

Dr. SATYAJEET SANJAY PATIL

M.Sc., SET, Ph.D. (Physics)

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Citations: 203 h-index: 7 i10-index: 5 (As on Sept 2023)



PROFESSIONAL EXPERIENCE

Assistant Professor (Temporary) Department of Physics, Shivaji University, Kolhapur	July 2023 - Present
Assistant Professor (Temporary) Doodhasakhar Mahavidyalaya, Bidri, Kagal, Kolhapur	Sept 2022 – May 2023
Teaching Assistant (Under GJRF (DRF)) Department of Physics, Shivaji University, Kolhapur	Sept 2021 – Aug 2022
Advance Physics Expert Chegg, India	Jan 2019 - Present

EDUCATION

Ph.D., Department of Physics, Shivaji University, Kolhapur Guide: Prof. (Dr.) Pramod S. Patil	2019 - 2023
Maharashtra-SET	2021
M.Sc., Department of Physics, Shivaji University, Kolhapur [71.79 %]	2017 - 2019
B.Sc., Shivaji University, Kolhapur [92.32 %]	2014 - 2017

SCHOLARSHIPS / FELLOWSHIPS

International Travel Scheme (ITS) Science and Engineering Research Board (SERB), DST, India	July 2023
Golden Jubilee Research Fellowship (GJRF) Department of Physics, Shivaji University, Kolhapur	Sept 2020
Shivaji University Merit Scholarship	2016
Summer Course in Experimental Physics (SCEP) Homi Bhabha Centre for Science Education (HBCSE), Tata Institute of Fundamental Research (TIFR), Mumbai, India	2016
Shivaji University Merit Scholarship	2015

AWARDS

- Won 3rd Prize in oral presentation in a two day International Conference, Innovation in Smart & Techno-materials (ICISTM-2023) organized by Sadguru Gadage Maharaj College, Karad Jan 2023
- Won 1st Prize in poster presentation in International E-Conference on Emerging Trends In Nanoscience and Nanodevices (ICETNN-2022) organized by Vivekanand College, Kolhapur May 2022
- Won 3rd Prize in poster presentation in National e-Conference on “Emerging trends in Physical Sciences” organized by Arts, Science and Commerce College Ramanandnagar (Burli) July 2020
- Received prestigious **The President of India Medal for General Proficiency** Shivaji University, Kolhapur for the year 2017- 2018 Feb 2019
- Won **Consolation award** in Poster Presentation in International Conference held at Department of Physics, Shivaji University, Kolhapur Jan 2019
- Won 1st Prize in power point presentation competition in Department of Physics, Shivaji University, Kolhapur, on the occasion of Teachers Day Sept 2018
- **Runner-up Winner** of the ‘JEOL USA SEM/TEM/EPMA Image Contest 2017’ for scanning electron microscopic (SEM) images July and Aug 2017
- Won 1st Prize in poster and model presentation in Avishkar (District Level) Shivaji University, Kolhapur Dec 2016
- Won 1st Prize in Poster Presentation in International Conference held at Shahu College, Kolhapur Feb 2016
- Won 2nd Prize in poster presentation in ‘NEW HORIZON 2K16’ organized by New College, Kolhapur Jan 2016
- Won 3rd prize in poster presentation in ‘CHEM FEST 2016’, organized by Vivekanand College, Kolhapur Jan 2016
- Received **Top 1%** performance in class 12th award June 2014

PATENTS

S. S. Patil, A. S. Patil, M. M. Faras and P. S. Patil, "A method of preparation of organic red amaranth stems derived activated carbon composite ammonium zinc phosphate electrode for supercapacitor application," Indian Patent, Application no.: 202321026406 [Published]. 2023

