reviewed & Refereed Index Multidisciplinary International Research Journal, Impact Factor (SJIF) 7.675 Issue Number 313 ISSN 2278-9308.

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मशीन वेट प्रशिक्षण कार्यक्रमाच्या खेळाडूंच्या कबरेखालील स्थिरता व
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दिपक भगवान जुंद्रे
शारीरिक शिक्षण संचालक एम जे एम कॉलेज करंजाळी तालुका पेठ
जिल्हा नाशिक

सारांश

सदर संशोधनात संशोधकाने विविध खेळातील खेळाडूंच्या कबरे खालील स्थिरता व गतिशीलता या घटकावर मशीन वेट प्रशिक्षणाचा होणारा परिणामाचा अभ्यास आहे. या संशोधनासाठी पेठ तालुक्यातील एम.जे.एम. महाविद्यालयातील २५ वर्षांआतील ३० खेळाडूंची सठेवुक पद्धतीने निवड करण्यात आली खेळाडूंचे दोन समान गटात विभाजन करण्यात येणार असून प्रत्येक गटात १५ असे दोन समान संख्यांच्या गटात विभागणी करण्यात आली. याराठी प्रायोगिक संशोधन पद्धतीतील दोन गट पुर्व चाचणी व उत्तर चाचणी या अभीकल्पानुसार प्रशिक्षण कार्यक्रम सुरु होण्यापुर्वी व प्रशिक्षणानंतर खेळाडूंच्या कबरे खालील स्थिरता आणि गतिशीलता मोजण्यासाठी एफ.एम. एस. कसोट्यांचा वापर करण्यात आला त्यासाठी ओव्हरहेड डिप स्कॉट या प्रमाणित कसोटी घेण्यात आली. सहा आठवडे प्रत्येक आठवड्याला सहा दिवस या प्रमाणे स्थिरता आणि गतिशीलतेसाठी मशीन वेट प्रशिक्षण हे उपचार प्रशिक्षणाच्या तत्त्वानुसार देण्यात आले व नियंत्रीत गटाला ते पुर्वीपासून करत असलेले प्रशिक्षण घेत राहतील. सहा आठवड्यांनंतर दोन हि गटांची पर्याय चाचणी घेतली. पुर्व व पर्याय चाचणी मध्ये संकलीत केलेल्या माहितीचे विश्लेषण व अर्थनिर्वचन करण्यासाठी इंडीपेण्डंट टि-टेस्ट व वन वे ऑनोव्हा या संख्याशास्त्रीय तंत्राचा वापर केला असाता. मशीन वेट प्रशिक्षणाचा खेळाडूंच्या ओव्हर हेड डिपस्कॉट या कसोट्यांच्या कार्यमाना मध्ये ०.०५ या सार्थकता स्तरावर सार्थक फरक दिशून आला नाही. मशीन वेट प्रशिक्षण हे कबरे खालील स्थिरता आणि गतिशीलता वाढविण्यासाठी उपयुक्त नाही.

महत्वाचे शब्द: मशीन वेट प्रशिक्षण, स्थिरता, गतिशीलता.

प्रस्तावना

सद्यस्थितीत कार्यात्मक प्रशिक्षण देण्याकरिता वैविध्यपूर्ण आणि योग्य प्रकारचे साहित्य बाजारात विक्रीसाठी मुबलक प्रमानात उपलब्ध असल्यामुळे नेमके कोणते साहित्य घ्यावे? त्या साहित्याचा वापर कसा करावा? या बाबत संभ्रमाग्रस्था निर्माण झालेली आहे. वेगवेगळ्या साहित्याच्या साहाय्याने वैविध्यपूर्ण आणि मनोरंजनात्मक वातावरणात कार्यात्मक प्रशिक्षण देता येणे शक्य असले तरीहि बहुता साधारण आणि सुगम प्रकारच्या साहित्याच्या सहाय्यानेच कार्यात्मक प्रशिक्षण दिले जाते. हे सार्वभुत आहे योग्य प्रकारे वापराचे आणि आयोजनाचे ज्ञान असल्यास भूपवेन्दार साहित्याची आवश्यकता नसते. कारण खरे पाहता आपले शरीर हेच कार्यात्मक प्रशिक्षणासाठी सर्वोत्तम साहित्य असते. खेळाडूंना त्यांची शारीरिक तंदुरुस्ती सर्वकाळ चांगली ठेवण्यासाठी आणि आदर्श अशा मानकाचे अचलन अशा उपकरणांची चर्चा प्रस्तुत घटकात करण्यात आली आहे.



