



SURBHI PRIYA

Contact

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Skills

- Adept at making coin cell and pouch cell batteries.
- Skilled in using Glove Box, can regenerate the instrument.
- Proficient in doing Life Cycle Analysis of material and calculating its carbon footprint.
- Characterization of tools like XRD, DLS, SEM, TEM, UV-Vis, FTIR, BET, Electrospinner, Doctor's Blade

Education

Central University Of

Jharkhand

Ranchi, JH

B.TECH: Nanotechnology

GPA:7.77

2017

Marks: 7.77 / 10

IIT Kharagpur

Ph.D.

01/2020

Summary

As Ph.D. candidate specializing in batteries, I bring extensive expertise to the field with a strong foundation in the fabrication of coin cells and pouch cells. My research focus has encompassed comprehensive work on anodes and cathodes for advanced battery systems.

Proficient in working with glove boxes, I have hands-on experience ensuring the integrity of materials in an inert atmosphere.

With a keen interest in transitioning my skills from academia to industry, I am actively seeking opportunities within the battery industry. My diverse skill set, encompassing both theoretical knowledge and practical experience, positions me as a valuable asset for companies aiming to advance battery technologies and contribute to the evolution of energy storage solutions.

Experience

Doctor of Philosophy

IIT Kharagpur | Kharagpur | Jan 2020 - Current

- Batteries beyond Lithium: A study from synthesis to recycle to carbon foot print calculation

JRF Project

IIT Kharagpur | Kharagpur | Dec 2019

- Hierarchically Nanostructured Energy Materials for Next Generation Na-Ion Based Energy Storage Technologies & Their Use in Renewable Energy Systems

M.Tech Project

IIT Kharagpur | Kharagpur | May 2018 - Aug 2019

- Hollow metal oxide nanostructure for VOC sensing

B.Tech Project

Central University of Jharkhand | Jan 2017 - May 2017

- Synthesis and characterization of rGO-MoS₂ Nanohybrid and study of its properties

GPA: 8.57 (Course Work)

IIT Kharagpur

Kharagpur, WB

M.TECH: Solid State Physics

GPA:8.58

01/2019

Marks: 8.58 / 10

JVM Shyamali / Central

Board of Secondary

Education

Higher Secondary

Examination

01/2013

Marks: 60.8%

Bridgefords School / Central

Board of Secondary

Education

Matriculation

01/2011

Marks: 9.2 / 10

National Institute of Technology

NIT Patna | May 2016 - Jun 2016

- Dielectric characterisation of rare earth materials

Patent & Publications

Patents:

- 1) *Sodium Iron Phosphate (NaFePo₄) nanoparticles obtained using fast, feasible, clean and cost-effective synthesis protocol with the application of nanoparticle as battery material for E-cycle:* **S.Priya**, Biswas S., Chowdhury A., Mandal D., De P., Halder J., Kansal S., Anshu S. and Chandra A. (Submitted, ID NO. 21676)
- 2) *Metal organic framework-based electrode materials for low-cost aqueous novel aluminium-ion batteries:* De P., Halder J., Mandal D., **S.Priya**, Kansal S., Anshu S. and Chandra A. (Submitted, ID NO. 21677)

Publications:

- 1) Marigold-like MoS₂@MOF-Derived N-Doped Carbon as a Stable and High-Capacity Anode Material for Sodium-Ion Batteries; **S. Priya**, R. Ravindran, P. De, D. Mandal, S. Mahato, S. Kansal and A. Chandra; ACS Applied Energy Materials (DOI: 10.1021/acsaem.3c02517)
- 2) Time-dependent exfoliation study of MoS₂ for its use as a cathode material in high-performance hybrid supercapacitors; **S. Priya**, D. Mandal, A. Chowdhury, S. Kansal, and A. Chandra; Nanoscale Advances; (DOI: 10.1039/D2NA00807F)
- 3) Hierarchical SnO₂ nanostructures for potential VOC sensor; **S. Priya**, J. Halder, D. Mandal, A. Chowdhury, T. Singh and A. Chandra; Journal of Materials Science; (DOI:10.1007/s10853-021-05942-x)
- 4) Exploring MoS₂ Quantum Dot-Embedded Within d-Ti₃C₂ as Anode Material for High-Performance Na-Ion Batteries: A Comprehensive Temperature Study ranging from -20°C to +60°C; **S. Priya**, D. Mandal, L. Bharti, S. Shegokar, S. Mahato, S. Kansal and A. Chandra (Submitted: Advanced Energy Materials, 2024)
- 5) Liquid phase exfoliation of MoS₂ and its usage as anode material for Na ion battery: The critical impact of time; **S. Priya**, D. Mandal, S. Kansal and A. Chandra (Submitted: Applied Energy Materials, 2024)
- 6) Hollow Nanostructures of Ternary Ce_{1-x}Cu_xO₂ for Volatile Organic Compound Sensing; D Mandal, **S. Priya**, A. Chowdhury, A.K. Srivastava and A. Chandra; ACS Applied Nano Materials (DOI: 10.1021/acsnm.3c04684)
- 7) Electrochemically activated Mn₃O₄ nanoparticles as higher performing electrode than MnO₂ for Al-ion batteries – An insight into the crystallographic changes caused by Al³⁺ intercalation; P. De, L. Bharti, J. Halder, **S. Priya** and A. Chandra; Electrochimica Acta (DOI: 10.1016/j.electacta.2023.143248)

