

# Curriculum Vitae

## HIMANSHI BHAMBRI

Assistant Professor (Contractual, for teaching of Chemistry)  
Department of Education,  
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## ACADEMIC QUALIFICATIONS

- **2019-2025:** Doctorate of Philosophy (Ph.D.) in Chemistry, Indian Institute of Science Education and Research Mohali, India
- **2014-2016:** Master of Science (Chemistry), Panjab University, Chandigarh.
- **2013-2014:** Bachelor of Education (Teaching of Science and Mathematics), Kurukshetra University, Kurukshetra, Haryana.
- **2010-2013:** Bachelor of Science (Non-medical; Majors: Chemistry, Physics, and Mathematics), Kurukshetra University, Kurukshetra, Haryana.
- **2010:** Higher secondary education (Non-medical; Majors: Chemistry, Physics, and Mathematics), CBSE Board.
- **2008:** Secondary education (Science, Mathematics, and Languages (English, Hindi, Sanskrit)), CBSE Board.

## TEACHING EXPERIENCE

- **2025:** Contractual faculty for the teaching of chemistry in CUP Bathinda.
- **2018-2019:** Guest faculty in Chemistry department in GGD Sanatan Dharma (SD) college, Sec-32,
- **2017-2018:** Lecturer (Ad-hoc) for teaching Chemistry department in GHG Khalsa Collegiate, Ludhiana.
- **2017:** Teaching Science and Mathematics in a recognized coaching institution Impact Creators in Chandigarh.

## RESEARCH AREA

- Materials chemistry
- Porous materials: MOFs, COFs and POPs
- Purification of water and air from industrial pollutants and carbon dioxide by fixation, sensing and sorption applications

## RESEARCH EXPERTISE

- Single-crystal X-ray diffractometer (Bruker) - growing, sorting and mounting single crystals, data collection, data processing and solving single crystal structures using APEX, CrysAlis and OLEX software.
- Spectroscopic techniques like NMR, FTIR, XPS, thermogravimetric analysis, and diffuse reflectance UV-vis.
- Powder X-ray diffractometer (Rigaku) and variable temperature attachment (VT-PXRD).
- Sorption instrument (BELSORP Max) for gas and vapor sorption studies.
- Field Emission Scanning Electron Microscopy (Jeol) for surface imaging from microns to 100 nanometer scale, energy dispersive spectroscopy, and mapping.
- Spectrophotometer (Horiba Scientific Fluorolog3) and time-correlated single photon counting system, TCSPC (Horiba JobinYvon-IBH) for samples in solution as well as slurry state with temperature controller (Newport model 350B).
- Electrochemical experiments for OER and ORR activity (CHI and Biolab instrument) and hydrodynamic studies (Metrohm multichannel Autolab – M204).
- Computational skills using Gaussian, Materials Studio, Quantum Theory Atom in Molecule (QTAIM).

- SOFTWARE such as Mercury, Origin, Mestrenova, ImageJ, and TOPOSPRO.

## AWARDS AND ACHIEVEMENTS

- University Grants Commission (UGC) Senior Research Fellowship – 2024-2021
- University Grants Commission (UGC) Junior Research Fellowship – 2021-2019
- Qualified CSIR-UGC NET JRF in June 2018 with rank 63 and LS in December 2018
- Cover artwork selected for frontispiece in Wiley's Journal *Small* – 2024
- Cover artwork selected for supplementary cover in ACS journal *ACS Applied Energy Materials* – 2023
- Rank holder in Masters in Science Under Panjab University, Chandigarh, India – 2016