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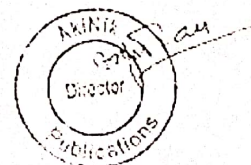
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To,
Dear Dr. Avinash Shivaji Jondhale

This certificate confirms that Dr. Avinash Shivaji Jondhale is the author of book chapter titled "Genetic Improvement of Therapeutically Active Compounds in Selected Medicinal Plants" of published book entitled "An Introduction to Plant Biology (Volume - 1)" having ISBN 978-93-90420-77-3.

Yours Sincerely,

Akhil Gupta



Akhil Gupta
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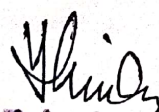
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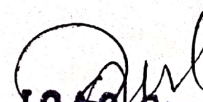
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CHEMICALLY DEPOSITED CuI THIN FILMS AND ITS PROPERTIES

Materials have received immense attention due to their wide applications in various fields of science and technology and can be classified as metals, polymers, ceramics, composites, semiconductors, bio-materials and nanomaterials. Materials science is a broad field and can be considered to be an interdisciplinary area. Included within it are the studies of the structure and properties of any material, the material engineering to suit the needs of specific application. In this book we have presented detail study of the growth, Optimised preparative parameters, structural, optical, and electrical properties of CuI thin films are deposited using modified chemical bath deposition (M-CBD) technique and chemical bath deposition (CBD) techniques. In addition to this the analysis by The various experimental characterization techniques like X-ray diffraction (XRD), scanning electron microscopy (SEM), energy dispersive X-ray analysis (EDAX), optical absorption, electrical resistivity, thermoemf measurement techniques, PEC Property in dark and after illumination of light are given here.

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**CHEMICALLY DEPOSITED CuI THIN
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**“CHEMICALLY DEPOSITED
CuI THIN FILMS AND IT'S PROPERTIES”**

By

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Department of Physics,
S.V.S.'s Dadasaheb Rawal College
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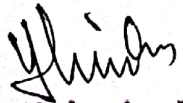
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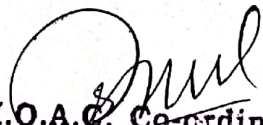
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*Dedicated with great
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Late Bansilal Ravji Ahirrao*


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This is to certify that Dr./Mr./Miss/Mrs. Deepak Totaram Tayde of Dept. of Chemistry, M.J.M. ACS college, Karanjali has actively participated as Delegate / as a Resource Person / Chaired the session / Worked as local organizing committee member / presented a paper (Oral/Poster) / entitled Synthesis of series of In_2O_3 - SiO_2 nanocrystalline material in the State Level Seminar on "INNOVATIVE NANO MATERIAL'S HAS BETTER FUTURE IN EMERGING BASIC SCIENCES - INBFEBs - 2020" Sponsored by Board Of Deans, Savitribai Phule Pune University, Pune & organized by Department of Chemistry, MAHANT JAMNADAS MAHARAJ ARTS, COMMERCE AND SCIENCE COLLEGE, At Po. Karanjali, Tal. Peth, Dist. Nashik, Maharashtra held on 20th - 21st January, 2020.

His/Her contribution to the conference is highly appreciated.

DR. D. T. TAYDE

(Co-ordinator & Head, Department of Chemistry)

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Synthesis of series of In_2O_3 - SiO_2 nanocrystalline material by hydrothermal method

Deepak T Tayde, Machhindra K. Lande

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Department of chemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad-431 004, India.

