

Arijit Sarkar

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Date of birth: 25th February 1992

Nationality: Indian



Recent position

Jan 2021 – till date

Senior Research Fellow, IIT(ISM) Dhanbad, Jharkhand, India.

Submitted Ph.D. thesis. Title: “*Syntheses, Properties and Catalytic Applications of Polynuclear Coordination Clusters*”.

Supervisor: Dr. H. P. Nayek (Associate Professor, Dept. of Chemistry, IIT(ISM), Dhanbad, India).

Education and Training

July 2017 – Jan 2021

Senior Research Fellow, IIT(ISM) Dhanbad, Jharkhand, India.

Acquired experience in various organic transformation reactions catalyzed by polynuclear coordination complexes.

July 2015 – June 2017

Junior Research Fellow, IIT(ISM) Dhanbad, Jharkhand, India.

Acquired experience in multi-step synthesis of suitable ligands and multinuclear coordination clusters of lanthanide and transition metal ions.

May 2014 – July 2014

Internship, Presidency University, Kolkata, India.

Acquired experience in the synthesis of organoselenium compounds and submitted project report entitled “*Synthesis of Bioactive Aromatic and Aliphatic Organoselenium Compounds*”.

P.I.: Dr. K. P. Bhabak (Current position: Assistant professor, IIT Guwahati, Assam, India)

July 2013 – June 2015

MSc in Chemistry, IIT(ISM) Dhanbad, Jharkhand, India.

1st Class. Project report entitled “*Corrosion Inhibition of Mild Steel in 15% Hydrochloric Acid Solution by Synthesized Eco-friendly Organic Compounds*”.

Supervisor: Prof. Dr. M. Yadav (H.O.D, Dept. of Chemistry, IIT(ISM), Dhanbad, India)

July 2010 – June 2013

B.Sc. in Chemistry (Honors), University of Calcutta, India.

1st Class.

July 2008 – June 2010

Higher Secondary (10+2), WBCHSE, Kolkata, India.

1st Class.

July 2008

Secondary (10th), WBBSE, Kolkata, India.

1st Class.

Research related skills

- Worked on various organic transformations including C-C, C-N coupling reactions.
- Synthesis of heterocyclic compounds via one-pot multicomponent reactions.
- Multi-step synthesis of organic scaffolds and ligand molecules.
- Synthesis of multinuclear coordination clusters of lanthanide and transition metal ions.
- Handling of several types of hygroscopic reagents, air and moisture sensitive compounds (Schlenk technique).
- Purification of compounds using column chromatography, various crystallization techniques, fractional distillation (for volatile compounds).
- Standard analysis and characterization of organic compounds. NMR, GC-MS, LC-MS, HPLC (Data interpretation only). UV, IR, CV (Hand-on).
- Professional software: ChemDraw, MestReNova, Scifinder, MS office.

Publications

- A Pentanuclear Er(III) Coordination Cluster as a Catalyst for Selective Synthesis of 1,2-disubstituted Benzimidazoles
A. Sarkar, S. Jana and H. P. Nayek,* *Appl. Organometal. Chem.* **2021**. (Accepted)
- One-Pot and Solvent-Free Hantzsch Condensation Reaction Catalyzed by Mononuclear Dy(III) Complex
A. Sarkar, P. P. Mondal and H. P. Nayek,* *Chemistry Select*, **2020**, 5, 12302-12306.
- Trinuclear Lanthanide Coordination Clusters: Single-Molecule-Magnetic Behavior and Catalytic Activity in the Friedel-Crafts Alkylation Reaction
A. Sarkar, C. J. G. García, S. Benmansour and H. P. Nayek,* *ChemPlusChem*, **2019**, 84, 974-980.

Conferences attended

- Presented poster in National Conference on “Modern trends in Inorganic Chemistry” (MTIC-XVII), December 2019 organized by Dept. of Chemistry, IIT Guwahati.
- Participated in National Conference on “Recent Advances on Materials for Sustainable Energy (RAMSE 2018)”, March 2018 organized by Dept. of Chemistry, IIT (ISM), Dhanbad.
- Participated in “National Training Programme on Research Methodology”, December 2017, organized by Faculty Development Centre, IIT (ISM), Dhanbad.
- Participated in “Annual Workshop on Catalysis (WoC 2017)”, March 2017, organized by Dept. of Chemistry, IIT (ISM), Dhanbad.

Languages

- English, Bengali (mother language), Hindi.

References

Dr. Hari Pada Nayek
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Dr. K. P. Bhabak
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Prof. Dr. G. Udayabhanu
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