Curriculum Vitae

Ms. Arushi Arora

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Academic and Research Background

August 2020 – March 2025 (Thesis Submitted)	Ph.D. Material Science (GPA- 10.0, Scale-10) Institute of Nano Science and Technology (INST) & Indian Institute of Science Education and Research (IISER), Mohali, India *Thesis title:* ***Efficient electrochemical hydrogen production through surface-engineered metal sulphide surface***
July 2017- May 2019	**M.Sc. Chemistry** (1st Division) (GPA = 7.1, Scale-10) (Physical Chemistry) Department of Chemistry, Panjab University, Chandigarh - India
August 2015- May 2017	**B.Sc. Chemistry Hons.** (1st Division) (GPA = 7.7, Scale-10) Department of Chemistry, Panjab University, Chandigarh - India

Research Interest

- Electrochemistry (Water Splitting/ Hydrogen evolution/ Chlorine evolution/ Ethanol Oxidation/ Urea Oxidation)
- Photoelectrocatalysis
- Electrode materials for batteries
- Nanostructured material and characterization
- Photocatalysis
- Waste to profit strategies
- Renewable energy technologies

Hands on Training

- X-ray Photoelectron Spectroscopy (XPS)
- X-ray Diffraction (XRD)
- Transmission electron microscopy (TEM)
- Inductive coupled plasma spectrometry (ICP-MS)
- Differential Scanning calorimetry (DSC)
- Surface Area measurement (BET)
- UV-Visible spectrophotometer
- Fourier transform infrared spectroscopy (FTIR)
- Electrochemical workstation
- CHNS Analyser
- Microwave digestor and synthesizer

Work Experience

1. **Senior Research Fellow** under Department of science and technology (DST), India at Institute of Nano Science and Technology, Mohali- India, from 4th August 2022-present
2. **Junior Research Fellow** under Department of science and technology (DST), India at Institute of Nano Science and Technology, Mohali- India, from 28th August 2022- 3rd August 2020

Patents

1. Process of preparing silica-iron oxide from iron ore slime, Santanu Sarkar, Niloy Kundu, Tamal Kanti Ghosh, Menaka Jha, Sujit Kumar Guchhait, Krishna Yadav, Sunaina, **Arushi Arora**, **2023**, Patent Application Number: 202231018701
2. Method of separating iron and cobalt from their salt and solid mixture, Menaka Jha, S.K. Mehta, Supriya Rana, **Arushi Arora**, **2023**, Patent Application Number: 202411001965

List of Publications- Citations: 83 h-index: 5

1. **Arushi Arora**, Menaka Jha and S.K. Mehta, 2025, Upcycling of scrap Iron for synthesis of Iron sulphide and its application in hydrogen evolution, ***Waste Management*** , 2025, 204, 114927
2. **Arushi Arora**, Anima Mahajan, Nausad Khan, Santanu Ghosh, Menaka Jha, Design of a new process for the stabilization of FeS–Bi_2S_3 hybrid nanostructure and its application as a field emitter, ***Nanoscale***, **2024**, 16 (47), 21847-21855
3. **Arushi Arora**, Ritika Wadhwa, Krishna K. Yadav, Ankush, Menaka Jha, Enhanced electrochemical oxygen generation from sillenite phase of bismuth iron oxide ($Bi_{24}Fe_2O_{39}$) ultrafine particles stabilized at room temperature, ***Journal of Electroanalytical Chemistry***, **2024**,118154.
4. **Arushi Arora**, Sunaina, Ritika Wadhwa, Menaka Jha. Conversion of scrap iron into ultrafine α-Fe_2O_3 nanorods for efficient visible light photodegradation of ciprofloxacin. ***New J. Chem.*** **2022,** 46, 12, 5861-5868.
5. **Arushi Arora,** Sushma Jangra, Nausad Khan, Menaka Jha, Ultralow overpotential during hydrogen evolution reaction in nickel cobalt sulphide decorated with trace platinum, **2025** (communicated)
6. **Arushi Arora,** Kritika Sood, Menaka Jha, Unraveling the Synergistic Mechanisms in Complex Metal Sulfides for Enhanced Hydrogen Evolution, **2025** (communicated)
7. Anima Mahajan, Menaka Jha, Arushi Arora, GR Umapathy, Santanu Ghosh, Synthesis of MoS_2@NdS heterostructures featuring augmented field emission performance, ***J. of Materials chemistry A*****, 2024**,12, 37 25274-25290
8. Arushi Sharma, **Arushi Arora**, S.K. Mehta, Au Nanoparticles Decorated Graphitic Carbon Nitride Nanosheets as a Sensitive and Selective Fluorescence Probe for Fe3+ and Dichromate Ions in Aqueous Medium , ***Chemosphere,*** **2024**, 363, 142834
9. Ahmed Belal Salik Usmani, Supriya Rana, **Arushi Arora**, Krishna K. Yadav, Heena Sammi, Neha Sardana, Menaka Jha, Electrochemical oxygen generation from VO_2 nanoflakes decorated onto graphite sheet, ***Journal of Alloys and Compounds***, **2024**, 976, 173058
10. Kritika Sood, Ritika Wadhwa, **Arushi Arora**, K.K. Bhasin, Menaka Jha, Harnessing $LaCoO_3$ Perovskite as a Sustainable Catalyst for Electrochemical Chlorine Evolution in Dye-Contaminated Saline Wastewater, ***ACS Applied Energy Materials***, **2024,** 7,21, 9902-9910

