CURRICULUM VITAE

Dr. Rushiraj Prataprao Bhosale

(*M.Sc., Ph.D.*)

Current Address: 8th A Sadguru Chembers, Visawa Park, Satara -415001, Maharashtra, India.

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Education and Experience

2020-2025 **Ph.D. (Physics)**
Department of Physics, Shivaji University, Kolhapur.

Ph.D. thesis title: ***Chemically Deposited Manganese Ferrite /Reduced Graphene Oxide Thin Films For Supercapacitor Application*** under the supervision of Dr. Vinayak S, Jamadade, Associate Professor. Head Department of Physics, D. P. Bhosale College, Koregaon, Satara- 415501, India.

2018-2020 **M.Sc. (Physics)**
Y. C. Institute of Science, Satara (India)
Post Graduated, First class
Master's dissertation title: ***Synthesis of Manganese oxide thin film by spin coating method*** under the supervision of Dr. S. M. Bhongale, Y. C. Institute of Science, Satara-415001 (India)

2015-2018 **B.Sc. (Physics)**
Y. C. Institute of Science, Satara (India)
Graduated, Second class

Research Awards

2023-2024

- **Senior Research Fellow (SRF)** (SARTHI, Government of Maharashtra, India).

Instruments operator / Expert skill

- X-Ray Diffractometer (Rigaku Miniflex 500)
- Fourier Transformation Infrared Spectroscope (FT-IR, Bruker)
- UV–Visible spectrophotometer (Cary-60 spectrophotometer)
- Electrochemical Workstation (Zive MP1 and VERSASTAT4)

Patents (Granted 03, Published 02)

1. A chemical synthesis process for manganese ferrite thin film and use as electrocatalyst thereof
   (Patent number **415578,** Granted date: **27/12/2022**)
   (**R. P. Bhosale**, S. S. Kumbhar, S. U. Ubale, C. D. Lokhande, V. S. Jamadade)

2. A method of preparation of lanthanium strontium tungsten oxidecomposite electrode for supercapacitor application
   (Patent number **471088,** Granted date: **21/11/2023**)
   (A. A. Mohite, B. T. Jadhav, **R. P. Bhosale**, S. S. Kumbhar, S. U. Ubale, C. D. Lokhande, A. P. Torane)

3. A electrochemical method of preparation of manganese ferritethin films on conducting substrates for energy storage
   (Patent number **504456,** Granted date: **29/01/2024**)
   (**R. P. Bhosale,** P. P. Bagwade, N. L. Tarwal, C. D. Lokhande, V. S. Jamadade)

4. A chemical synthesis process for manganese ferrite thin film nd useas oxygen evolution reaction thereof
   (Application number **202321000100,** Published date: **10/02/2023)**
   (**R. P. Bhosale,** P. P. Bagwade, B. B. Mahanavar, M. S. Bhadane, V. S. Jamadade)

5. Chemical synthesis of manganese ferrite/reduced graphene oxide composite thin film electrodes for energy storage application
   (Application number **202421060274,** Published date: **16/01/2025**)
   (**R. P. Bhosale**, S. S. Kumbhar, A. P. Pardhi, P. N. Chavan, C. D. Lokhande, V. S. Jamadade)

Articles in International Journals (Published 05, Submitted 03)

1) **R. P. Bhosale**, S. S. Kumbhar, P. P. Bagwade, C. D. Lokhande, V. S. Jamdade*, Chemical synthesis of manganese ferrite thin films for energy storage application, **Journal of Materials Science: Materials in Electronics**, 35 (2024) 5, (**I.F- 2.8**).

2) **R. P Bhosale**, S. S. Kumbhar, S. B. Bhosale, R. R. Salunkhe, V. A. Kadam, S. P. Pardhi, S. S. Gholap, C. D. Lokhande, V. S. Jamadade*, Morphology modulation of $MnFe_2O_4$ thin film electrode for enhanced performance of hybrid supercapacitor, **Journal of Energy Storage**, 86 (2024) 111146 (**I.F- 8.9**).

3) **R. P. Bhosale**, S. S. Kumbhar, S. S. Bhosale, A. M. Patil, S. C. Jun, D. S. Gaikwad, V. V. Patil, C. D. Lokhande, V. S. Jamadade**.** Three-Dimensional Controlled Growth of Binder-Free Manganese Ferrite Electrodes for High-Performance Hybrid Supercapacitor Device. **Advances Sustainable Systems**. (2025) 2500067**(I.F. = 6.5)**.

4) P. P. Bagwade, R. P. Nikam**, R. P. Bhosale**, S. D. Khot, C. D. Lokhande, Performance of solid-state symmetric supercapacitors based on Dy_2S_3 electrodes, **Applied Surface Science**. 18 (2023)100529. **(I.F. = 6.04)**.

