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## YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

### CRITERION-III

#### RESEARCH, INNOVATIONS AND EXTENSION

#### 3.3 RESEARCH PUBLICATIONS AND AWARDS

#### 3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings

#### List of Book/Book Chapters/International conference proceedings with website link


#### Index

#### Book Chapter Published In 2021

Sr. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	ISBN number of the proceeding	Name of the publisher
1.	Dr. Ubale S.B.	NA	Chemically Synthesized Yb <sub>2</sub> s <sub>3</sub> Go Composite Thin Films Chemically Deposited Yb <sub>2</sub> s <sub>3</sub> Go Composite Thin Films Application in Supercapacitor	95636566-000	Scholars' Press
2.	Dr. Potdar G.G.	Practical book of botany	NA	978-93-5451-132-5	Nirali Publications
3.	Dr. S.H.Burungale	Advances in Nanomaterials synthesis and their applications	Biosynthesis of Silver Nanomaterials and Its Biological Activity		Integrated Publications
4.	Dr. R.S. Patil	Challenges and Advances in Chemical Science	Study on Synthesis of 1,8-Dioxooctahydroxanthene by Silica Supported Orthophosphoric Acid (H <sub>3</sub> PO <sub>4</sub> •SiO <sub>2</sub> )	978-93-91595-93-7	B P International

  
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As per New Syllabus  
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B.Sc. Part-III : Semester - V & VI

# PRACTICAL BOTANY

(BOTANY : PAPER - IX, X, XI, XII, XIII, XIV, XV, XVI)

Dr. V. B. SHIMPALE

Prof. (Dr.) S. K. KHADE

Dr. S. S. KHOT

Prof. (Dr.) N. A. KULKARNI

Dr. G. G. POTDAR



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## Contents

1. Practical I	1.1 - 1.54
2. Practical II	2.1 - 2.72
3. Practical III	3.1 - 3.44
4. Practical IV	4.1 - 4.58
Annexure - I : Pascal's Triangle	A.1 - A.1
References	R.1 - R.1

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He is working as Associate Professor in department of Botany in the New College, Kolhapur. He has worked as Lecturer in Elphinstone College, Mumbai and in the Centre for Environment Management and Degraded Ecosystems at University of Delhi as Senior Research Fellow (SRF). He has published 60 research papers in reputed and referred journals of Taxonomy and Biosystematics. He has published a reference book 'Flora of Baramati'. Late Housabai Pawar Charitable Trust, Kolhapur felicitated him with 'Best Teacher Award'. He is working as a member of BOS in Botany, Shivaji University, Kolhapur. Recently, Maharashtra State Biodiversity Board has been appointed him as a member of technical support team for Kolhapur District.

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He is working as a Professor and Head in Department of Botany since 1989. He has published 21 research papers in International and National level journals. He has authored and Edited several books on Ecology and Environment with ISSN/ISBN standards. He is worked as a Co-author of prestigious Marathi Encyclopedia "Kumar Vishvakosh". He has offered consultancy on Mangrove Ecology and Remote Sensing to several Government and Non-Government organizations. He has received the Best Teacher Award by several organizations.

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He is working as Professor in Department of Botany since 1989. He is teaching Botany for UG and PG Classes for last 29 years. He has published 46 research papers in National and International journals. He was worked as a Member of Board of Studies in Botany and Senate member in Shivaji University, Kolhapur. Presently he is working as a Member of Faculty in Science and Technology by the Board of Studies in Botany, Shivaji University, Kolhapur.

### Dr. G. G. POTDAR (M. Sc., Ph.D. FIAAT)

He has 14 years experience of teaching to undergraduate classes at Yashwantrao Chavan College of Science, Karad. He completed his M. Sc. (Botany) with specialization in 'Angiosperm Taxonomy' from Shivaji University, Kolhapur and his Ph. D. on 'Taxonomical Studies in Grasses of Maharashtra'. He has published about 16 research papers in journals of repute such as Kew Bulletin, Phytocoenologia, Rheedea, J. Bom. nat. Hist. Soc. and Indian Forester. He authored books such as Grasses of Maharashtra and Know your Grass Genera Through Hand Lens' published by Shivaji University, Kolhapur. He has contributed in discovery of four new species of grasses.

### Dr. S. S. KHOT (M.Sc., Ph.D., SET-Life Sciences)

He is working as Assistant Professor (Botany) at Yashwantrao Chavan Warana Mahavidyalaya, Warananagar and have teaching experience of 14 years at UG and PG level. He has completed M.Sc. from Shivaji University, Kolhapur (MAH) with specialization in 'Cyto-genetics and Plant breeding' and Ph.D. from M.K. Bhavnagar University, Bhavnagar (Gujarat) on 'Eco-physiology of halophytes'. He worked as research fellow for the project sanctioned by Dept. of Ocean Development, New Delhi and completed project funded by UGC. He has published 12 research papers, edited proceedings of conferences and authored articles in Marathi Encyclopedia 'Kumar Vishwakosh'. He has created educational videos for YouTube Channel. He is recipient of 'Best paper presentation Awards' at National and International Conferences.

