

CV- in brief

Dr. ACHCHHE LAL SAROJ (M.Sc., Ph. D)

Professor,

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Teaching Experience at UG and PG level: **18 years**

Employment History:

Post/Designation	Department	Date	
		From	to
Lecture/Assistant Professor Stage- I	Department of Physics, Faculty of Science, BHU, India-221005	30.10.2007	29.10.2013
Assistant Professor Stage- II	Department of Physics, Institute of Science, BHU, India-221005	30.10.2013	29.10.2018
Assistant Professor Stage- III	Department of Physics, Institute of Science, BHU, India-221005	30.10.2018	29.10.2021
Associate Professor (A.L.- 13 A)	Department of Physics, Institute of Science, BHU, India-221005	30.10.2021	29.10.2024
Professor (AL-14)	Department of Physics, Institute of Science, BHU, India-221005	30.10.2024	Continued

Distinctions/Scholarships: NET and GATE qualified- 2004, GEFP fellowship, 2024

Abroad visit: Visited **Universiti Malaya, Malaysia** for one year as a VISITING LECTURER under IoE fellowship, BHU (Nature of service: Teaching and research)

Research Interest: Ionic liquids, Ion conducting Polymer/Polymer blend and Bio-polymer electrolytes, hydrogels, Dye-sensitized solar cell (DSSC), Supercapacitors (EDLC and Zinc-ion hybrid capacitor).

Projects Undertaken as PI/ Co-I:

As PI: 02 (total amount INR 64, 28, 762/-)

As Co-I: 03 (total amount INR 1, 10, 27, 950/-)

Project Completed: 03

Ph. D Guidance:

1. **Ph. D thesis Awarded- 03** (1. Dr. **Pankaj Singh** (Year of award: 2022, Topic: Ion transport Studies on PVA based ion conducting polymer/polymer blend electrolytes), 2. Dr. **Devesh Chandra Bharati** (Year of award: 2023, Topic: Structural, Thermal, and Ion transport studies of Chitosan based biopolymer electrolyte membranes) and 3. Dr. **Pooja Rawat** (Year of award: 2025, Topic: Investigation on Biopolymer based polymer blend electrolytes and its application in Dye-sensitized solar cells)

2. **Registered Ph. D scholars: 03 + 01** (1. Pravin Kumar Ray, 2. Gulshan Kumar Meena, 3. Raghubir Kumar Prajapati and 4. Mr. Arun Gopal (Project JRF))

3. **Post doctoral fellow:** 01 RJP fellow

M. Sc. Final project/ Dissertation awarded: 14

Total Publications in International Scopus Indexed Journals: 32

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Total Citation: 1072; **H-Index:** 18; **I₁₀-Index:** 22

Published book chapters in international books: **04**; Published proceeding papers: **04**

International conference paper presentation/participation: **17**

National **conference paper** presentation/participation: 10

Invited talks in international/ National conferences: **07**

Selected 10 Recent Research Publications:

1. **A.L. Saroj**, L.K. Hoe, S. Bashir *et al.* A Review on the Advancement of Biopolymer Electrolytes for High-Performance Supercapacitor Applications. *J Polym Environ* **34**, 9 (2026). <https://doi.org/10.1007/s10924-025-03721-2>
2. Pooja Rawat, Gulshan Kumar Meena, **A.L. Saroj**, Imidazolium cation ionic liquid-chitosan/PVP based plasticized nanocomposite biopolymer electrolyte membranes for dye-sensitized solar cell and supercapacitor applications, *Journal of Physics and Chemistry of Solids*, 113318 (2025)
3. RK Prajapati, Pooja Rawat, Horesh Kumar, **A.L. Saroj**, Chitosan-PVA-Mg (NO₃)₂ based biopolymer blend electrolyte membranes for EDLC applications: Structural, thermal and electrical transport properties study, *Materials Science and Engineering: B*, 317, **2025**, 118200.
4. Gulshan Kumar Meena, Pooja Rawat, Raghubir Kumar Prajapati, **A.L. Saroj**, Plasticized biopolymer electrolyte membranes based on gellan gum-MeSO₄Na: structural, thermal and electrical transport properties study, *Journal of Materials Science: Materials in Electronics*, 36 (7), **2025**, 1-18.
5. Pooja Rawat, RK Prajapati, Gulshan Kumar Meena, **A.L. Saroj**, Enhancing the performance of Chitosan/PVP based bio-polymer electrolyte incorporated with SiO₂ nano-particles in dye-sensitized solar cell, *Materials Science and Engineering: B*, 308, **2024**, 117603.
6. **A.L. Saroj**, Chandrakant Kumar Gond, Pooja Rawat, RK Prajapati, Gulshan Kumar Meena, Pravin Kumar Ray, Ionic liquid based NCPBE membranes for electrochemical capacitor applications: Structural, thermal and electrical transport properties, *Physica B: Condensed Matter*, 691, **2024**, 416302.
7. Pooja Rawat and **A.L. Saroj**, Effect of ionic liquid on plasticized CS-PVP-NaI based biopolymer blend electrolytes: Structural, thermal, dielectric and ion transport properties study, *Materials Science and Engineering B* 288 (2023) 116215
8. R.K. Prajapati, H. Kumar, **A.L. Saroj**, Formation of silver particles in [PVA:CS:PEG]-AgNO₃ based biopolymer electrolyte membranes: Structural and electric transport properties study, *Physica B: Condensed Matter*, 662 (2023) 414962
9. Devesh Bharati and **A.L. Saroj**, Plasticization effect of ionic liquid on structural, thermal and ion transport properties of CS-PVA-NaI based bio-polymer electrolyte membranes, *Polymer-Plastics Technology and Materials*, 2023, VOL. 62, NO. 8, 989–1007 (2023)
10. Pravin Kumar Ray, Devesh Chandra Bharati, J. P. Singh and **A.L. Saroj**, Vibrational, dielectric and ion transport properties study of CMC-EDTA-PEG-based biopolymer electrolyte membranes. *Macromol. Res.* **31**, 539–556 (2023)