Dr. Manas Khatua (He/His)-Curriculum Vitae

Dr. Manas Khatua (He/His)
Department of Chemical Sciences
Indian Institute of science Education and Research Kolkata (IISER-K), Mohanpur Campus,
Nadia-741246, West Bengal, India
Phone : +91-7278351072/+91-9051816257
E-mail : manaskhatua.1989@gmail.com/ mk15rs064@iiserkol.ac.in

[Education]

September, 2015 – Present Ph.D. in Chemistry.
Indian Institute of Science Education and Research (IISER), Kolkata, Nadia-741246, India.
Supervisor: **Dr. Subhas Samanta (**Assistant Professor, IIT Jammu, India**)**.
Co-supervisor: **Prof. Raja Shunmugam (**Professor, IISER Kolkata, India**)**.
Thesis title: **Transition Metal Complexes of Azo-aromatic and Phosphine Derived Pincer Like Ligands: Synthesis, Characterization and Reactivity Studies**.

August, 2012 – June, 2013 Guest Lecturer
Department of Chemistry
New Alipore College (University of Calcutta)
L Block, New Alipore, Kolkata – 700053, West Bengal, India

2010 – 2012 **Post Graduate** (Chemistry, Inorganic Specialization)
Department of Chemistry
Presidency University
(Formerly Presidency College, University of Calcutta)
86, 1, College Street, College Square,
Kolkata – 700073, West Bengal, India. 64.0 %
Supervisor: **Dr. Gurucharan Mukhopadhyay** (Associate Professor, Bidhannagar College, Kolkata, India).
Thesis title: **Preparation and Characterization of Ni(II) and Cu(II) Complexes with Tri-dentate Schiff Base Ligand and Tetra-dentate Unsymmetrical Schiff Base Ligand Involving N,N-Diethyl-1,3-Diamino Propane and 1,3-Diamino Propane**.

2007 – 2010	**Under Graduate** (Major – Chemistry, Minor – Physics, Mathematics) Department of Chemistry Maharaja Manindra Chandra College (University of Calcutta) 20 Ramakanto Bose Street, Shyambazar, Kolkata – 700003, West Bengal, India. 63.87 %
2005 – 2007	**12th Standard in Science,** WBCHSE, (Chemistry, Physics, Mathematics, Biology, English, Bengali) Baradongal Ramanath Institution Baradongal, Arambagh, Hooghly – 712601, West Bengal, India. 73.0 %
2005	**10th Standard,** WBBSE, Damodarpur High School Damodarpur, Goghat, Hooghly – 712601, West Bengal, India. 82.62 %

[Research Experience]

January, 2022 – Present

Research Fellow, Indian Institute of Science Education and Research (IISER), Kolkata, Nadia-741246, India.
Supervisor: **Prof. Sayam Sen Gupta**, Professor, IISER Kolkata, India.

January, 2018 – January, 2022

Senior Research Fellow, Indian Institute of Science Education and Research (IISER), Kolkata, Nadia-741246, India.
Supervisor: **Dr. Subhas Samanta,** Assistant Professor, IIT Jammu, India.
Co-supervisor: **Prof. Raja Shunmugam,** Professor, IISER Kolkata, India.

September, 2015 – December, 2017

Junior Research Fellow, Indian Institute of Science Education and Research (IISER), Kolkata, Nadia-741246, India.
Supervisor: **Dr. Subhas Samanta,** Assistant Professor, IIT Jammu, India.
Co-supervisor: **Prof. Raja Shunmugam,** Professor, IISER Kolkata, India.

January, 2012 – June, 2012

Master's thesis during Master of Science at Presidency University (formerly Presidency College), Kolkata – 73, India. Supervisor: **Dr. Gurucharan Mukhopadhyay,** Associate Professor, Bidhannagar College, Kolkata, India.

