



Mitil Meghanath Koli
Environmental Science and Engineering
Indian Institute of Technology Bombay,
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ACADEMIC CREDENTIALS

Qualification	Board/University	Passing Year	Percentage/CGPA
Ph.D. (Environmental Science and Engineering)	Indian Institute of Technology Bombay	Thesis Submission 9.14 (October 2025)	
M.Tech. (Civil-Environmental Engineering)	Walchand College of Engineering, Sangli (an Autonomous Institute)	2019	9.01(First Rank in discipline)
B.E. (Civil Engineering)	Mumbai University	2016	8.56 (Third Rank in discipline/college)

PUBLICATIONS (Published)

- ❖ **Koli, M.,** Kanwar B., S. Ranil Wickramasinghe and Singh S. P. (2025) Tailoring Nanofiltration Membranes with MOF 303 Modified Support Layer for Enhanced PFAS and Heavy Metal Separation. *Desalination*, 119392 (**IF: 9.8**)
- ❖ **Koli, M.,** and Singh S. P. (2025) Fabrication of aluminum Metal-Organic Framework and Poly-ether sulfone composite ultrafiltration membrane for enhanced permeability and antifouling properties. *Separation and Purification Technology*, 371, 133210 (**IF: 9.0**)
- ❖ **Koli, M.,** Kanwar B. and Singh S. P. (2025) Impact of Operating Parameters on the Electrooxidation of Methylene Blue and Ciprofloxacin: A Comprehensive Analysis and Degradation Pathway. *Environmental Science and Pollution Research*, 32, 4656–4669
- ❖ Kanwar, B., **Koli, M.** and Singh, S.P. (2024) Antibiotic amoxicillin degradation by electrochemical oxidation process: effects of process parameters and degradation pathway at environmentally relevant concentrations. *Environmental Science and Pollution Research*, 32, 575-586
- ❖ **Koli, M.,** Ranjan R. R. and Singh S. P. (2023) Functionalized graphene-based Ultrafiltration and Thin-film composite Nanofiltration Membranes for Arsenic, Chromium, and Fluoride removal from Simulated Groundwater: Mechanism and effect of pH. *Process Safety and Environmental Protection*. 179, 603-617 (**IF: 7.8**)
- ❖ **Koli, M.** and Singh, S. P. (2023). Surface-modified ultrafiltration and nanofiltration membranes for the selective removal of heavy metals and inorganic groundwater contaminants: a review. *Environmental Science: Water Research & Technology*. 9, 2803-2829 (**IF: 3.1**)
- ❖ **Koli, M.** and Munavalli, G. R. (2021) Field-scale baffled and biorack hybrid constructed wetland: effect of fluctuating loading rates and recirculation for domestic wastewater treatment. *International Journal of Phytoremediation*. (**IF: 3.1**)
- ❖ Yenji, S. S., Munavalli, G. R. and **Koli, M.** (2021) Field-scale anaerobic baffled reactor for domestic wastewater treatment: effect of dynamic operating conditions. *Water Practice and Technology*. 16 (1): 42–58. (**IF: 1.8**)
- ❖ Munavalli, G. R., Sonavane, P. G., **Koli, M.** and Dhamangaonkar B. S. (2022) Field-scale decentralized domestic wastewater treatment system: Effect of dynamic operating condition. *Journal of Environmental Management*. 302(7):114014 (**IF: 8.91**)

PUBLICATIONS (Under Review/ under preparation)

- ❖ **Koli, M.,** and Singh S. P. (2025). Integrating Mg-MOF-74 into Polymeric Membranes: A Dual-Mode Strategy for Ultra and Nanofiltration Applications in Water Treatment. (Under Review in *Desalination*)
- ❖ **Koli, M.,** Kumar P., Misra U. and Singh S. P. (2025). Sustainably Engineered Graphene-Enhanced PES Ultrafiltration and Nanofiltration Membranes for High-Performance Groundwater Purification. (*Under Preparation*)

- ❖ Kumar P., Mukherjee P., **Koli M.**, Misra U. and Singh S.P. (2025). Enhanced Permeability, Selectivity, and Antifouling in PVDF-Arc Derived Graphene Membranes for Advanced Water Purification. (*Under Preparation*)
- ❖ Ranjan, R., **Koli, M.**, Singh, S.P. (2025). Performance Optimization of Thin-Film Composite Nanofiltration Membranes through Sulfonic Acid Functionalized Graphene Oxide (*Under Preparation*)
- ❖ Ranjan, R., Shingavi, S., **Koli, M.**, Singh, S.P. (2025). MIL-68 (Al) MOF blend Electrospun Nanofiber Omniphobic Membrane with Enhanced Anti-wetting and Membrane Distillation Performance (*Under Preparation*)

CONFERENCES (Published Papers/Abstracts/Extended Abstracts/Posters)

