

Curriculum Vitae

Shyamal Shegokar

Email ID: shyamalshegokar30@kgpian.iitkgp.ac.in

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2021	Ph.D.	IIT Kharagpur, India	8.6 (Course Work)
2019	M.Sc.	NIT Nagpur, India	6.51 / 10
2017	B.Sc	Sant Gadge Baba Amravati University, India	66.39%

CURRENT POSITION

- **Working on Energy storage storage systems and energy materials,**
Position: Doctor of Philosophy (2nd year) at School of Energy Science and Engineering
(Guide: Prof. Amreesh Chandra, Department of Physics, IIT Kharagpur, India. Co-Guide: Prof. Trilok Singh, School of Energy Science and Engineering, IIT Kharagpur, India)

PAPER PUBLISHED

1. **Combined electrochemical and DFT investigations of iron selenide: a mechanically bendable solid-state symmetric supercapacitor** (Journal of Sustainable Energy & Fuels, 2021, 5, 5001)
Authors: Bidhan Pandit, Sachin R Rondiya, Shyamal Shegokar, Lakshmana Kumar Bommineedi, Russell W Cross, Nelson Y Dzade, Babasaheb R Sankapal
2. **High performance Na-ion supercapacitor: beyond carbon structure** (65th DAE Solid State Physics Symposium, 2021, 55, 1019)
Authors: Sudipta Biswas, Ananya Chowdhury, Shyamal Shegokar, Amreesh chandra
3. **Hierarchical nanostructure of carbon decorated metal organic framework for low cost aqueous al-ion supecapacitor** (submitted to DAE SSPS 2022 conference)
Authors: Shyamal Shegokar, Puja De, Amreesh Chandra.
4. **Bimetallic MoS₂/V₂O₅ nanocomposite based electrode Na-ion battery** (submitted to ISMC 2022 conference)
Authors: Surbhi Priya, Debabrata Mandal, Shyamal Shegokar, Amreesh Chandra.

AWARDS AND ACHIEVEMENTS

1. **Best poster presentation award-** ICEAM 22, “High performance Na-ion supercapacitor: beyond carbon structures”.
2. **Best poster presentation award-** Department of physics, Shri Shivaji College (SGBAU) 2015, “Photoelectric effect”.
3. Graduate Aptitude Test in Engineering (GATE) (2020, 2021).
4. MH-SET 2020
5. Joint Admission Test for M.Sc. (IIT JAM) (2017)

PROJECTS

1. Synthesis and characterization of iron selenide based thin film for supercapacitor application (M. Sc. Project)
(Guide: Prof. B. R. Sankapal, Department of Physics, NIT Nagpur, India) (July 2018 – May 2019)
- Nanoflakes morphology of iron selenide thin film were synthesized by using successive ionic layer adsorption and reaction (SILAR)
- The characterization of nanoflakes was performed using field emission scanning electron microscopy (FE-SEM) and transmission electron microscopy (HR-TEM) to examine morphologies of nanoflakes, X-ray diffraction (XRD) analysis, X-ray photoelectron spectroscopy (XPS), contact angle measurement

- Electrochemical study of iron selenide thin film: cyclic voltammetry, galvanostatic charge-discharge, electrochemical impedance spectroscopy (EIS).
 - Study the performance of the flexible solid-state symmetric supercapacitor device.
2. Hierarchical nanostructure of carbon decorated metal organic framework for low cost aqueous Al ion supercapacitor
(Guide: Prof. Amreesh Chandra, Department of Physics, IIT Kharagpur) (August 2021 – Ongoing)
- The porous ZIF-67 and ZIF-67 composite with different carbon morphologies were synthesized by using simple co-precipitation method.
 - The physiochemical characterization of ZIF-67 and its composites: XRD, FTIR, BET (Brunauer–Emmett–Teller), DLS (Dynamic light scattering) electrochemical study: CV, CD, EIS.
 - The performance of ZIF-67/rGO composite was studied by using redox additive $[K_3Fe(CN)_6]$ based electrolytes.

CONFERENCES ATTENDED

- ✓ First international conference on supercaps and batteries (28-30 March, 2022)
- ✓ 14th national conference on Solid State Ionics (16-18 December 2021)
- ✓ 65th DAE solid state physics symposium (15-19 December 2021)
- ✓ International conference on energy and advanced materials (21-23 October, 2021).
- ✓ International web-seminar on "recent trends in nanostructured materials based devices and their applications (18 July, 2020)

SKILLS AND EXPERTISE

- ✓ Adept at characterization of tools like XRD, BET, TGA/DTA, DLS, SEM, TEM, and UV-Vis, Origin (Graphing workspace), Solid works.