[Research Interest]

New Ligands Synthesis | Complex Synthesis | Main Group Chemistry | Organometallic Chemistry | Small Molecule Activation | Valorization of CO_2 into Fine Chemicals | (Co)Polymerization of Monomers | Asymmetric Catalysis | Homogeneous Catalysis | Mechanistic Studies |

[Publications]

1. Cobalt(II) Complexes of a Benzimidazole Functionalized Tridentate N-Donor Imino Pyridine Ligand: Synthesis Characterization and Phenoxazinone Synthase Activity Studies. B. Goswami, **M. Khatua,** S. Samanta* *J. Indian. Chem. Soc.,* **2018**, *95*, 813-820.

2. Dehydrogenation of Amines in Aryl-Amine Functionalized Pincer-Like Nitrogen-Donor Redox Non-innocent Ligands *via* Ligand Reduction on a Ni(II) Template. **M. Khatua**, B. Goswami, S. Samanta* *Dalton Trans.,* **2020**, *49*, 6816-6831.

3. Irreversible Resistive State Switching in Devices with a Homoleptic Cobalt Complex Active Layer. B. K. Barman,[#] **M. Khatua**,[#] B. Goswami, S. Samanta,* R. K. Vijayaraghavan* *Chem Asian J.* **2021**, *16*, 1545-1552 ([#]Equal Contribution).

4. Azide-Alkyne "Click" Reaction in Water Using Parts-Per-Million Amine-Functionalized Azoaromatic Cu(I) Complex as Catalyst: Effect of the Amine Side Arm. **M. Khatua**, B. Goswami, Kamal, S. Samanta* *Inorg. Chem.,* **2021,** *60 (23)*, 17537-17554.

5. Polymerization of Styrene using Pincer Type Amine Functionalized Azo Aromatic Complexes of Co(II) as Catalysts. B. Goswami, **M. Khatua,** S. Samanta* *Dalton Trans.,* **2022,** *51*, 1454-1463.

6. Efficient Azo-Aromatic Cu-catalysts Inspired by Galactose Oxidase: Impact of Amine Side Arm on Catalytic Aerobic Oxidation of Alcohols. **M. Khatua**, B. Goswami, S. Mazumder*, S. Samanta* *Under revision.*

7. A Phosphine Oxo Pincer Like (PN^3O) Cobalt Complex Catalyzed Direct Synthesis of Imines and Quinolines: A Comparative Study with its Phosphine Analogue. **M. Khatua**, B. Goswami, S. Samanta* *To be submitted soon.*

8. Efficient Synthesis of Quinolines by Azo-Amine and Azo-Imine Pincer Like Cobalt Complexes as Catalysts: Effect of the Amine Side Arm. B. Goswami, **M. Khatua,** S. Samanta* *To be submitted soon.*

9. Efficient Fixation of CO_2 to Epoxide under Atmospheric Pressure Using Azo-Aromatic Pincer Like Cobalt Complexes. B. Goswami, **M. Khatua,** S. Samanta* *Manuscript under Preparation.*

[Participation and Event Organization]

- Participated in **One day Symposium (Webinar) on Chemical Sciences, CRSI, Kolkata Chapter**, November, 2020.
- Conference Organized: **National Chemistry Scholars' Colloquium 2019**, Department of Chemical Sciences, IISER Kolkata, March, 2019.
- Poster presented on the tile **"Efficient Azo-Aromatic Cu-catalysts Inspired by Galactose Oxidase: Impact of Amine Side Arm on Catalytic Aerobic Oxidation of Alcohols"** in Chemical Science Conference -2019, IISER Kolkata Chapter, July, 2019.
- Poster presented on the title **"Dehydrogenation of Amines in Aryl-Amine Functionalized Pincer-Like Nitrogen-Donor Redox Non-innocent Ligands *via* Ligand Reduction on a Ni(II) Template"** in Chemical Science Conference, Indian Institute of Science Education and Research, Kolkata, December, 2017.