RESEARCH PUBLICATIONS

1. S. B. Dhavale, V. L. Patil, **S. S. Patil**, R. P. Dhavale, H. H. Park, T. Kim, P. S. Patil, "Nanostructured NiCo_2O_4 embedded on biowaste derived hierarchical porous activated carbon for high performance symmetric and asymmetric supercapacitor device", Journal of Energy Storage [IF: 8.9] 2023
2. M. M. Faras, K. K. Pawar, **S. S. Patil**, K. K. Sharma, S. N. Tayade, P. S. Patil, A. P. Torane, "Facile synthesis of nano-micro clusters of ZnCo_2O_4 for supercapacitors", Journal of Materials Science: Materials in Electronics [IF: 2.8] 2023
3. **S. S. Patil** and P. S. Patil, "Exploring the potential of binder-free synthesized cobalt-based phosphate hydrate and pyrophosphate electrodes for supercapacitors", Journal of Energy Storage [IF: 8.9] 2023
4. **S. S. Patil** and P. S. Patil, "Transition Metal Pyrophosphate ($\text{M}_x\text{P}_2\text{O}_7$): A New Arrival in Hybrid Supercapacitors", Chemical Engineering Journal [IF: 16.7] 2022
5. **S. S. Patil** and P. S. Patil, "Status review of nickel phosphides For hybrid supercapacitors", Nanoscale [IF: 8.3] 2022
6. **S. S. Patil** and P. S. Patil, "3D Bode analysis of nickel pyrophosphate electrode: a key to understanding the charge storage dynamics", Electrochimica Acta [IF: 7.3] 2022
7. **S. S. Patil**, J. C. Shin, and P. S. Patil, "Binder free hydrothermally synthesized nickel phosphate hydrate microplates on nickel foam for supercapacitors", Ceramics International [IF: 5.5] 2022
8. S. A. Beknalkar, A. M. Teli, T. S. Bhat, K. K. Pawar, **S. S. Patil**, N. S. Harale, J. C. Shin, and P. S. Patil, " Mn_3O_4 based materials for electrochemical supercapacitors: Basic principles, charge storage mechanism, progress, and perspectives", Journal of Materials Science & Technology [IF: 10.3] 2022
9. S. B. Dhavale, V. L. Patil, **S. S. Patil**, D. S. Patil, R. P. Dhavale, H. H. Park, P. S. Patil, "Porous carbon derived from Terminalia catappa leaves for energy storage application", Sustainable Energy & Fuels [IF: 6.8] 2022
10. T. S. Bhat, S. A. Jadhav, S. A. Beknalkar, **S. S. Patil**, and P. S. Patil, " MnO_2 core-shell type materials for high-performance supercapacitors: A short review", Inorganic Chemistry Communications [IF: 3.4] 2022
11. S. K. Ambre, **S. S. Patil**, T. S. Bhat, and P. S. Patil, " Bi_2S_3 -sensitized TiO_2 nanorods by bottom-up approach for photoelectrochemical solar cell", Journal of Solid State Electrochemistry [IF: 2.7] 2022
12. T. S. Bhat, S. B. Bhogale, **S. S. Patil**, S. H. Pisal, S. A. Phaltane, and P. S. Patil, "Synthesis and characterization of hexagonal zinc oxide nanorods for Eosin-Y dye sensitized solar cell", Materials Today: Proceedings 2021
13. **S. S. Patil**, T. S. Bhat, A. M. Teli, S. A. Beknalkar, S. B. Dhavale, M. M. Faras, M. M. Karanjkar, and P. S. Patil, "Hybrid solid state supercapacitors (HSSC's) for high energy & power density: an overview", Engineered Science 2020
14. T. S. Bhat, C. C. Revadekar, **S. S. Patil**, T. D. Dongale, D.-k. Kim, and P. S. Patil, "Photo-induced resistive switching in CdS-sensitized TiO_2 nanorod array memristive device", Journal of Materials Science: Materials in Electronics [IF: 2.7] 2020
15. **S. S. Patil**, N. L. Tarwal, H. M. Yadav, S. D. Korade, T. S. Bhat, A. M. Teli, M. M. Karanjkar, J. H. Kim, and P. S. Patil, "Photoelectrochemical performance of dye and semiconductor sensitization on 1-D hollow hexagonal ZnO rods: A comparative study", Journal of Solid State Electrochemistry [IF: 2.7] 2018

RESEARCH PRESENTATIONS

- **International** Conference, NANO KOREA 2023, KINTEX, South Korea [Poster Presented] July 2023
- **National** Conference on Chalcogenide Compounds and Applied Chemistry, Department of Applied Chemistry, Defence Institute of Advanced Technology, Pune [Poster Presented] March 2023
- **#RSC twitter** conference [Poster Presented] Feb 2023
- **International** Conference, Innovation in Smart & Technomaterials (ICISTM-2023), Sadguru Gadage Maharaj College, Karad [Oral Presentation] Jan 2023
- **International** Winter School 2022, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore [Poster Presented] Dec 2022
- **International** E-Conference, Emerging Trends In Nanoscience and Nanodevices (ICETNN-2022), Vivekanand College, Kolhapur [Poster Presented] May 2022

- **National** e-Conference, Department of Physics & IQAC, Arts, Science and Commerce College Ramanandnagar (Burli) [Poster Presented] July 2020
- Online **International** Conference, Department of Physics & IQAC, Shri Pancham Khemraj Mahavidyalaya (SPKM), Sawantwadi [Poster Presented] April 2020
- **National** Conference, Department of Chemistry, Shivaji University, Kolhapur [Poster Presented] Feb 2019
- **International** Conference Department of Physics, Shivaji University, Kolhapur [Poster Presented] Jan 2019
- **Avishkar** Program, Shivaji University, Kolhapur, India [Poster and Model Presented] Jan 2018
- **International** Conference, CSIR National Institute of Oceanography, Goa, India [Poster Presented] Aug 2017
- **Avishkar** Program, Shivaji University, Kolhapur, India [Poster Presented] Jan 2017
- **International** Conference, Shahu College, Kolhapur, India [Poster Presented] Feb 2016