Abstract: The series of In_2O_3 - SiO_2 binary metal oxide is prepared by hydrothermal method. The crystalline size of binary metal oxide is calculated by x-ray diffraction techniques with the help of (h k l) parameters of material. The particle size of the material shown is various properties which is calculated by Debye-Scherrer Equation.

Keywords: Synthesis, Hydrothermal method, XRD.

Principal

M.J.M. Arts, Commerce & Science College Karanjali, Tal-Peth, Dist. Nashik
1. INTRODUCTION
Nowadays, developments of environmentally benign protocols have been gaining an importance in chemical processes. Generally, organic chemical reactions are carried out using inorganic acids such as H_2SO_4 , HCl , and HNO_3 as well as on the other hand by using Lewis acids like AlCl_3 and BF_3 [1,5]. Despite its high selectivity, these homogeneous classical acid catalysts suffer from several disadvantages like high toxicity, corrosive nature and generation of maximum waste, tedious recovery and difficult to reusability of catalyst. The important concept of environmental and economic aspects, it is necessary to replace these toxic acid catalysts by newer solid heterogeneous catalysts as an excellent alternative source over the ordinary acid

stability and loss its catalytic activities at high temperatures [11-17].

Oxide materials are good component for various scientific applications because of their flexible physical properties. Metal oxide containing catalytic material is show good catalytic activity over a wide range of temperatures and more resistant to thermal path. Those oxide materials are having low-dimensional forms or nano in size are particularly demanded for manufacturing small devices. One-dimensional (1D) metal oxide nanostructures with good crystallinity are have good building blocks for construction of functional device [18-24].

The macro and micro porous nature of indium oxide (In_2O_3) can be considered as promising material for the development of these devices because of their conductive and optical properties [25-31]. The development

I.Q.A.C. Co-ordinator
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optoelectronic and electronic devices [34-39]. To enhance the catalytic applications invarious reactions or to increase their functionalities, indium oxide semiconductors are usually doped with other elements [40-47]. Physico-chemical properties of In_2O_3 and SiO_2 metal oxides are motivate us to prepare binary mixture of In_2O_3 - SiO_2 catalyst [48-50]. Mixed metal oxides exhibit strong surface acidity like Bronsted and Lewis acidic sites due to the generation of excess negative or positive charge in the model structure of the binary oxides [51].

1.1 EXPERIMENTAL

1.1.1 SYNTHESIS OF SERIES OF In_2O_3 - SiO_2 MIXED METAL OXIDE BY HYDROTHERMAL METHOD.

The In_2O_3 - SiO_2 mixed metal oxides were prepared by hydrothermal method. It was prepared from the aqueous solution of InCl_3 and tetraethyl orthosilicate (TEOS) in 5 mL of ethanol to taken in separate beakers respectively. Mixed these two solutions thoroughly in an autoclavable bottle with constant stirring followed by the addition of 1gm cetyl trimethyl ammonium bromide (CTAB) as structural directing agent. This solution was then hydrolyzed by 10 mL 1:1 aqueous ammonia (aq. NH_3) with constant stirring until the PH of solution reached to 9-10. Pale Yellowish precipitate formed, was transferred to the teflon beaker in autoclave. This reaction mixture was heating up to 150°C with 400 rpm at 58 psi naturally generated pressure with constant stirring of 24 h. After drying at 110°C for 7 h in an oven, the obtained powder was pulverized

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Studies On Variation in Nanostructures & Their applications.
in the State Level Seminar on "INNOVATIVE NANO MATERIAL'S HAS BETTER FUTURE IN EMERGING BASIC
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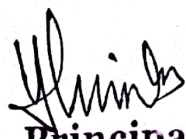
Studies on variation in Nanostructures and Their applications

N. J. Gawali, A. S. Walavane, Y. P. Bhoje, A.D. Nimbalkar, T.A.Kapdane and M. S. Shinde
Dept. of Physics, M.J.M. Arts, Commerce & Science College Karanjali (Peth),
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ABSTRACT:

