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Summary

I have overall 7 years of research experience and more than 4 years of post-Ph.D. experience in diverse positions. I am trained in the synthesis and characterization of new crystalline inorganic-organic hybrid materials and understand their structures and properties. Currently, I am working as an assistant professor of chemistry at Hemvati Nandan Bahuguna Garhwal University (A central University). Before joining here, I worked as a technical service specialist at Sigma-Aldrich (Merck KGaA) in Bangalore for 2.5 years and taught chemistry as an assistant professor at Ramananda college (West Bengal).

Work History: Roles and responsibilities

Current position (from 23rd Nov 2022) Assistant Professor at HNBGU

- Teach under and post-graduate students chemistry theoretical and practical courses
- Prepare lesson plans, test questions, and examine the university answer sheets.
- Carrying out research in the area of metal-organic frameworks (MOFs) based heterogenous catalysis, electrocatalysis, and magnetism.

8th Jan 2021 – 21st Nov 2022 - Assistant Professor of Chemistry *Ramananda College (West Bengal Govt. aided college, affiliation Bankura University)*

- Taught undergraduate students chemistry theoretical and practical courses
- Administrative works, arranging webinars, mentoring students etc.

8th Aug 2018 – 6th Jan 2021 - As a Specialist for Technical Service

Sigma-Aldrich Chemicals Pvt. Ltd. (Merck KGaA), Bangalore, Karnataka

- To provide scientific inputs and technical solutions to chemistry research problems.
- Troubleshoot customer complaints by analyzing test results.
- To recommend suitable products based on the customer's research interest.
- To provide safety and regulatory documents related to chemical on demand.

1st Aug 2017 -7th Aug 2018 - As a Research Associate

Indian Institute of Science (IISc), Bangalore

- Conducted independent research on new metal-organic frameworks (MOFs) and coordination polymers (CPs) studied their catalytic and conductive properties.
- Prepared scientific manuscripts and presented research results at conferences.
- Trained junior research fellows handling instruments, prepare manuscripts, and on various synthetic techniques.

Education

Aug 2011 - **Ph.D.: Chemistry (Thesis advisor – Prof. Srinivasan Natarajan)**

Jul 2017 *Solid State and Structural Chemistry Unit (SSCU), IISc - Bangalore*

- Designed and synthesized new MOFs and CPs with extended networks. Studied
- magnetic behavior of cluster-based CP compounds.
- Demonstrated selective absorption and separation behavior of porous CPs. Studied the
- role of new bifunctional (Lewis acidic and basic) MOFs as a heterogeneous catalyst for the tandem one-pot catalytic reaction.
- Studied other properties like proton conductivity, sensing, and gas adsorption.
- **Thesis title: “Copper-Azides: Syntheses, Structures, and Magnetic Behavior”**

Aug 2009 -

Jun 2011

Master of Science: Chemistry (Inorganic)

Banaras Hindu University – Banaras, Uttar Pradesh, India

Aug 2006 -

Jul 2009

Bachelor of Science: Chemistry (Honours)

University of Calcutta (Presidency College) – Kolkata, West Bengal, India

Accomplishments

- Received SERB TARE grant in 2022.
- Arranged a one-day national and international level webinars as convenor at Ramananda college which are RAMAN'21 and PCRA'Y-2022; respectively.
- Invited guest lecturer at Bankura University for both the PG semesters (from Jan 2022).
- Awarded Junior/Senior Research Fellowship from IISc (MHRD), 2011-2016.
- Received spotlight award in 2018, 2019 and Bumble-bee Award 2020 from Merck, India team.

Instrument and software knowledge

- Single Crystal and Powder X-ray diffractometers, UV-visible, Infrared, NMR Spectrometer, Photoluminescence Spectrophotometer, Thermogravimetric Analyzer, Differential Scanning Calorimeter.
- Experienced in analyzing results from Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM), Gas porosimeter, Physical Property Measurement System (PPMS), and superconducting quantum interference device (SQUID).

Research software knowledge

- WINGx, Diamond, Mercury, Ortep, Origin, ChemDraw, ACDLabs NMR processor, and GAUSSIAN98.

Other software and tools used

- Microsoft Office word, excel and PowerPoint, Adobe Photoshop, Salesforce (SFDC) as a customer relationship management (CRM) service, and SAP.