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Scholars'  
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**Chemically Synthesized  $\text{Yb}_2\text{S}_3$   
@ GO Composite Thin films**

Chemically Deposited  $\text{Yb}_2\text{S}_3$  @ GO Composite  
Thin Films: Application in Supercapacitor





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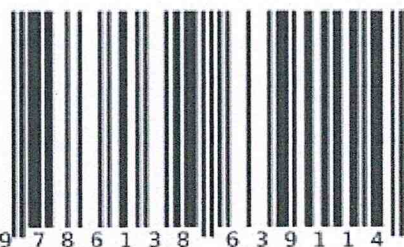
## Chemically Synthesized $\text{Yb}_2\text{S}_3$ @ GO Composite Thin films

In the recent years, rare earth metal (REM) sulfide thin film materials have great attentions due to their unique physical and chemical properties. The porous nanostructured morphology and wide potential window of electrode materials are very important aspects for supercapacitor applications. Therefore, REM sulfides are widely used for gas sensing, photocatalyst, glucose sensing, energy conversion and supercapacitor applications. Among the REM sulfide, ytterbium sulfide ( $\text{Yb}_2\text{S}_3$ ) composite with graphene oxide (GO) is considered as a best candidate for negative electrode material in supercapacitor due to multiple oxidation state, better redox activity, wide potential window and excellent area under the curve.

Present book describes a chemical synthetic approaches of successive ionic layer adsorption and reaction (SILAR) and chemical bath deposition (CBD) method for  $\text{Yb}_2\text{S}_3$  composite with GO thin film electrodes and their application in supercapacitor. This research highlighted crucial role of the synthesis methods on morphology of  $\text{Yb}_2\text{S}_3$  composite with GO electrode materials for supercapacitors.



Dr. Shivaji Ubale received his Ph.D. in Physics from D. Y. Patil Education Society, Kolhapur India under the guidance of Prof. C. D. Lokhande. During his Ph.D., he was awarded by JRF by DST-SERB New Dehli (India) and CSMNRF Govt. of Maharashtra (India). He has published 15 research articles in peer review international journals.



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## Chapter - 2

### Biosynthesis of Silver Nanomaterials and Its Biological Activity

S.H. Burungale, A.V. Mali and R.S. Patil

#### Abstract

In this Chapter well, defined silver nanoparticles were synthesized by using Flower Extracts of *Caesalpinia pulchirrima*. After exposing the silver ions to the Flower Extracts of *Caesalpinia pulchirrima*, the rapid reduction of silver ions led to the formation of stable AgNPs in solution due to the reducing and stabilizing properties of Flower Extracts of *Caesalpinia pulchirrima* juice. The synthesized NPs were analyzed by ultraviolet-visible spectroscopy. The as-synthesized AgNPs were phase pure and well crystalline with a face-centered cubic structure. The antimicrobial activity of the synthesized AgNPs was investigated against *Escherichia coli* and *Pseudomonas aeruginosa* by agar well diffusion method. This newly developed method is eco-friendly and could prove a better substitute for the current physical and chemical methods for the synthesis of AgNPs.

**Keywords:** biosynthesis, silver nanoparticles, *Caesalpinia pulcherrima* flower extract, characterization, anti-bacterial activity

#### 1. Introduction

Nanotechnology has gained huge attention over time. The fundamental component of nanotechnology is the nanoparticles. Nanoparticles are particles between 1 and 100 nanometers in size and are made up of carbon, metal, metal oxides or organic matter [1]. The nanoparticles exhibit a unique physical, chemical and biological properties at nanoscale compared to their respective particles at higher scales. This phenomenon is due to a relatively larger surface area to the volume, increased reactivity or stability in a chemical process, enhanced mechanical strength, etc. [2]. This property of nanoparticles has led to its use various applications. The nanoparticle differs from various dimensions, to shapes and sizes apart from their material [3]. A nanoparticle can be either a zero dimensional where the length, breadth and height is fixed at a single point for example nano dots, one dimensional



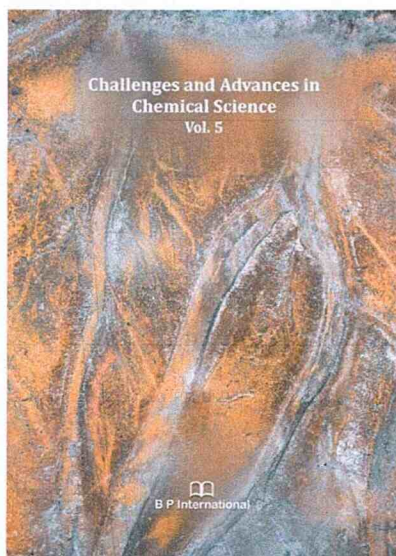


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**Study on Synthesis of 1,8-Dioxooctahydroxanthene by Silica Supported Orthophosphoric Acid ( $H_3PO_4 \cdot SiO_2$ )**

Rahul Shankarrao Patil ; Ankush V. Mali ; Shivaji H. Burungale

*Challenges and Advances in Chemical Science Vol. 5*, 14 September 2021, Page 32-44

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