5) V. A. Kadam, V. L. Patil, **R. P. Bhosale,** S. H. Mujawar, A. P. Torane, L. D. Kadam. Development of binary Rose-Like $CuCo_2O_4$ nanoarchitecture via novel chemical route for electrochemical supercapacitor application, **Material Science & Engineering**

B 313, (2025) 117976 **(I.F. = 4.1)**

6) S. S. Kumbhar, S. B. Bhosale, **R. P. Bhosale**, S. S. Patil, K. G. Belekar, A. M. Ransing, H. Choi, C. D. Lokhande, H. Park, U. M. Patil. Fabrication of 2D Cobalt Vanadium Oxide Microplates with Reduced Graphene Oxide Nanosheets Composite as Advanced Electrode Material for Hybrid Supercapacitors Devices, **Journal of Energy Storage, (Under Review), (I.F-8.9).**

7) S. P. Pardhi, **R. P. Bhosale**, A. R. Dhawale, G. A. Dhomase, Y. B. Khollam M. T. Sarode. Study of Structural and Optical Properties of Zinc Oxide (ZnO) by using Solid State Method. **Journal of Materials Science: Materials in Electronics, (Submitted), (I.F-2.8).**

8) V. A. Kadam, V. L. Patil, R. P. Bhosale, S. H. Sutar, V. B. Ghanwat, S. H. Mujawar, A. P. Torane, L. D. Kadam, Surface engineering of CuCo2O4 nanostructure and their concurrent effect on supercapacitive performance, **ACS Omega, (Under Review), (I.F. = 3.7).**

Presented/Attended, International/ National Conference, Workshop and Seminar

1. Participation in E-National Conference on "Emerging Trends in Chemistry'' (NCETC -2022) organized by the Department of Chemistry and IQAC, Shankarrao Mohite Mahavidyalaya, Akluj held on 10 Feb 2022.

2. Participation in E-International Conference on "Emerging Trends in Nanoscience and Nanodevices'' (ICETNN - 2022) organized by the Department of Physics and IQAC, Vivekanand College, Kolhapur (Autonomous), Maharashtra, India, held on 4 May 2022.

3. **Oral Presentation** at E- International Conference on "Emerging Trends in Materials science" organized by the Department of Physics and Chemistry with IQAC, D. P. Bhosale College, Koregaon, Satara on 9 and 10 November 2022.

4. Participation in one day International Conference on "Recent trends in Fabrication of Nanomaterials and their Application" (ICRTFNA-2023) in association with the Department of Physics and IQAC at Rajarshi Chhatrapati Shahu College, Kolhapur on 15 march 2023.

5. Participation in International conference on Nanotechnology Addressing the Convergence of Materials Science, Biotechnology, and Medical Science (IC-NACMBM-2024) organized by Centre for Interdisciplinary Research, D. Y. Patil Education Society, Kolhapur, on 12 to14 Feb 2024.

6. **Third price** in the University level Avishkar Research Convention 2021-22 at PPG level in Engineering and Technology discipline organized online by Department of Computer Science, Shivaji University, Kolhapur on 11 Feb 2022.

Area of Specialization/Research Interest

- Material Science
- Thin Film
- Supercapacitor
- 2D Materials
- Water Splitting

Personal skill profile

Expertise-

Synthesis of materials

- Synthesis of transition metal oxides, and carbon-based materials (GO and rGO).
- Synthesis of composite materials.
- Synthesis of doping materials.

Synthesis Methods

- Hydrothermal, Chemical Bath Deposition (CBD), Successive Ionic Layer Adsorption and Reaction (SILAR), Electrodeposition, Dip Coating.

Softwares

- X'Pert Highscore Plus, ZView-Impedance, XPS Peak 41, Image J, Gatan, Origin, CrysTbox, .

Research Collaborations (Internationals)

- Prof. Chandrakant D. Lokhande, Dean and Research Director, Centre for Interdisciplinary Research, D. Y. Patil Education Society (Deemed to be University), Kolhapur 416005 .
- Dr. Rahul R. Salunkhe, Department of Physics, Indian Institute of Technology, Jammu-181221, India.
- Dr. Amar M. Patil, Nano- Electro- Mechanical Device Laboratory School of Mechanical Engineering, Yonsei University Seoul, Seoul-120-749, South Korea.

Teaching Experience

- Work as Assistant Professor (CHB) in Y.C. College Science, Karad from 2014-2015 (1 Year)
- Work as Assistant Professor (CHB) in LBS College of Science, Commerce and Arts, Satara from 2015-2020 (5 years)
- Work as Lecturer in Bhavani Vidhya Mandir, High school, Satara from 2016-2017 (1 year)

Extra-curricular activities

- National Judo Player, with black belt 1st Dan
- Volunteering at events like Satara Hill Marathon
- Participation in cultural activities

Personal details

- Date of birth: 05th September1989
- Nationality: Indian
- Category: OPEN
- Sex: Male
- Marital status: Married
- Blood group: A^{+}
- Career objective: Research
- Languages known: English, Hindi, and Marathi

- Permanent address: 8th A Sadguru Chembers, Visawa Park, Satara-415001 (Maharashtra).

Character reference

1. Dr. Vinayak S. Jamadade, Associate Professor, Head Department of Physics, D. P. Bhosale College, Koregaon, Satara 415501, India.
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2. Prof. Chandrakant D. Lokhande
Dean and Research Director, Center for Interdisciplinary Research, D. Y. Patil Education Society (Deemed to be University), Kolhapur-416006, India.
Email-l_chandrakant@yahoo.com
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I hereby certify that the above information is accurate and correct to the best of my knowledge.

Place: **India**

Dr. Rushiraj P. Bhosale