- ❖ **Koli, M. M.**, Ranjan R. & Singh S. P. (2024) Engineering Graphene Nanofiltration Membranes for Efficient Groundwater Contaminant Removal. *The 7th International Symposium on Physics of Membrane Processes (PMP2024) & The International Symposium on Separation Technologies Applied Research and Translation (IS-START2024)*, Nanyang Technological University, **Singapore (Best Poster)**
- ❖ **Koli, M. M.**, Ranjan R. & Singh S. P. (2024) Functionalized Graphene based Nanofiltration Membrane: A Solution Towards Groundwater Treatment. *EUROMEMBRANE 2024, Czech Republic*
- ❖ **Koli, M. M.**, Ranjan R. & Singh S. P. (2024) Tailored Graphene Nanofiltration Membranes for Selective Groundwater Contaminant Removal: Design, Characterization and Performance Assessment. *International Conference on Materials and Membranes for Water and Energy (ICMWME 2024) (Best Poster)*
- ❖ **Koli, M. M.**, Ranjan R. & Singh S. P. (2024) Selectivity Enhanced Functionalized Graphene Membranes for Groundwater Contaminants Removal. *National Environmental Conference*, IIT Bombay, Maharashtra, India
- ❖ **Koli, M. M.**, Ranjan R. & Singh S. P. (2023) Selectivity Enhanced Low-Pressure Nanofiltration Membranes for Groundwater Contaminants Removal. *Workshop on Biomimetic and Electroactive Membranes (BMEM 2023)*, IIT Bombay, Maharashtra, India (**Poster**)
- ❖ **Koli M.**, Ranjan R. and Singh S.P. (2023). Functionalized Graphene Oxide Low Pressure Thin Film Composite Membranes for Groundwater Heavy Metal Removal. *International Conference on Membrane Separations: Past, Present & Future*, Gujrat, India
- ❖ **Koli M.**, Ranjan R. and Singh S.P. (2023). Substrate Modified Low-Pressure Nanofiltration Membranes for Groundwater Contaminants Removal. *VIII International Conference on Sustainable Energy and Environmental Challenges (VIII SEEC)*, Jaipur, India
- ❖ **Koli M .M**, Singh S.P. (2022) Development of PVDF-GO based Mixed Matrix Membrane for Cr(VI) rejection: Effect of Solvent. *International Conference on Emerging Trends in Bioscience and Chemical Technology*. SMVDU, Katra, Jammu
- ❖ **Koli M .M**, Singh S.P. (2021) Symmetric Membranes: A new approach in membrane technology. *6th International Conference on Sustainable Energy and Environmental Challenges (Hybrid Mode)*,
- ❖ **Koli M. M**, Kanwar B., Singh S.P. (2022) Electrochemical treatment for Methylene Blue removal using graphite electrodes: Effect of voltage. *International Conference on Environmental Science and Engineering (Online Mode)*, IIT Bombay.
- ❖ **Koli, M. M.** & Munavalli, G. R. (2020) Application of first-order kinetic models for simulation of effluent COD in field-scale baffled and biorack hybrid constructed wetland. *INDACON 2020*. Indus University, Gujarat, India.
- ❖ **Koli, M. M.** & Munavalli, G. R. (2019) Development of field-scale composite biorack constructed wetland-startup phase. *E3S Web of Conferences*. 170 06009. *EVF'19*, MIT ADT, Maharashtra, India (**Full Paper Published**)
- ❖ **Koli, M. M.** Munavalli, G. R. & Wandare S. M. (2019) A study on brickbat as a supporting medium in constructed wetland. *Proceedings Volume of National Conference*. ISBN: 978-8-926416-6-9. *NCAICE 2019*, PESITM, Karnataka, India (**Full Paper Published**)
- ❖ **Koli, M. M.** & Munavalli, G. R. (2018) Development of baffled and biorack hybrid constructed Wetland: Initial Problems. *ICMES 2018*, Shivaji University, Maharashtra, India (**Poster**)

PATENT

Koli, Mitil Meghanath, and Singh Swatantra Pratap (2025). *Method for preparing metal-organic framework modified ultrafiltration membranes and thin film composite nanofiltration membranes*. Patent No. PAT/ES/10001830-1/24-25. Indian Patent. 07 April 2025 (Filed)

BOOK CHAPTER

- ❖ **Koli, M.M.**, Jashrapuria, K., Johari, A., Singh, S.P. (2022). Sequestering Groundwater Contaminants via Emerging Nanocomposite Adsorbents. In: Singh, S.P., Agarwal, A.K., Kumar, K., Srivastav, S.K. (eds) *Metal Nanocomposites for Energy and Environmental Applications. Energy, Environment, and Sustainability*. Springer, Singapore
- ❖ Sakalkale R., **Koli M.** and Singh S.P. (2025). Hollow Fiber Membranes: Fabrication, Fundamentals, and Emerging Applications for Sustainable Separations. *Catalysts for Desalination and Water Treatment*. Springer, Singapore (Under Review)