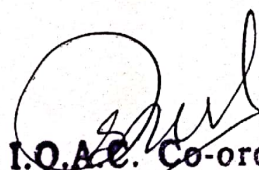
Nanotechnology is the science of designing, producing, and using structures and devices having one or more dimensions of about 100 millionth of a millimetre (100 nanometres) or less. The Nanostructures have different shape and variety of geometrical structures like Gradient multilayer nanofilm (GML nanofilm), Icosahedral twins, Nanocages, Magnetic nanochains, Nanocomposite, Nanofabrics, Nanofiber, Nanoflower, Nanofoam, Nanohole, Nanomesh, Box shaped, Nanoparticle, Nanopillar, Nanopin film, Nanoplatelet, Nanoribbon, Nanoring, Nanorod, Nanosheet, Nanoshell, Nanotip, Nanowire, Nanostructured film, Self-assembled, Quantum dot, Quantum heterostructure, Sculptured thin film, Nano Water Cube. Here we have discussed the novelty of Nanostructures by distinguishing between different levels and aspects of nanotechnology.

Keywords :- Nanotechnology, Nanoparticle, Nanopillar, Nanopin film, Nanoplatelet, Nanoribbon,



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Studies on Novelties of variation in Carbon nanostructures and Their applications

J. P. Gawali, S. P. Walzade, V. M. Bhoje, A.D. Nimbalkar, T.A.Kapdane and M. S. Shinde
Dept. of Physics , M.J.M. Arts, Commerce & Science College Karanjali (Peth),
Dist-Nashik - 422 208 (M. S.) India.

ABSTRACT:


Carbon nanoparticles are produced by different techniques with different particle shape or geometry. Many techniques, including both top-down and bottom-up approaches, have been developed and applied for the synthesis of nanoparticles. Topdown approaches include milling or attrition, repeated quenching and lithography. Attrition can produce nanoparticles ranging from a couple of tens to several hundreds nanometers in diameter.

Carbon nanostructures (CNS) are currently the most advanced nanotechnology structures with a variety of forms: fullerenes, carbon nanotubes (CNTs), carbon nanofibers (CNFs), graphene, CNTs are tubes made of a single sheet of grapheme (single wall carbon nanotubes, SWCNTs) or more sheets (multi-wall carbon nanotubes, MWCNTs). Carbon nanoparticles, Carbon nanocone, Carbon nanofibers, Carbon nanochains, nanotubes and nanodiamonds, are considered as promising building blocks for the construction of novel nanomaterials. Carbon nanomaterial have emerging applications in industrial technologies, such as molecular electronics, advanced optics or storage of hydrogen as a potential source of energy. In addition, for biomedical applications, such as photodynamic therapy against tumors and infectious agents, quenching oxygen radicals, biosensor technology, simulation of cellular components, such as membrane pores or ion channels, as well as controlled drug or gene delivery, Here we have discussed the novelty of carbon Nanostructures and their applications.

Keywords :- carbon nanotubes, graphene, Carbon nanocone, Carbon nanofibers.



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Magur (Clarias gariepinus) fish banned in India.
in the State Level Seminar on "INNOVATIVE NANO MATERIAL'S HAS BETTER FUTURE IN EMERGING BASIC SCIENCES - INBFBS - 2020" Sponsored by Board Of Deans, Savitribai Phule Pune University, Pune & organized by Department of Chemistry, MAHANT JAMNADAS MAHARAJ ARTS, COMMERCE AND SCIENCE COLLEGE, At Po. Karanjali, Tal. Peth, Dist. Nashik, Maharashtra held on 20th - 21st January, 2020.

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Magur (*Clarias gariepinus*) fish banned in India

Bondage S.D.¹ Mangesh Avad²

¹Dept. of Zoology and Fishery, Dayanand Science College, Latur

²Dept. of Zoology, Mahant Jannadas Maharaj Arts, Commerce and Science College, Karanjali

Abstract: The African sharp tooth catfish was introduced all over the world in the early 1980s for aquaculture purposes, so is found in countries far outside its natural habitat, such as Brazil, Vietnam, Indonesia, and India. It has slippery, slimy skin, and has no scales at all, a nocturnal fish like many catfish. It feeds on living, as well as dead, animal matter. Because of its wide mouth, it is able to swallow relatively large prey whole. His body color automatically becomes a black and white mosaic. It has been known to take large water birds such as the common moorhen. It is also able to crawl on dry ground to escape drying pools. Further, it is able to survive in shallow mud for long periods of time, between rainy seasons. The catfish, *Clarias gariepinus* commonly known as Magur, has declined drastically from natural habitats in India during the last decade. This fish is highly preferred fish by Indian consumers and has high market demand. It is banned in various countries of all over world due to its side effects.

