

◆ MODERN EDUCATION SOCIETY'S ◆

NOWROSJEE WADIA COLLEGE, PUNE

FACULTY ACADEMIC PROFILE



Dr. Shrikrushna Shivaji Gaikwad

Assistant Professor in Physics (Ad-hoc)

Highest Qualification: M.Sc., SET, JEST, Ph.D.

Specialization: Physics (Materials Science)

Official College Email: ssgaikwad@nowrosjeewadacollege@edu.in

PROFESSIONAL SNAPSHOT

To pursue a challenging academic and research position where I can leverage my expertise in nanomaterials, functional heterostructures, and advanced materials characterization to contribute to excellence in teaching and research. I aim to develop impactful interdisciplinary research, secure competitive research funding, mentor and guide students, and establish strong national and international research collaborations while contributing meaningfully to institutional growth and academic innovation.

EDUCATION

Qualification	University / Institution	Year
Ph.D.	SPPU, Pune	2025
Research Scholar	National Dong University, Hualien, Taiwan	2011-2015
JEST (93.07 %tile)	ARIES, Nainital	2010
SET	SPPU, Pune	2010
M.Sc.	Department of Physics, SPPU, Pune	2010
B.Sc.	Vidya Pratishthan College, Baramati	2006

TEACHING & ACADEMIC INTERESTS

• **Academic appointments:** Working as an Assistant Professor for Undergraduate and Post Graduation Section since July 2015 to till date at **Nowrosjee Wadia College (AUTONOMOUS), Pune – 411 001.**

RESEARCH DOMAIN:

Materials Science, Field Electron Emission, Energy Storage Devices, Optical and Magnetic Properties of Nanomaterials.

PUBLICATIONS:

- Facile Synthesis of Cu_2O -rGO Nanocomposite with Enhanced Electrochemical Performance as a Supercapacitor Electrode: **Shrikrushna S. Gaikwad***, Sambhaji S. Warule*, Milind D. Babar, Satish K. Pardeshi, Shailendra S. Dahiwal, Mahendra A. More. Accepted on 10th November 2025; Next Materials 10 (2026) 101430.
- Controlled Growth of CuO Nanowires on Cu Grid *via* Thermal Oxidation Process with Enhanced Field Electron Emission Properties: **Shrikrushna Shivaji Gaikwad**, Sambhaji S. Warule, * Mahendra A. More. J Mater Sci: Mater Electron (2024) 35:935 (Springer Nature Publishing).
- Oxygen Induced Strained ZnO Nanoparticles: An Investigation of Raman and Visible Photoluminescence: **Shrikrushna Shivaji Gaikwad**, Ashish Chhaganlal Gandhi, Swarada D. Pandit, Jayashree Pant, Ting-Shan Cheng, Chia-Liang Cheng, Yuan-Ron Ma, and Sheng Yun Wu*. *J. Mater. Chem. C*, 2014, 2, 7264.

BOOK CHAPTER

- CuO Nanowires For Field Electron Emission: **Shrikrushna S. Gaikwad***, Sambhaji S. Warule*, Shailendra S. Dahiwal, Mahendra A. More. Title of book: Innovations in Materials Science: Design, Synthesis, and Applications Volume 6 2026. IIP Series