11. Nausad Khan, Anima Mahajan, **Arushi Arora**, Kritika Sood, Sushma Jangra, Santanu Ghosh, Menaka Jha, Excellent Field Emission from Anisotropic Tungsten Trioxide Nanostructures Derived Through Environmental Friendly Green Process, ***Material Chemistry and Physics*** **,2024**, 320, 129364
12. Gulshan Kumar, Santanu Ghosh, **Arushi Arora**, Menaka Jha, Professor Pankaj Srivastava, Effect of transition metal decoration on field emission properties of vertically aligned carbon nanotubes: An interplay between conventional parameters and occupancy of 3d and 4s state, ***Journal of Materials Science: Materials in Electronics*****, 2024**, 35, 2071
13. Efficient ethanol oxidation by tea leaf extract mediated nickel oxide, Kritika Sood, **Arushi Arora**, K.K. Bhasin, Menaka Jha, **2024** (communicated)
14. Tailoring nano-nickel oxide structures through CTAB mediated morphological control for enhanced electrocatalytic urea oxidation, Supriya Rana, Arushi Arora, Menaka Jha, S.K. Mehta, **2024** (communicated)
15. Ritika Wadhwa, **Arushi Arora**, Menaka Jha, Nickel sulphide incorporated into graphitic carbon nitride matrix for the efficient alcohol oxidation, **2024** (communicated)
16. KK Yadav, G Kumar, **Arushi Arora**, S Ghosh, M Jha, An insight of enhanced field emission from vertically oriented LaxNd1-xB6 nanorods, ***Materials Chemistry and Physics***, **2022**, 279, 125694
17. Shivani Uppal, **Arushi Arora**, Sanjeev Gautam, Suman Singh, RJ Choudhary, SK Mehta, Magnetically retrievable Ce-doped Fe_3O_4 nanoparticles as scaffolds for the removal of azo dyes, , ***RSC Advances***, **2019**, 9, 23129-2314

Chapters

18. Arushi Arora and K.K. Yadav, Potentiometric devices for Biomarkers (Sensing Materials and Devices for Biomarkers, 146-165, **2025**)
19. **Arushi Arora** and Menaka Jha, Green and sustainable future and conclusion (Industrial Applications of Nanoemulsion, 267-273, **2024**)
20. Menaka Jha, **Arushi Arora**, Kritika Sood, Wastewater Treatment Using Nanoadsorbents Derived from Waste Materials (Waste to Profit, 147-164,2023)
21. Ritika Wadhwa, **Arushi Arora** and Krishna Yadav, Advanced fiber materials in optical and photonic application (J Opt Commun, 191-218,**2023**)
22. Ritika Wadhwa**, Arushi Arora** and Krishna Yadav, Overview of advanced fiber materials (Fiber Materials: Design, Fabrication and Applications, 1, **2023**)

23. KK Yadav, **Arushi Arora**, S Jangra, M Jha Chemically Modified Carbon Nanotubes in 3 D and 4 D Printing (Chemically Modified Carbon Nanotubes for Commercial Applications, 419-439, **2023**)

Conferences Attended / Workshops

1. 7th Edition of hybrid international conference on "Nanotechnology for Better Living" NBL-2021, Srinagar -2021
2. 1st annual meeting of Energy and Environmental unit, INST Mohali -2021
3. 1st bilateral meeting on Smart Materials for Energy and Environmental Technology (Smart meet-2022), INST Mohali -2022
4. IITM-RSC desktop Seminar on Environmental sciences -2022
5. Bangalore India Nano (Govt. of Karnataka), Virtual event -2022
6. Frontiers in Chemical Sciences, IIT Guwahati -2022
7. 2nd CSIO-INST Bilateral Meet, INST Mohali -2023
8. 3rd Research Scholar's Day, INST Mohali -2023
9. 34th MRSI AGM and 5th Indian Materials Conclave, IIT-BHU, Varanasi -2023
10. Workshop on "Molecular simulations for Materials Design", NIT Calicut -2024
11. International conference on materials for Energy, Environment and Healthcare, NIT Calicut -2024

Awards

- **Gate 2020** Qualified (AIR-248), Subject- Chemical Sciences
- **Best Poster Award** at Nanotechnology for better living 2021, 7th to 11th September 2021 - NIT, Srinagar
- DST India JRF-SRF fellowship

References

1. Dr. Menaka Jha
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   Email: menaka@inst.ac.in, menaka100jha@gmail.com
2. Prof. S.K. Mehta
   Professor, Department of Chemistry and CAS Coordinat,

Ex- Vice Chancellor, University of Ladakh,
Coordinator CRIKC, Local Coordinator GIAN
Ex-Honorary Director, SAIF, PU
Ex-Chairman, Dept. of Chemistry PU
Adjunct Professor, Shoolini University, Solan (H.P.)
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3. Dr. Kiran S. Hazra
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