Lalit Bharti

Ph.D. | Physics | Indian Institute of Technology Kharagpur lalitbharti0@gmail.com

Research Domain: Experimental Condensed Matter Physics, Nanomaterials and Energy storage systems

ACADEMIC QUALIFICATIONS:

Degree/Certification	Institute	Specialization
Ph.D.	**Indian Institute of Technology Kharagpur**	**Physics**
M.Sc.	Indian Institute of Technology Indore	Physics
B.Sc.	University College of Science, MLSU, Udaipur	PCM
Higher Secondary School	Board of Secondary Education Rajasthan	PCM
Secondary School	Board of Secondary Education Rajasthan	-

PUBLICATIONS:

[1] P. De, **L. Bharti**, J. Halder, S. Priya, and A. Chandra, "Electrochemically activated Mn_3O_4 nanoparticles as higher performing electrode than MnO_2 for Al-ion Batteries – An insight into the crystallographic changes caused by Al^{3+} intercalation", Small (under review)

[2] D. Mandal, **L. Bharti**, S. Biswas, and A. Chandra, "Graphene decorated $LiMn_2O_4$ Electrode Material for hybrid type Energy storage devices," *Energy Storage,* p. e373.

[3] D. Mandal, **L. Bharti**, and A. Chandra, "Tea leaf derive carbon dots for high performance Supercapacitor," in 65th *DAE Solid State Physics Symposium*, India, 2021, vol. 55 *(Conference proceedings*)

[4] **L. Bharti**, P. De, and A. Chandra, "Investigation of Aluminium Electrochemistry in Mn_3O_4 based Cathode in Rechargeable Aqueous Aluminium Ion Battery," in 66th *DAE Solid State Physics Symposium*, India, 2022 *(Conference proceedings*)

[5] D. Mandal, S. Priya, **L. Bharti**, and A. Chandra, " Pseudo-2-D CuO Nanostructure based Anode material for Li-ion Battery," in 66th *DAE Solid State Physics Symposium*, India, 2022. *(Conference proceedings*)

[6] D. Mandal, **L. Bharti**, and A. Chandra, "2D-gC_3N_4 coated Al_2O_3//SnS_2 based low-cost aqueous Al-ion supercapacitors," in *9th Interdisciplinary Symposium on Materials Chemistry,* BARC, India, 2022 *(Conference proceedings*)

PATENTS:

[1] Sodium iron phosphate ($NaFePO_4$) nanoparticles obtained using fast, feasible, clean and cost-effective synthesis protocol with the application of nanoparticle as battery material for e-cycle, S. Priya, S. Biswas, A. Choudhary, D. Mandal, P. De, J. Halder, S. Kansal, S. Anshu, **L. Bharti**, S. Shegokar and A. Chandra, Patent ID – 21676 (applied)

PREVIOUS TRAINING:

1. Worked under DST project [**Project No: SB/S2/CMP-077/2013**] and CSIR [**Project No: 03 (1310)/14/EMR-II**] during MSc project.
2. "**Materials Characterization Techniques**" conducted as a part of QIP, organized by the Department of MEMS, IIT Indore from March 22nd to 27th, 2021.

SKILLS:

Characterization techniques:	Electrochemical characterization (CV, CD, EIS), XRD, BET, UV-Vis, FTIR, Particle size analysis
Instruments handling:	3D printing, Coin cell fabrication, Hydrothermal synthesis, Spin coater, Glove box
Softwares:	Quantum Espresso, BURAI, COMSOL, Solid Works, Origin, MS Office
Programming Language:	C++

ACHIEVEMENTS:

- National level exams qualified:
  - GATE 2021
  - Joint CSIR-UGC NET (LS) 2021
  - CUCET 2020
  - IIT-JAM 2016
- Merit-cum-means Scholarship 2012 holder (from MHRD Central sector scheme)

OTHER PAPERS PRESENTED:

1. Presented a paper and participated at **65th DAE Solid State Physics Symposium** organized by the Department of Atomic Energy, Government of India, held at Bhabha Atomic Research Centre, Mumbai, India, during 15 - 19 December 2021
2. Presented a poster at the **International Conference on Energy & Advanced Materials (ICEAM-2021)** organized by the Department of Physics and Materials Science and Engineering, JIIT, Noida, India from October 21– 23, 2021
3. Presented paper at **14th National Conference on Solid State Ionics (NCSSI-14)** organized by the Department of Physics & Astrophysics, University of Delhi, Delhi, India, during December 16-18, 2021