Curriculum Vitae

Ketan Maru (26/07/1992)

PhD Scholar, Department of Chemistry

Sardar Vallabhbhai National Institute of Technology, Surat, India

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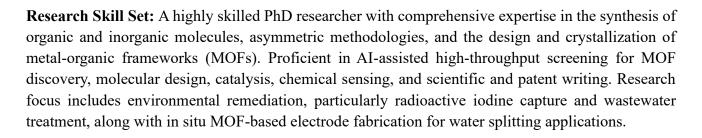
Language: Proficient in English, Hindi, and Gujarati; Open to acquiring

additional language skills as required

Hobbies: Experimental Chemistry, Exploring the Origin of Elements,

Stargazing, Graphical Designs (TOC), Cycling, and Fitness Enthusiast





Education

Ph.D. in Chemistry

• Sardar Vallabhbhai National Institute of Technology, Surat | 01/21-Present

M.Sc. in Chemistry

- Veer Narmad South Gujarat University, Surat | 06/2013-06/2015
- Specialization: Organic Chemistry

B.Sc. in Chemistry

• Veer Narmad South Gujarat University, Surat | 06/2010-06/2013

Awards & Achievements

- CSIR NET JRF | 12/2016
- GATE | 02/2017
- Junior Research Fellow | SVNIT | 01/2021-01/2023
- Senior Research Fellow | SVNIT | 01/2023-Present

Experience

- Production Chemist at Tata Rallis India, Ankleshwar | 08/2015-03/2016
- Junior Research Fellow at M.S. University, Baroda | Enzyme Catalyse Asymmetric Synthesis | 07/2017-01/2019



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 Assistant Professor at Bhagwan Mahavir College of Science and Technology, Surat | 01/2019-12/2020

Expertise

• Applications of Materials

Homogeneous and heterogeneous catalysis, membrane fabrication, bead preparation for filtration systems, wastewater treatment, dynamic filtration, biosensing, and dye adsorption.

• Analysis-Characterisation and Purification Techniques

FTIR, PXRD, BET surface area analysis, XPS, SEM, TEM, NMR, EPR, Raman spectroscopy, UV-Vis spectroscopy (solid and liquid state), Mass Spectroscopy, TGA, column chromatography, CombiFlash chromatography, single-crystal growth and crystallization techniques.

• Instrument Handling

FTIR spectrometer, Puriflash (CombiFlash system), UV-Vis spectrophotometer, TGA analyzer, PXRD diffractometer

• Software and Writing

Origin, Microsoft Office Suite, Mercury, Diamond, ORTEP, CasaXPS, MestReNova, Avogadro, ChemDraw, ImageJ, Blender. Proficient in patent drafting, scientific manuscript preparation, and research article reviewing.

Publications

- 1. <u>K. Maru</u>, S. Kalla, and R. Jangir, Filtration-Based Iodine Capture Using MOF-Embedded PVDF Beads: A Sustainable Strategy for Multiphase Iodine Sequestration. ACS Applied Nano Materials. (Under Revision; ACS applied nano materials)
- 2. <u>K. Maru</u>, S. Kalla, and R. Jangir, *Strategic Design of NH-Linked Ligand-Based Novel Zinc and Cadmium Metal-Organic Frameworks for Enhanced, Reversible, and Multi-Phase Iodine Sequestration. Small Methods*, 2025, DOI: 10.1002/smtd.202500101. (*Wiley*)
- 3. <u>K. Maru</u>, S. Kalla, and R. Jangir, Synthesis of Polyoxometalates-Loaded MOFs (POM@MOF) for Enhanced Dye Adsorption and Heterogeneous Catalysis. **Dalton Transactions**, 2025, 54 (1), 298–317. (RSC)
- 4. <u>K. Maru</u>, A. Singh, K. Jangir and R. Jangir, *Amyloid Detection in Neurodegenerative Diseases through MOFs. Journal of Materials Chemistry B*, 2024, 12, 4553-4573. (RSC)
- **5.** <u>K. Maru</u>, S. Kalla, and R. Jangir, Facile and Rapid Extraction of Dyes from Waste Water using In-MOF-Immobilized PVDF Membranes with Selective Filtration for Enhanced Remediation. Langmuir, 2024, 40, 15, 8144-8161. (ACS)
- **6.** <u>K. Maru</u>, S. Kalla, S. Ghosh and R. Jangir, Synthetic Strategies of Microcrystalline Indium (III)-Based MOF and Adsorptive Removal of Dyes. Research on Chemical Intermediates, 2023. (Springer)
- 7. <u>K. Maru</u>, S. Kalla, and R. Jangir, *MOF/POM Hybrids as Catalysts for Organic Transformations*. *Dalton Transactions*, 2022, 51, 11952-11986. (*RSC*)

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- 8. <u>K. Maru</u>, S. Kalla, and R. Jangir, *Dye Contaminated Wastewater Treatment through Metal-Organic Framework (MOF) Based Materials.* New Journal of Chemistry, 2022, 46, 3054–3072. (RSC)
- 9. <u>K. Maru</u>, S. Kalla, and R. Jangir, Unraveling the Role of Catalyst Architecture in Chan-Evans-Lam Coupling: Discrete Complex vs. Coordination Polymer. (Under Review; Journal of Materials Chemistry A; RSC)
- **10.** <u>K. Maru</u>, S. Kalla, P. Pataniya, and R. Jangir, MOF-Derived Electrocatalysts for Water Splitting: Comparative HER and OER Performance of SVNIT-1 and Cobalt-Based SVNIT-3 on Ni Foam. (Manuscript Completed)
- 11. <u>K. Maru</u>, S. Kalla, K. Jangir, and R. Jangir, *Silver-Confined SVNIT-1 Metal-Organic Framework as a Promising H₂S Sensor for Early Asthma Diagnosis*. Manuscript Completed. (*Manuscript Completed*)

Patents

1. Indium (iii)-based MOF and synthetic strategies thereof and adsorptive removal of dyes.

Number: 554308

Patent Grant Date: 13/11/2024

2. A Microwave-based Method for Synthesis of Indium (III)-based MOF

Number: 555545

Patent Grant Date: 29/11/2024

- **3.** Porous SVNIT@PVDF Beads for Efficient Multiphase Iodine Capture, Filtration, and Recovery (Status: Applied)
- **4.** Design and Synthesis of Novel Copper-Based Discrete Complex and 1D Metal-Organic Coordination Polymer based Nano-Sheets for Heterogeneous Catalysts in Chan–Lam Coupling Reaction (Status: Applied)