Keywords: *Clarias gariepinus*, Banned, Market, Demand.

Prevalence of anemia among different age group girls form Karanjali village

N.R.Giri and P.T.Wankhadkar

Department of Zoology, MJM ACS College, Karanjali.

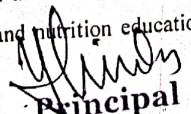
Abstract: Anemia is one of the most widespread nutritional problems among all vulnerable group. Approximately more than 56% of the girls suffering from anemia all over all world including India. The nutritional status as well as the hemoglobin levels among girls has been very low as compared to developed countries. Low consumption of iron rich foods and faulty dietary pattern of developing countries attributes to this problem.

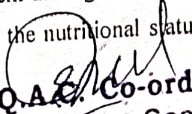
Objectives:- keeping this view in mind the present study was designed to assess the prevalence of anemia among Karanjali village.

Methodology:- study was carried out on residing in karanjali village.

Result:- overall prevalence of anemia was very low out of total were mild anemic is moderately anemic.

Conclusion:- The present study revealed that anemia is major health problem among the Karanjali village continuous follow up program and nutrition education can improve the nutritional status of girls.


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Mannich Type Synthesis of Thiazole Derivative by Conventional Method.
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Ethno-Botanical Exploration and Antibacterial Activity of *Butea monosperma* (Lam) Flower Extract

Ashok N. Chaudhari and Manoj T. Patil*

Post Graduate Department of Botany

SNJB's KKHA Arts, SMGL Commerce & SPJ Science College, Chandwad, Nashik (MS)

*Corresponding Author: manojtpatil@gmail.com

Abstract: It is evident that without nature human life is impossible. *Butea monosperma* (Lam) Kuntze plants belongs to the family Fabaceae commonly called as Palash, Dhak, Palas or Flame of forest because of its vibrant red color flower. Due to the potential therapeutic value, easy availability and mode of action, this medicinal plant has attended more pharmacological exploration in modern medicinal practices. It has the great ethanobotanical importance. Commonly it is used as tonic, astringent, aphrodisiac and Diuretics. The Present study designed to screen antibacterial activity of methanolic flower extract of *Butea monosperma*. The methanolic extract was tested against *Echerichia coli*, *Bacillus subtilis*, *Staphylococcus aureus*, and *Psuedomonas aeruginosa* using agar well diffusion method and shows high antimicrobial activity. The present investigation revealed that *P. aeruginosa* and *E. coli* are highly sensitive against flower extract.

Keywords: *Butea monosperma*, Ethanobotanical importance, Methanolic extract, Antibacterial activity.

Mannich Type Synthesis Of Thiazole Derivative By Conventional Method

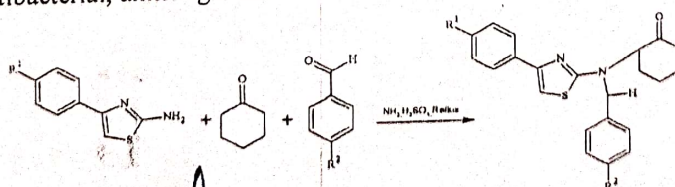
Atul Tidke^{a*}, Ravindra Waghachure^a, Santoshi Raut^b, Arif Pathan^b

Department of Chemistry^a, M.J.M.A.C.S.College Karanjali, Tal. peth, Nashik.

Department of Chemistry^b, MaulanaAzad College, Rauza Baugh, Aurangabad.

atultidke85@gmail.com

Abstract: The one pot Mannich type condensation of substituted thiazole derivative, cyclohexanone and substituted benzaldehyde in Bronsted acidic quaternary ammonium sulphated ionic liquids work as dual solvents as well as catalyst. Compound synthesized both convenient and non-convenient method. The synthesized compound shows various biological activity like antibacterial, antifungal etc.