RESEARCH PROFILE

ACHIEVEMENTS & PROFESSIONAL DEVELOPMENT

- **Award of Fellowship:** National Dong Hwa University fellowship for International Students (Feb. 2011 – Feb. 2015).
- **Annual Meeting 2014, The Physical Society of Republic of China. 21 – 23 January 2014. National Chung Hsing University, Taichung City, Taiwan.** Oral Presentation. (Topic: - *Size effect on Surface Induced Magnetic Anisotropy Gap and Ferromagnetic Surface Spin Polarization in Ag Nanoparticles*: Shrikrushna Shivaji Gaikwad; Ting-Shan Chan; Sheng Yun Wu).
- **The Second Taiwan International Symposium on Raman Spectroscopy and Taiwan Association of Raman Spectroscopy Summer camp 22 – 25 June 2014. National Dong Hwa University, Hualien, Taiwan.** Attended.
- **The honored with The Best Piece of writing in Annual departmental poster competition at NDHU in June 2014.**
- **State Level Workshop on Physics Laboratory Experiments, 9th January 2017, Ahmednagar College, Ahmednagar.** Attended.
- **STEM Teacher Training Workshop on Research Based Pedagogical Tools Level – 1 at Indian Institute of Science Education and Research, Pune; from 26th Feb. - 1st Mar. 2017.** Attended.
- **Fourier Analysis Workshop at Indian Institute of Science Education and Research, Pune; from 19th January to 23rd January 2018.** Attended.
- **Faculty Induction Programme (FIP) was full-time residential programme organized by the Centre of Excellence in Science and Mathematics Education at IISER, Pune under the aegis of MHRD's Pandit Madan Mohan Malaviya National Mission on Teacher and Teaching Scheme, during 30th Oct. 2019 to 23rd Nov. 2019.** Attended.
- **7th International Conference on Nanoscience and Nanotechnology (ICONN-2023) (Virtual Conference) March 27 - 29, 2023. SRM Institute of Science and Technology, Kattankulathur - 603 203, Tamil Nadu, India.** Poster presentation.
- **International Conference on Advanced Materials Synthesis, Characterization and Applications – 2023, Department of Physics, SPPU, Pune, India. 21-23, Nov. 2023.** Oral Presentation]

ACADEMIC RESPONSIBILITIES

- **No. of Project students:** Till date, sixteen (16) UG & PG students.
- **Reviewer for Journal:** Materials Research Express (IOP Science Publishing group), Journal of Inorganic and Organometallic Polymers and Materials, ES Energy and Environment.

PUBLIC WEBSITE PROFILE (PROFESSIONAL):

I am a Ph.D. in Physics from Department of Physics, Savitribai Phule Pune University, awarded in 2025, with research expertise in the synthesis, characterization of metal oxide–reduced graphene oxide (rGO) heterostructures for multifunctional applications. My doctoral research focused on developing functional nanomaterials for energy storage, field electron emission, and antimicrobial applications, resulting in Q1 publications in peer-reviewed international journals.

Prior to my doctoral research, I worked as an International Research Scholar at National Dong Hwa University, Taiwan, from Feb. 2011 to Feb. 2015; where I investigated the optical, magnetic, and electronic properties of nanostructured materials. I have extensive hands-on experience in nanomaterial synthesis and advanced characterization techniques, including FESEM, EDS, XRD, Raman spectroscopy, photoluminescence spectroscopy, UV–Visible spectroscopy, SQUID magnetometry (MPMS), synchrotron X-ray diffraction (NSRRC, Taiwan), and field electron emission measurements. I also have experience in scientific computing and data analysis using C, FORTRAN, Mathematica, and R software.

Since 2015, I have been serving as an Assistant Professor at Nowrosjee Wadia College (Autonomous), Pune, where I teach undergraduate and postgraduate physics students. My current research interests include functional nanomaterials, heterostructures, energy-storage materials, magnetic nanomaterials, optical nanomaterials and nanomaterials for multifunctional applications such as field emitters, energy storage, biomedical etc...

I am particularly interested in developing interdisciplinary and collaborative research, securing competitive research funding, mentoring students, and establishing research-oriented academic initiatives. With experience spanning research, teaching, scientific instrumentation, and academic administration, I aim to contribute meaningfully to excellence in teaching and advanced materials research.

TECHNICAL SKILLS & EXPERTISE

Programming & Scientific Computing	Materials Characterization & Instrumentation
• C Programming • FORTRAN • Wolfram Mathematica • R Programming • Materials Synthesis • Chemical Bath Deposition (CBD) • Microwave-Assisted Synthesis • Thermal Oxidation • Wet Chemical Synthesis of Metal Oxide Nanostructures	• Field Emission Scanning Electron Microscopy (FESEM) <i>(Independent operation)</i> • Energy Dispersive X-ray Spectroscopy (EDS) • MPMS–SQUID Vibrating Sample Magnetometer (VSM) <i>(Independent operation)</i> • High-Energy Synchrotron X-ray Diffraction (National Synchrotron Radiation Research Center, Hsinchu, Taiwan) • Field Electron Emission Measurement System <i>(Independent operation)</i> • Raman Spectroscopy • Photoluminescence (PL) Spectroscopy • UV–Visible Spectroscopy • X-ray Diffraction (XRD) Data Analysis