[Fellowships and Awards]

- Awarded Senior Research Fellowship (**SRF-NET**) in Chemical Sciences 2018 – 2020, University of Grant Commission, New Delhi, India.
- Awarded Junior Research Fellowship (**JRF-NET**) in Chemical Sciences 2015 – 2017, University of Grant Commission, New Delhi, India.
- Awarded **best poster presentation by ACS Omega** in Chemical Science Conference, December, 2017, Indian Institute of Science Education and Research, Kolkata – 741246.
- Qualified Graduate Aptitude Test in Engineering (**GATE**) – 2013 in Chemical Sciences, Indian Institute of Technology, India.
- Awarded **Merit Cum Means** Scholarship by Govt. of West Bengal in Master of Science, 2010-2012.

[Scientific Skills]

- Expertise in handling multi-step complex organic synthesis.
- Challenging ligand synthesis and their transition metal/main group complexes.
- Metal mediated catalysis and mechanistic insight.
- Expertise in handling moisture and air-sensitive multi step syntheses (Schlenk line/Glove box).

- Experience in handling hazardous, highly flammable, air and moisture sensitive materials and reagents.
- Purification of organic compounds by chromatographic techniques and their structural elucidation by various spectroscopic tools.
- Writing and presentation of research findings.

[Instruments Handling]

UV-vis spectrophotometer | FT-IR | ESI-MS | HRMS | NMR Spectroscopy | Cyclic Voltammetry (CV) | Coulometry | Spectroelectrochemistry | Elemental Analysis (CHN) | Electron Paramagnetic Resonance (EPR) | Single Crystal XRD | Powder XRD | Gas Chromatography (GC) | CD | TGA | Potentiometer | Colorimeter | Polarimeter | Conductometer| pH Meter | Atomic Absorption Spectroscopy (AAS) |

[Teaching Experience]

- Teaching Assistance for **"Principle of Inorganic Chemistry-First Raw Transition Metal Chemistry",** Spring, 2018, IISER Kolkata, class size ~60.

- Course Instructor for **"Atomic Structure"**, Under Graduate – 1st year (Major), July, 2012 – June, 2013, New Alipore College, Kolkata, India.

- Course Instructor for **"Chemistry of p-block Elements"**, Under Graduate – 2nd year (Major), July, 2012 – June, 2013, New Alipore College, Kolkata, India.

- Course Instructor for **"Bioinorganic Chemistry"**, Under Graduate – 3rd year (Major), July, 2012 – June, 2013, New Alipore College, Kolkata, India.

- Course Instructor for **"Basic Organic Chemistry"**, Under Graduate – 1st year (Minor), July, 2012 – June, 2013, New Alipore College, Kolkata, India.

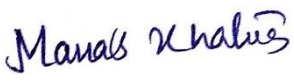
- Course Instructor for **"Practical Class – Qualitative Detection of Functional Group of Organic Compounds"**, Under Graduate – 1st year (Minor), July, 2012 – June, 2013, New Alipore College, Kolkata, India.

[Hobby]

- Playing Football, Recitation, Listening Music, Reading Story Book, Science Magazine.

I, Manas Khatua, hereby declare that all the information provided herein is true to the best of my knowledge.

Date: 01/05/2022



Manas Khatua

[References]

Dr. Subhas Samanta (Supervisor)
Assistant Professor
Department of Chemistry
Indian Instituite of Technology Jammu
Jagti, Jammu – 181221, India
Phone: +91-9797291869
Email: subhas.samanta@iitjammu.ac.in

Prof. Raja Shunmugam (Co-supervisor)
Professor
Polymer Research Center
Department of Chemical Sciences
Indian Institute of Science Education and Research, Kolkata
Mohanpur Campus, Nadia-741246, West Bengal, India
Phone: +91-33-2587-3121
Fax: +91-33-2587-3020
Email: sraja@iiserkol.ac.in
polyraja@gmail.com

Prof. Sayam Sen Gupta (Project Supervisor)
Professor
BICAM Lab
Department of Chemical Sciences
Indian Institute of Science Education and Research, Kolkata
Mohanpur Campus, Nadia-741246, West Bengal, India.
Phone: +91-9421914427
Email: sayam.sengupta@iiserkol.ac.in
sayam.sengupta@gmail.com