Keywords: Thiazole, cyclohexanone, substituted benzaldehyde.

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Synthesis and Characterization of Silver Nanoparticles of fruit extract of *Casuarina equisetifolia*

Mahesh Sonawane, Vikram Gaikwad, Chaitali Jagtap, Madhuri Aher, Rakesh Sancheti and Arvind Patil
SNJB's K.K.H.A. Arts, S.M.G.L. Commerce & S.P.H.J. Science College, Chandwad, Dist. Nashik-423101.

Abstract: Synthesis of silver nanoparticles using biological extract is known to have a big impact on numerous researchers for a long time. Recently the biosynthesis of silver nanoparticles is having much importance in developed countries due to development demand of environmental friendly technology of material synthesis. The use of green chemistry is environment friendly, non-toxic and cheap. These things made researchers to focus on the green synthesis field of silver nanoparticles and its applications. *Casuarina equisetifolia* is an tree species which serves as store house of several potential phytoconstituents. The present study aims to explore the role of these potential biomolecules as an effective reducing agent in the synthesis of silver nanoparticles using aqueous fruit extract of *Casuarina equisetifolia*. Optimization of various parameters such as temperature, time, pH for incubation and stability was done. Characterization of silver nanoparticles was carried out by different methods such as UV-Vis spectroscopy, FTIR analysis, TEM micrograph study and by X-ray diffraction.

Keywords: Silver nanoparticle, Biological extract, Biosynthesis, Green synthesis.

Studies on Nanocrystalline Cadmium zinc sulphide (Cd-ZnS) thin films Prepared By simple Chemical Route

T.C.Gaikwad¹ and M. S. Shinde²

Dept. of Chemistry¹ & Physics², M.J.M. Arts, Commerce & Science College Karanjali
(Peth), Dist-Nashik - 422 208 (M. S.) India.

Abstract: Nanocrystalline Cadmium zinc sulphide (Cd-ZnS) thin films have been grown on glass surface by simple chemical bath deposition method (CBD). The optimized preparative parameters including temperature, deposition time, pH of solution have been optimized for fine nanocrystalline film growth. As deposited nanocrystalline Cadmium zinc sulphide (Cd-ZnS) thin films have been made characterized for the structural, surface morphological, optical and electrical properties using X-ray diffraction (XRD), Scanning electron microscopy (SEM), UV-VIS Spectra and d.c. two point probe method.

Keywords :- Nanocrystalline thin films, Cd-ZnS, CBD, XRD, SEM, optical and Electrical properties

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Magur (*Clarias gariepinus*) fish banned in India

Bondage S.D.¹ Mangesh Avad²

¹Dept. of Zoology and Fishery, Dayanand Science College, Latur

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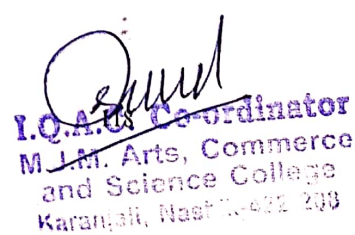
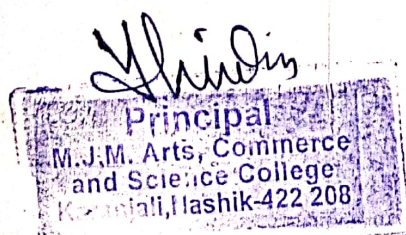
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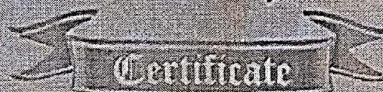
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Innovative Nanomaterials in Emerging Basic Sciences and their applications: An Overview