## PUBLICATIONS

### Manuscripts Published:

- Bhambri, H.; Mandal, S. K. Design and Prompt Synthesis of a Semiflexible Hydrazone-Linked Covalent Organic Framework with Binding Pockets for Lanthanides: Luminescent pH and Ratiometric Temperature Sensing. *Manuscript accepted in J. Mater. Chem. A. in September 2025. (Q1, Scopus indexed journal in RSC; Impact factor = 9.5)*
- Bhambri, H.; Rana, S.; Gogia, A.; Mandal, S. K. Nitrogen-Rich Mn-Based Metal Organic Frameworks for Small Molecule Adsorption and Activation Through Polarization. *Small* **2025**, 2503964. (Q1, Scopus indexed journal in Wiley; Impact factor = 12.1)
- Bhambri, H.; Mandal, S. K. Establishing Structure-Activity Relationship in Heterogeneous Catalysis of Three-Component Organic Coupling Reactions by Lewis Acidic Metal Sites and Polar Moieties. *ACS Appl. Mater. Interfaces.* **2025**, 17, 39254-39269. (Q1, Scopus indexed journal in ACS; Impact factor = 8.2)
- Bhambri, H.; Gogia, A.; Mandal, S. K. Flexible Linker Spacer Length Modulation in Cd-Based Metal–Organic Frameworks: Impact on Polarity and Sequestration Abilities. *Small* **2025**, 21, 2570100. (Q1, Scopus indexed journal in Wiley; Impact factor = 12.1)
- Bhambri, H.; Mandal, S. K. A Ni-Based Metal–Organic Framework with Polarizing Traits for Efficient Heterogeneous Catalysis in the Sustainable Synthesis of Oxazolidinones. *ChemCatChem* **2024**, 16, e202400429. (Q1, Scopus indexed journal in Wiley; Impact factor = 3.9)
- Bhambri, H.; Mandal, S. K. Strategic Design of Non-d<sup>10</sup> Luminescent Metal–Organic Frameworks as Dual-Mode Ultrafast and Selective Sensing Platforms for Aldehydes at the ppb Level. *Inorg. Chem.* **2024**, 63, 8685-8697. (Q1, Scopus indexed journal in ACS; Impact factor = 4.7)
- Bhambri, H.; Mandal, S. K. Strategic Design of a Rare Trigonal Symmetric Luminescent Covalent Organic Framework by Linker Modification. *J. Chem. Phys.* **2024**, 160, 054706. (Q1, Scopus indexed journal in AIP; Impact factor = 3.1)
- Gogia, A.; Bhambri, H.; Mandal, S. K. A Paradigm Shift in The Room-Temperature Self-Assembly of Tunable Metal–Organic Frameworks Composed of Flexible Neutral Linkers with Six N-Donor Atoms and A Curved Dicarboxylate. *J. Mater. Chem. A* **2024**, 12, 6476-6487. (Q1, Scopus indexed journal in RSC; Impact factor = 9.5)
- Bhambri, H.; Mandal, S. K. Impact of Conformational Isomerism in Two Zn-MOFs on the Multimedia Incarceration of Iodine: In-Depth Experimental and Computational Assessments. *ACS Appl. Energy Mater.* **2023**, 6, 12307-12317. (Q1, Scopus indexed journal in ACS; Impact factor = 5.5)
- Bhambri, H.; Gogia, A.; Mandal, S. K. Exploiting A Multi-Responsive Oxadiazole Moiety in One Three-Dimensional Metal–Organic Framework for Remedies to Three Environmental Issues. *ACS Appl. Mater. Interfaces* **2023**, 15, 8241-8252. (Q1, Scopus indexed journal in ACS; Impact factor = 8.2)
- Gandhi, S.; Sharma, V.; Koul, I. S.; Bhambri, H.; Mandal, S. K. A Microporous Ni(II) Metal–Organic Framework Nanostructure with an Aspartate-Derived Tricarboxylate for Gas/Vapor Sorption and Size-Selective CO<sub>2</sub> Chemical Fixation under Solvent-Free Conditions. *ACS Appl. Nano Mater.* **2023**, 6, 19756-19766. (Q1, Scopus indexed journal in ACS; Impact factor = 5.5)
- Bhambri, H.; Khullar, S.; Sakshi, Mandal, S. K. Nitrogen-Rich Covalent Organic Frameworks: A Promising Class of Sensory Materials. *Mater. Adv.* **2022**, 3, 19-124. (Q1, Scopus indexed journal in RSC; Impact factor = 4.7)
- Bhambri, H.; Kumar, S.; Mandal, S. K. Conformational Isomerism Involving the Carboxylate Groups of a Linker in Metal Organic Frameworks and its Distinctive Influence on the Detection of Ketones. *New J. Chem.* **2021**, 45, 20219-20226. (Q2, Scopus indexed journal in RSC; Impact factor = 2.5)
- Kumar, S.; Kumar, M.; Bhambri, H.; Mandal, S. K.; Bhalla, V. Understanding the Structural Modulations in Twisted Donor–Acceptor–Donor (D–A–D) Systems for Boosting Type I Photosensitizing Photocatalytic Activity. *ACS Appl. Mater. Interfaces* **2024**, 16, 67683-67696. (Q1, Scopus indexed journal in ACS; Impact factor = 8.2)
- Ghosh, S.; Kumar, S.; Suneesh, S.; Bhambri, H.; Mandal, S. K.; Ghosh, S.; Chowdhury, R.; Addy, P. S. One-Pot Synthesis of Vinylogous Cyano Aminoaryls (VinCAs) as Benzenic Fluorophores: Tailoring Diverse Emission Colors for White Light Emitting Materials and Cell Imaging. *J. Org. Chem.* **2024**, 89, 9303-9312. (Q2, Scopus indexed journal in ACS; Impact factor = 3.6)