- 8) Integrated energy generation and storage systems for low-power device applications; S. Kansal, **S. Priya**, S. Porwal, A. Chandra and T. Singh; *Energy Storage* (DOI: 10.1002/est2.413)
- 9) Magnetic Supercapacitors-Particle Morphology Have Significant Impact on the Electrochemical Performance; J. Halder, S. Biswas, A. Chowdhury, D. Mandal, S. Kansal, **S. Priya**, P. De, A. K. Srivastava and A. Chandra; *The Journal of Physical Chemistry C* (DOI: doi.org/10.1021/acs.jpcc.3c01223)
- 10) High performing supercapacitors using Cr₂O₃ nanostructures with stable channels- theoretical and experimental insights; S. Kansal, J. Halder, D. Mandal, R. Rahul, **S. Priya**, P. De, V. Sharma, A. K. Srivastava, T. Singh and A. Chandra; *Materials Science and Engineering: B*; (DOI:10.1016/j.mseb.2023.116438)
- 11) High performing supercapacitors using Cr₂O₃ nanostructures with stable channels- theoretical and experimental insights; S. Kansal, J. Halder, D. Mandal, R. Rahul, **S. Priya**, P. De, V. Sharma, A. K. Srivastava, T. Singh and A. Chandra; *Materials Science and Engineering: B*; (DOI: 10.1016/j.mseb.2023.116438)
- 12) Superior-catalytic performance of Ni-Co Layered double hydroxide nanosheets for the reduction of p-nitrophenol: S. Kansal, P. Singh, S. Biswas, A. Chowdhury, D. Mandal, **S. Priya** and A. Chandra; *Hydrogen energy* (DOI: 10.1016/j.ijhydene.2022.04.213)
- 13) Tuning Na₂Ti₃O₇ Nanostructures for Tailoring High-Performance Na-Ion Supercapacitors; P. De, D. Mandal, S. Biswas, A. Kumar, **S. Priya**, B. K. Dubey, A. K. Srivastava and A. Chandra; *Energy Fuels* (DOI: 10.1021/acs.energyfuels.3c00198)
- 14) 2D flakes of Au decorated over SnO₂ nanoparticles as high-performing supercapacitor electrode material: S. Anshu, **S. Priya**, D. Mandal, R. Rahul, T. Singh and A. Chandra; *Journal of Physics D: Applied Physics* (DOI: 10.1088/1361-6463/acc33f)
- 15) Role of porosity and diffusion coefficient in porous electrode used in supercapacitors- Correlating theoretical and experimental studies; P. De, J. Halder, C. C. Gowda, S. Kansal, **S. Priya**, S. Anshu, A. Chowdhury, D. Mandal, S. Biswas, B. K. Dubey and A. Chandra; *Electrochemical Science Advances* (DOI: 10.1002/elsa.202100159)
- 16) 2-Dimensional V₂O₅ Nanosheets as an Advanced Cathode Material for Realizing Low-Cost Aqueous Aluminium Ion Battery: P. De, J. Halder, **S. Priya**, A.K. Srivastava and A. Chandra; *ACS Applied Energy Material* (DOI: 10.1021/acsaem.2c02979)

Accomplishments

- AIR 396 in GATE, 2017
- Best Poster Presentation Award, in International Conference on Nanoscience and Nanotechnology-2019. Ranked 6th amongst 400 posters.
- Best Poster Presentation Award, in International Conference on Supercapacitors and Batteries, SUPERBATS - 2022

- Stood third in zonal essay writing competition

Positions of Responsibility

- Teaching Assistant, Department of Physics, IIT Kharagpur, Responsible for conducting experiment to create high vacuum using oil diffusion pump and rotary pumping M.Tech laboratory.
- Member of Energia, Professional Association in Energia - The technical club of Central University of Jharkhand.
- Core Team Member of 1st All India Hackathon-2019

Training

- International Conference on Nanoscience and Nanotechnology
- International Conference of European Materials Research Society
- International Conference on Electroactive Polymers
- International Conference on Energy and Advanced Materials
- National Conference on Solid State Ionics