Dr. REENA PARIHAR

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Lucknow, UP

Profile

Expertise in Chemistry, Physics and Mathematics, dedicated to inspiring students with innovative teaching methods and fostering academic excellence for the betterment of society.

Skills

Subject Knowledge — Chemistry, Mathematics and General Science. | **Interpersonal Skills** — Effective Communication, Problem Solving, Adaptability, Conflict Resolution, Empathy. | **Tools & Technology** — Microsoft 365, Chem Draw, Gauss View, Gamry Echem Analyst and X'pert High Score.

Education

Ph.D. (Chemistry), University of Lucknow — 2024 | Lucknow, India

Topic: "Synthesis and Characterization of Nano-composite Materials for their Application to Electrochemical Energy Devices"

Supervisor: Dr. N.K. Singh

Master of Science (Applied Chemistry), BBAU — 2015 | Lucknow, India

Bachelor of Science (PCM), University of Lucknow — 2013 | Lucknow, India

Professional Experience

B.S.N.V. P.G. College

Assistant Professor (Contractual) — May 2025 – present | Lucknow, India

Lecturer (Part-Time) — October 2024 – May 2025 | Lucknow, India

University of Lucknow, Research Scholar — April 2019 – October 2024 | Lucknow, India

- Synthesis, Characterization & analysis of different spinel-perovskite oxides and their composites for different electrochemical applications such as water electrolysis and direct methanol fuel cells.
- Different approaches for preparation/design of electrode for electrochemical applications.
- Experimental study & electrochemical characterization of materials in the form of film electrode with regards to energy conversion devices like water electrolysis and direct methanol fuel cells.

Publications

1. **Reena Parihar**, Prakhar Mishra, Yamini Singh, Pradeep Kumar Yadav, Narendra Kumar Singh, *Facile synthesis of novel NiCo2O4-Mn1-xCrxCo2O4 (x = 0.2, 0.6, 0.8) composites for oxygen evolution and methanol oxidation in alkaline medium,* Ionics 31 (2025) 3479-3493.

2. **Reena Parihar**, Prakhar Mishra, Pradeep Kumar Yadav, Narendra Kumar Singh, *Partially Substituted La for Sm in Sm0.8Sr0.2NiO3: An Efficient Electrocatalyst Towards Alkaline Water Splitting*, Chemistryselect 10 (2025) e202405118.

3. **Reena Parihar**, Prakhar Mishra, Yamini Singh, Pradeep Kumar Yadav, Narendra Kumar Singh, *Controlled Synthesis of novel NiCo2O4-Co1-xCrxFe2O4 (0 ≤ x ≤ 0.8) composites for electrolytic oxygen evolution and methanol oxidation in alkaline medium*, The Journal of Physical Chemistry C 128 (2024) 13666-13680.

4. Reena Parihar, Prakhar Mishra, Pradeep Kumar Yadav, Narendra Kumar Singh, *Tailoring spinel with perovskite: Sr-Substitution in the Perovskite Phase of CoFe2O4-LaCoO3 nanocomposite for Oxygen Evolution and Methanol Oxidation in Alkaline Medium*, Energy Technology 12 (2024) 2400221.

5. Reena Parihar, Prakhar Mishra, Yamini Singh, Narendra Kumar Singh, *Investigating the effect of doping LaCoO3 in CoFe2O4 forming nanocomposite, towards Oxygen Evolution and Methanol Oxidation reactions in Alkaline Medium*, Indian Journal of Chemistry 63 (2024) 485-494.

6. Yamini Singh, Prakhar Mishra, **Reena Parihar**, Narendra Kumar Singh, Tzu Hsuan Chiang, *Molecular engineering in carbon nitride/mesoporous Ni0.5Co2.5O4 nanocomposite as bifunctional electrocatalyst for oxygen and hydrogen evaluation*, International Journal of Hydrogen Energy 117 (2025) 325-336.

7. Prakhar Mishra, **Reena Parihar**, Yamini Singh, Narendra Kumar Singh, *Synergetic effect of Ni Substitution and Induced Porosity: Enhancing the Electrocatalytic Performance of Cobaltite towards OER and MOR in alkaline medium*, Journal of Alloys and Compounds 1002 (2024) 175375.