- Mahesha, C. K.; Borade, S. A.; Tank, D.; Bhambri, H.; Mandal, S. K.; Sakhuja, R. Tandem Transformation of Indazolones to Quinazolinones through Pd-Catalyzed Carbene Insertion into an N–N Bond. *J. Org. Chem.* **2023**, *88*, 1457-1468. (Q2, Scopus indexed journal in ACS; Impact factor = 3.6)
- Das, M.; Jaswal, V.; Bhambri, H.; Das, P.; Maity, S.; Ghosh, P.; Mandal, S. K.; Sarkar, M. Two pillared-layer metal–organic frameworks based on the Pinwheel Trinuclear Carboxylate-clusters of Zn(II) and Co(II): synthesis, Crystal Structures, magnetic study, and Lewis acid catalysis. *Dalton Trans.* **2023**, *52*, 1449-1460. (Q1, Scopus indexed journal in RSC; Impact factor = 3.3)
- Ghosh, S.; Bhambri, H.; Singh, A. K.; Mandal, S. K.; Roy, L.; Addy, P. S. A Convenient Route to a Vinylogous Dicyano Aryl Based AIEgen with Switchable Mechanochromic Luminescence Properties. *Chem. Commun.* **2023**, *59*, 4463-4466. (Q1, Scopus indexed journal in RSC; Impact factor = 4.2)
- Borade, S. A.; Naharwal, S.; Bhambri, H.; Mandal, S. K.; Bajaj, K.; Chitkara, D.; Sakhuja, R. Synthesis of Modified Bile Acids via Palladium-Catalyzed C(sp<sup>3</sup>)–H (Hetero) Arylation. *Org. Biomol. Chem.* **2023**, *21*, 6719-6729. (Q2, Scopus indexed journal in ACS; Impact factor = 2.7)

#### Manuscripts Under Preparation/Revision/Submitted:

- Bhambri, H.; Mandal, S. K. In-depth Experimental and Mechanistic Studies of a Dual Functional Electrocatalyst for Oxygen Reduction and Evolution Reactions. *Manuscript submitted.*
- Bhambri, H.; Khullar, S.; Mandal, S. K. Tunable Three-Component Metal-organic Frameworks Consisting of Spanning Bis(Tridentate) Linkers with Six N-donor Atoms: Design, Synthesis, Properties and Applications. *Review article under preparation.*

#### CONFERENCES/SEMINARS/WORKSHOPS ATTENDED

- Hands-on training on using X-ray diffractometer from 10<sup>th</sup> June to 5<sup>th</sup> July, **2019** in Skill Development Program at **National Chemical Laboratory, Pune, India**
- Single Crystal X-ray Diffraction Workshop held on 27<sup>th</sup>-28<sup>th</sup> February, **2020** by Bruker at **Indian Institute of Technology, Kanpur, India**
- Theoretical calculations in a webinar on using SPARTAN software held for 2 days on 21<sup>st</sup> July, **2020** organized by **VIT Vellore, India**
- International workshop on Supporting Chemistry Research with modern DFT: Software, Techniques and Applications held on 5<sup>th</sup> - 16<sup>th</sup> February, **2021**
- CRIKC Chemistry Symposium held on 2<sup>nd</sup>-3<sup>rd</sup> November, **2019** and 29<sup>th</sup> CSRI-National Symposium in Chemistry & CRSI-ACS Symposium series in chemistry as a participant held on 7<sup>th</sup>-9<sup>th</sup> July, **2022** organized by **Indian Institute of Science Education and Research Mohali, India**
- 8<sup>th</sup> International Workshop on MOFs, MOF-2022 held in September, 2022 in **Dresden, Germany**
- Oral presentation at the International Conference on Electrochemical Science and Technology (ICONEST) held on 18<sup>th</sup>-20<sup>th</sup> September, **2024** organized by **CSIR-National Physics Laboratory, New Delhi**, and The Electrochemical Society of India, **IISc Bengaluru, India**
- Poster presentation in Smart Materials for Sustainable Technology (SMST) held on 24<sup>th</sup>-27<sup>th</sup> October, **2024** organized by **Indian Institute of Nano Science and Technology, Mohali, India**