WORKSHOPS / SEMINARS

- Participated in the **workshop & hands-on training** on 'Bio-AFM' organized by SAIF-CFC, Shivaji University, Kolhapur Jan 2022
- Participated in the **workshop & hands-on training** on 'VNA' organized by SAIF-CFC, Shivaji University, Kolhapur Feb 2022
- Participated in the **workshop & hands-on training** on 'XRD' organized by SAIF-CFC, Shivaji University, Kolhapur Nov 2021
- Participated in the online **workshop** on 'Rietveld Refinement Method' organized by UGC DAE CSR Mumbai Centre Sept 2020
- Participated in the **National** 10th INUP Familiarization workshop on 'Nanofabrication Technologies' at IIT, Bombay, Mumbai, India Dec 2018
- Participated in the **National** NCPRE Familiarization workshop on 'Photovoltaics' at IIT, Bombay, Mumbai, India Dec 2018
- Participated in the **National** seminar on 'Energy Conversion and Storage' at Devchand College, Arjunanagar, Kolhapur, India Dec 2018
- Attended **National** Conference on 'Nanomaterials' at Vivekanand College, Kolhapur, India Aug 2018
- Attended one day **workshop** on 'Recent trends in physics' at Shahu College, Kolhapur, India Jan 2017
- Attended **National** Conference on 'Revolutionary role of renewable energy for make in India' at Vivekanand College, Kolhapur, India Feb 2016

KEY RESEARCH EXPERIENCE

- Synthesis and characterization of CZTSSe thin films by spray CVD technique for solar cells (Advisor: Prof. P. S. Patil) June 2018 – March 2019
- Thin films synthesis for solar cell application (Advisor: Prof. P. S. Patil) Summer 2018
- Polyaniline (PANI) thin films synthesis for smart window application (Advisor: Prof. P. S. Patil) Autumn 2017
- Superhydrophobic ZnO nanostructures for self-cleaning application (Advisor: Prof. P. S. Patil) Summer 2017
- Thin films synthesis for supercapacitor application (Advisor: Prof. P. S. Patil) Summer 2017
- Summer Course in Experimental Physics (SCEP) (Advisor: R. B. Khaparde) Summer 2017

SKILLS

Softwares: Origin, Microsoft Office, Mendeley, X'Pert High Score plus, FullProf suite, Vesta, Adobe Illustrator, Adobe InDesign, Blender, Endnote, CorelDraw etc

Synthesis Techniques: Spray Pyrolysis technique, Reflux, Chemical Bath Deposition (CBD), Hydrothermal, Spray - Chemical Vapor Deposition (S-CVD), Chemical Vapor Deposition (CVD), Hot injection method, Electrodeposition, Dip coating, Resistive heating Physical Vapor Deposition, DC magnetron sputtering, etc.

Characterization Techniques: X-ray diffraction (XRD) analysis (Bruker AXS Analytical Instruments Pvt. Ltd., Germany, Model: D2 phaser), Scanning Electron Microscope (SEM) analysis (Model: JEOL JSM-6360, Japan), Shimadzu UV-1800 model Spectrophotometer, Brunauer-Emmett-Teller (BET) (Quantachrome NOVA 1000e, USA), Autolab PGSTAT302N FRA 32 potentiostat (Metrohm auto lab, Netherland), Contact Angle (Model No.-HO-IAD-CAM-01B, Holmarc, India)

CERTIFICATION

- Completed '**Physics of Semiconductors**' online course (12 weeks) successfully. Course Incharge was Prof. H. C. Verma, Indian Institute of Technology, Kanpur (IITK) 15 Aug 2017 to 20 Nov 2017
- Completed '**Learning Physics through Simple experiments**' online course (8 weeks) successfully. Course Incharge was Prof. H. C. Verma, IITK 20 Sept 2016 to 20 Nov 2016
- Completed '**Maharashtra State Course in Information Technology**' (MS-CIT)

EXTRACURRICULARS

- Leader of '**Maharashtra Vivek Vahini**' at Vivekanand College, Kolhapur, India (2014-2017). Organized events for the 'Eradication of superstitions in the society'
- College Leader of '**Young Inspirators Network**' (YIN) at Vivekanand College, Kolhapur, India (2015). Organized events for the 'Holistic development of Youth' (Sakal Media Group, Kolhapur)
- Participated in the '**Avhan State Level Training Camp on 'Disaster Management'**', organized by Shivaji University, Kolhapur from 1st June 2017 to 10th June 2017
- Associated two years with '**National Service Scheme**' as a volunteer at Vivekanand College, Kolhapur, India (April, 2016)
- Took part in cancer-free and blood donation awareness rallies, and other social awakening events
- Interested in reading autobiographies and novels, swimming, travelling etc