Presentations

- “*Stabilization of new metal-organic frameworks-based bifunctional catalysts for one-pot tandem and multicomponent catalytic reactions*” Conference on Advances in Catalysis for Energy and Environment (**CACEE -2022**) at TIFR Mumbai, India.
- “*Exploring Heterogeneous Catalytic Efficiency of New MOFs*” SCI-ROI@India Virtual Launch Event **2022**. (Section for the young stem professionals of India)
- “*Selective Separation of Aliphatic Nitriles Employing a Two-Dimensional Interdigitated Coordination Polymer*” International Symposium of Advanced Functional Materials (ISAFM), **2018**, IISER Trivandrum.
- “*Stabilization of Cu₇ Clusters in Azide networks: Syntheses, Structures and Magnetic behaviors*” Unit Day and In-House Symposium-**2015**, Solid State and Structural Chemistry Unit, IISc, Bangalore.

Publications

- "Friedländer, Knoevenagel, and Michael Reactions Employing the Same MOF: Synthesis, Structure, and Heterogeneous Catalytic Studies of $[\text{Zn}(\text{1,4-NDCA})(\text{3-BPDB})_{0.5}] \cdot (\text{DMF})(\text{MeOH})$ and $[\text{Cd}_4(\text{1,4-NDCA})_4(\text{3-BPDB})_4] \cdot 2(\text{DMF})$ " A. Sarkar, S. Mistry, S. Natarajan, *J. Phys. Chem. C* **2021**, *125*, 49, 27230–27240.
- "New Bifunctional Metal–Organic Frameworks and Their Utilization in One-Pot Tandem Catalytic Reactions" S. Mistry, A. Sarkar, S. Natarajan, *Cryst. Growth Des.* **2019**, *19*, 747–755.
- "Sustainable Growth and Lipid Production from *Chlorella pyrenoidosa* Using N-Doped Carbon Nanosheets: Unravelling the Role of Graphitic Nitrogen" A. Khanra, S. Sangam, A. Shakeel, D. Suhag, S. Mistry, M. P. Rai, S. Chakrabarti, M. Mukherjee, *ACS Sustainable Chem. Eng.* **2018**, *6*, 1, 774–780.
- "Synthesis, structures and magnetic studies of new copper-azides" S. Mistry, S. Natarajan, *Inorganica Chimica Acta*, Vol. *483*, **2018**, 26-38.
- "Selective Separation of Aliphatic Nitriles by Employing a Two-Dimensional Interdigitated Coordination Polymer" S. Mistry, R. Hota, S. Natarajan, *Chem. Asian J.* **2017**, *12*, 1807–1815. (Selected as Inside cover picture)
- "Organization of Copper Azide Clusters into Two-Dimensional Structures: Synthesis, Structure, and Magnetic Properties" S. Mistry, S. Natarajan, *Eur. J. Inorg. Chem.* **2017**, 2173–2183.
- "Syntheses, Structures, and Magnetic Behavior of New Azide Linked Compounds with One- and Two-Dimensional Structures" S. Mistry J.-P. Sutter, S. Natarajan, *Z. Anorg. Allg. Chem.* **2017**, *643*, 1730–1738. (Selected as Inside cover picture)
- "Stabilization of Cu_7 clusters in azide networks: syntheses, structures and magnetic behaviour" S. Mistry, J.-P. Sutter, S. Natarajan, *Dalton Trans.* **2016**, *45*, 5140–5150.
- "A Reactive Intermediate, $[\text{Ni}_5(\text{C}_6\text{H}_4\text{N}_3)_6(\text{CO})_4]$, in the Formation of Nonameric Clusters of Nickel, $[\text{Ni}_9(\text{C}_6\text{H}_4\text{N}_3)_{12}(\text{CO})_6]$ and $[\text{Ni}_9(\text{C}_6\text{H}_4\text{N}_3)_{12}(\text{CO})_6] \cdot 2(\text{C}_3\text{H}_7\text{NO})$ " S Mistry and S. Natarajan, *J. Chem. Sci.* **126**, **2014**, 1477–1491.

Reference

1. **Prof. Srinivasan Natarajan (Thesis advisor)**

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