8. Prakhar Mishra, **Reena Parihar**, Yamini Singh, Amritpal Singh Chaddha, Narendra Kumar Singh, *Finely tuning Cobalt Valence in Co3O4 Lattice through Chromium Substitution: Regulating the charge transfer and oxygen vacancies for Oxygen Evolution and Methanol Oxidation Reaction*, Materials Today Sustainability 27 (2024) 100826.

9. Prakhar Mishra, Amritpal Singh Chaddha, **Reena Parihar**, Narendra Kumar Singh, *Controlled synthesis of efficient novel Cr0.2Co2.8O4-MoO3 nanocomposites for high-performance O2-evolution and methanol oxidation in alkaline medium*, International Journal of Hydrogen Energy 51 (2024) 1587-1605.

10. Prakhar Mishra, Divya Singh, Faishal Khan, **Reena Parihar**, Narendra Kumar Singh, *Investigating Ultrasonically Assisted CdxCryFe3 – (x + y)O4 for Its Electrochemical Efficacy towards Water Electrolysis, Ethanol and Methanol Oxidation*, Surface Engineering and Applied Electrochemistry 60 (2024) 618-625.

11. Reena Parihar, Priya Sharma, Amritpal Singh Chaddha, Narendra Kumar Singh, *Strontium Substituted SmNiO3: Novel Electrode Materials for Alkaline Water Electrolysis*, Journal of New Materials for Electrochemical Systems 24 (2021) 201-207.

12. Narendra Kumar Singh, Priya Sharma, Manish Kumar Yadav and **Reena Parihar**, *Oxygen evolution electrocatalytic properties of perovskite-type oxides obtained by PVP sol-gel route: Part II. The effect of partial substitution of Sm for Sr in La0.4Sr0.6CoO3*, International Journal of Electrochemical Science 15 (2020) 7001-7012.

13. Narendra Kumar Singh, Manish Kumar Yadav, **Reena Parihar** and Indresh Kumar, *Low Temperature Synthesis of spinel-type CoxFe3-xO4 (0 ≤ x ≤ 1.5) Oxide and its Application for Oxygen Evolution Electrocatalysis in Alkaline Solution*, International Journal of Electrochemical Science 15 (2020) 6605-6619.

14. Narendra Kumar Singh, Manish Kumar Yadav, **Reena Parihar** and Chinky Gangwar, *Egg-White Mediated Sol-Gel Synthesis of Cobalt Ferrites and Their Electrocatalytic Activity Towards Alkaline Water Electrolysis*, Journal of New Materials for Electrochemical Systems 23 (2020) 87-93.

Conferences/Workshops

1. Participated and Presented Poster in International Carbohydrate Conference (CARBO-XXXIV) "Emerging Frontiers in Carbohydrate Chemistry and Glycobiology", December 5-7, 2019, organized by Department of Chemistry, University of Lucknow, Lucknow, India.

2. Participated and Presented Poster in International Conference on Diverse Emerging Materials and their Applications (ICDEMA-2021), March 14-15, 2021, organized by Department of Physics, University of Lucknow, Lucknow, India.

3. Participated and delivered Oral Presentation in 4th International Conference on Science & Engineering of Materials (ICSEM-2021), 19th - 22th July 2021 organized by School of Basic Sciences and Research, Sharda University, Greater Noida, India.

4. Participated and delivered Oral Presentation in Global Conference on Lucknow Climate Change Conference on Control of Green House Gasses at the Source by Physical and Chemical Technologies_2k22 (LCCCCGGSPCT_2K22), 22-24 April 2022, organized by Department of Chemistry, Babasaheb Bhimrao Ambedkar University, Lucknow, India.

5. Participated and delivered Oral Presentation in International Conference on Recent Advances in Green & Sustainable Chemistry (ICRAGSC), December 22, 2022, organized by Department of Chemistry, School of Basic and Applied Sciences, Maharaja Agrasen University, Solan, Himachal Pradesh, India.

6. International Workshop on Design and Manufacturing of Composites for Engineering Applications, 01st - 05th February 2021, organized by Indian Institute of Technology Mandi, Mandi, Himachal Pradesh.

7. International Workshop on Supporting Chemistry Research with modern DFT (Density Functional Theory): Software, Techniques, and Applications, 5th - 16th February 2021, organized by Department of Chemistry, Smt. S.S. Nootan Science & Commerce College, Visnagar, Mehsana, Gujarat.