TECHNICAL SOCIETY MEMBERSHIPS

- ❖ Student Member of European Membrane Society (EMS)
- ❖ Member of International Water Association (IWA)

REVIEWED FOR JOURNALS

- ❖ Desalination and Water Treatment (2025), *Elsevier*
- ❖ Biodegradation (2025), *Springer*
- ❖ Desalination (2025), *Elsevier*
- ❖ Water Conservation Science and Engineering (2025), *Springer*
- ❖ Discover Applied Sciences (2025), *Springer*
- ❖ Accreditation and Quality Assurance (2025), *Springer*
- ❖ Scientific Reports (2023), *Nature*

RESEARCH SKILLSET

- ❖ Membrane Fabrication and Separation Process for Water and Wastewater Treatment (Flat Sheet and Hollow Fiber)
- ❖ Desalination using Membrane Process
- ❖ Advanced Oxidation Process
- ❖ Laser Induced Graphene
- ❖ Nanotechnology
- ❖ Constructed Wetlands

INSTRUMENTATION SKILLSET

- ❖ Zeta potential analyzer
- ❖ ICP-OES
- ❖ Contact angle goniometer
- ❖ Universal laser system for laser induced graphene synthesis
- ❖ Porometer

EXTRA CURRICULAR ACTIVITIES

- ❖ **Lead Coordinator - Conference** on Applied Membrane Technology and Translational Research (AMTTR 2025), Gogri Hub for Membranes Research, IIT Bombay - **2025**
- ❖ **Representative** for the Gogri Hub for Membranes Research at annual CSR Conclave, IIT Bombay
- ❖ **Representative** for DST India Water Week (2024) – Bharat Mandapam, New Delhi
- ❖ Exhibitor at International ChemTECH World Expo (2024) - Bombay Exhibition Centre, Mumbai
- ❖ **Lead Coordinator - Conference** on ‘Desalination, Brine management and Water recycling’ (DeSaltM 23), IIT Bombay – **July 2023**
- ❖ **Lead Coordinator - Faculty Development Workshops** on (1) An Overview of Recent Advances in Water and

Wastewater Treatment Technologies (2) Application of Nanotechnology in Water and Wastewater Treatment, IIT Bombay – Jan 2022

- ❖ Co-ordinating **International Conference on Environmental Science and Engineering**, IIT Bombay – Jan 2022
- ❖ Presented a proposal on portable water treatment system in the annual Corporate Social Responsibility **CSR Conclave**, IIT Bombay

INDUSTRY EXPERIENCE

- ❖ **Aquatech Systems Asia Pvt. Ltd.:** (August 2019 – August 2020) - Trainee Water and Wastewater Treatment Engineer
- ❖ **Internship at Sadekar Enviro Engineers Pvt. Ltd.** (June-July 2018) and **STUP Consultants Pvt. Ltd.** (June 2014)

TEACHING EXPERIENCE (PMRF Deliverables)

- ❖ Environmental Engineering Laboratory at SPCE, Andheri, Mumbai
- ❖ 'Biological Treatment Methods' at Walchand College of Engineering, Sangli, India
- ❖ 'Recent Advances in Pollution Control' at ADCET, Sangli, India
- ❖ Guest lectures on Environmental Engineering at NMCOE and KBPCOE colleges of Engineering

ACHIEVEMENTS

- ❖ **Best poster presentation award** at 7th *International Symposium on Physics of Membrane Processes (PMP2024)*, Singapore
- ❖ **Best poster presentation award** at *International Conference on Materials and Membranes for Water and Energy (ICMWME 2024)*
- ❖ **Best oral presentation award** at *National Environment Conference (2024)*
- ❖ **Best paper award** at *VIII International Conference on Sustainable Energy and Environmental Challenges (VIII SEEC)*
- ❖ **Best oral presentation award** at *International Conference on Membrane Separations: Past, Present & Future (2023)*
- ❖ **Prime Ministers Research Fellowship** – (Ministry of Education, Govt. of India) – July 2021
- ❖ **Best paper award** at *National Conference on Advancements and Innovations in Civil Engineering (2019)*
- ❖ Qualified **GATE 2017** examination
- ❖ **Sir Ratan Tata Scholarship** for Academic Excellence - (Sir Ratan Tata Trust, Mumbai) - 2014
- ❖ **INSPIRE-SHE Scholarship** for Academic Excellence - (Govt. of Maharashtra) - 2012

TECHNOLOGY SCALEUP GRANT

Received a Grant of **INR 30 lacs** for scaleup of nanofiller based membranes from the **SINE Business Incubation Centre, IIT Bombay**, Mumbai, India (PI: Prof. Swatantra Pratap Singh and Collaborator: Ms. Kritika)

DECLARATION

I do hereby declare that the above information is true to the best of my knowledge.

Place and Date: Mumbai – 09.09.2025


Mitil Meghanath Koli