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Abstract: Nanomaterials (NMs) are the materials set of substances where at least one dimension is less than approximately 100 nanometers. Some NMs are naturally blended with standard materials. The applications of NMs resides in insulation materials, low cost flat panel displays, elimination of pollutants, military goods materials, construction materials, water purification plants, controlling aquatic pollution, waste water treatment, drug delivery vehicles, energy and environment, electronics, health and medicine with the help of zero dimensional quantum dots, one dimensional nanotubes and two dimensional graphene. These materials with unique structures and features have expanded the field of nanomaterials. The NMs are useful in the manufacture of scratchproof eyeglasses, anti-graffiti coatings, stain fabrics, ceramic coatings for solar cells. NMs discover many applications in science and technology through preparation of methods like sol-gel synthesis, micro-emulsions, chemical co-precipitation, Inert-gas condensation, mechanical alloying or high energy ball milling, plasma synthesis, electro-deposition, template method, pulverization method.

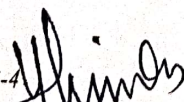
Keywords: Nanomaterials, applications, science and technology, Methods etc

1. INTRODUCTION

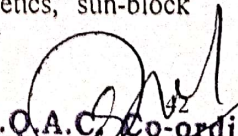
Nanomaterials are the blocks of nanoscience and nanotechnology. NMs have been widely accepted in research and development through many applications. A nanometer is 100000 times smaller than human hair. At this scale optical, magnetic, electrical, and other properties come out and this properties discovers many applications in elimination of

pollutants, military goods materials, construction materials, water purification plants, controlling aquatic pollution, waste water treatment, drug delivery vehicles, energy and environment, electronics, health and medicine with the help of zero dimensional quantum dots, one dimensional nanotubes and two dimensional graphene [1]. The Materials of nanoscale titanium dioxide finds applications in cosmetics, sun-block

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INNOVATIVE NANO MATERIAL'S HAS BETTER FUTURE IN EMERGING BASIC SCIENCES (INBFEBs - 2020)

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This is to certify that Dr./Mr./Miss/Mrs. **smita P. chavan**
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Nanotechnology Application in Agriculture
in the State Level Seminar on "INNOVATIVE NANO MATERIAL'S HAS BETTER FUTURE IN EMERGING BASIC
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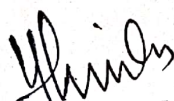
Nanotechnology Application in Agriculture

Jondhale A.S. & Chavan S.P.

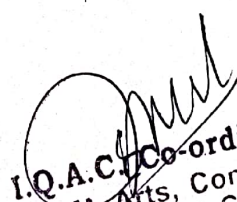
Dept.of Botany, MJM ACS College, Karanjali, Peth, Nashik

Abstract: Agriculture is the backbone of the most developing countries, with more than 60 % population dependent on it for survival. But now days there are so many challenges facing the agriculture sector like climate changes, soil infertility, over use of chemical fertilizers, pesticide residue, different diseases and pests, low crop productivity etc. To overcome this problem the nanotechnology is the good solution presently. Nanotechnology is the science, engineering and technology conducted at the nanoscale which is about 1 to 100 nm. The application of nanomaterials in Agriculture particular to reduce application of plant protection products, minimize nutrient loss in fertilization and increase yield through optimum nutrient management. Recently nanomaterials use in agriculture as nano fertilizer for balance crop nutrition, crop improvement, plant protection ingredients, weed management, nano pesticides, seed technology, plant growth regulators, soil management, food technology and monitoring the identity of agricultural produce. So, present study focus on the application of nanotechnology in Agriculture.

Keywords: Agriculture, Nanomaterials, Fertilizers and Nanotechnology.


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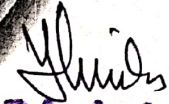
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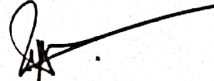
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studies for grain yield and yield components in Rabi Sorghum


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OP-71

**SURVEY OF MEDICINALLY IMPORTANT WEEDS FROM KOPARGAON REGION, DISTRICT-
AHMEDNAGAR (M.S.), INDIA**

R. R. Sanap

R. B. Narayanao Borawake College, Shirampur, Dist. Ahmednagar
(E. mail: rrsanap64@gmail.com)

ABSTRACT

Weeds are unwanted plants growing in the field. Weeds causes the serious problem to the farmers. They absorb the nutrients from the field, growing vigorously and ultimately affect the production. But some weeds are used as crude drugs by many people. Folklore medicinal plants constitute a group of therapeutically important crops which are of great value for domestic use and also for export. Plant based drugs are being increasingly preferred in medical science. The use of various parts of plants has very specific capacity to cure human diseases. We are fortunate to have rich heritage in the form of folklore medicine about medicinal plants. A history of medicinal plants is intimately connected with history of botany. Primitive man who was in constant terror of diseases. From remote past medicine men "Vaidya", and Vaidas" tribal priests used various plant and animal organs in preparation of crude drugs. The survey of medicinally important weeds was carried out from Western region of Kopargao during the year 2018 to 2019. The present studies revealed that near about 44 species belonging to 21 families were found in this region. Plant identification was carried out by various floras and manuals. Most of these weed plants recorded are used by people to cure various diseases. Some plants are aromatic and also used in medicines. The various parts of plants such as roots, stems, leaves, flowers, fruits, seeds, rhizomes, tubers lattices or sometimes entire plant is used as medicines to cure various diseases. These therapeutically important plants constitute various active principles which cause the physiological effect on the body and cures the diseases.

Key words: Survey. Medicine, weeds, flora, Kopargao

OP-72

HETEROSIS STUDIES FOR GRAIN YIELD AND YIELD COMPONENTS IN RABI SORGHUM
[*Sorghum Bicolor* (L.) MOENCH.]

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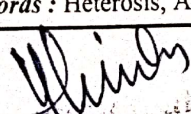
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³Associate Director of Research ZARS, Igatpuri, MPKV, Rahuri, Ahmednagar, Maharashtra.

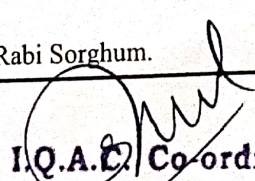
ABSTRACT

The present investigation was conducted to assess the magnitude of heterosis of rabi sorghum (*Sorghum bicolor* (L.) Moench) developed by crossing four lines and twelve testers (in line × tester design) to produce 48 F₁ cross combinations at Sorghum Improvement Project, MPKV., Rahuri, Maharashtra. In order to identify the high yielding Rabi sorghum hybrids, promising hybrids were sorted out based on positive significant standard heterosis for grain yield per plant. Total twenty one hybrids exhibited significant standard heterosis for grain yield per plant. The best cross combination was 104A × RSR 1012 (86.59 %) recorded maximum standard heterosis followed by the cross 104A X RSR 1019 (73.17 %) and 104 A X RSR 1003 (70.73%) for grain yield per plant. Heterosis has been considered as well proven method for increasing yield and for improvement of trait in crops, there of the exploitation of heterosis for the hybrid development programme considered as one of the greatest breakthrough in plant breeding.

Key words : Heterosis, Average Heterosis, Standard Heterosis and Rabi Sorghum.


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Micropropagation of *Centella Asiatica* (LINN) Through Leaf Explants Multiplication

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Dist. Ahmednagar, Maharashtra, PIN- 414 605.

ABSTRACT

Centella asiatica (Lin.) Urban is an important medicinal plant. It is commonly known as Mandookaparni or Indian pennywort. Presently, is mostly used in pharmaceutical industry because in the presence of many bioactive compounds and their demands are increasing day by day. But its propagation rate is very slow and low amount of bioactive compounds. On the basis of market demand of superior plant materials of *Centella asiatica* for its commercial cultivation is increasing. Hence, in the present investigation to study, an attempt has been made to standardize a protocol for rapid shoot multiplication from leaf explants of *Centella asiatica*. For in vitro shoot multiplication on MS medium supplemented with combine and individually in different concentrations of IBA and Kinetin. Finally, it observed that the maximum shoot multiplications (17.72 ± 0.86) were obtained on MS basal medium supplemented with IBA (1.0 mg/l) and Kinetin (3.0 mg/l). Kinetin was found more superior and effective than IBA on supplemented individually in MS medium for shoot multiplication.

Keywords: IBA, *Centella asiatica* and shoot multiplication.

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