

DR. MANISHA BAL

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Google Scholar Link: <https://scholar.google.com/citations?user=kj4LayEAAAAJ&hl=en>

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Area of Specialization: Air Pollution Control, Computational Fluid Dynamics, Waste Water Treatment, Energy & Environment, Plasma Technology

Educational Qualifications:

Doctor of Philosophy (Specialization: Air Pollution Control), Research Title “Design and Development of Venturi Scrubber for the Control of Air Pollutants” under supervision of Prof. B C Meikap, Indian Institute of Technology Kharagpur, West Bengal, 2019.

Masters of Technology (Chemical Engineering), Indian Institute of Technology Kharagpur, 2014. M. Tech Project was on “Hydrodynamics and Coal Particle Segregation in an Air Dense Medium Fluidized Bed” under supervision of Prof. B C Meikap.

Bachelor of Technology (Chemical Engineering), Durgapur Institute of Advanced Technology & Management, West Bengal, 2012.

Work Experience:

Postdoctoral Research Associate, Plasma Lab, Centre for Sustainable Technologies, Indian Institute of Science, Bengaluru, Karnataka (18th April, 2022 – Till Date)

Assistant Lecturer, Department of Chemical Engineering, NIT K Surathkal, Mangalore, Karnataka (From 6th Sep., 2021 to 18th April, 2022)

Assistant Professor, Department of Chemical Engineering, MVJ College of Engineering, White field, Bangalore (From 5th Aug., 2019 to 4th Sep., 2021)

Subject Handled:

Mechanical Operations, Heat Transfer, Solid Waste Management, Process Waste Water Management, Biochemical Engineering, Petrochemicals, Petroleum Refinery Processes

Laboratory Handled:

Heat transfer lab, Mechanical Operation Lab, Environmental Analysis Lab, Design and Simulation Lab

Sponsored Project:

- Title of Project: “Green Approach for Extraction of Nanocellulose and its Potential Application in Waste Water Treatment”, **Sponsored by IChE**, April, 2021. (Completed)
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Sponsored Conference:

- Conducted as Event Coordinator for AICTE Training and Learning (ATAL) Sponsored “One Week Online FDP on Data Science and Artificial Intelligence in Chemical Engineering: Recent trends and Future Outlook” Organized by Department of Chemical Engineering, MVJ College of Engineering under AICTE sponsored ATAL-FDP Scheme From 31st August to 4th September, 2021
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Paper Published in Journals:

1. **Manisha Bal**, Tejaswini Thamatham Reddy, B. C. Meikap, Removal of HCl gas from off gases using self-priming venturi scrubber. *J of Hazardous Material*, 364,2019, 406–418 [IP: 10.58; Citation: 29]. <https://doi.org/10.1016/j.jhazmat.2018.10.028>
2. **Manisha Bal**, Tejaswini Thamatham Reddy, B. C. Meikap, Performance evaluation of venturi scrubber for the removal of iodine in filtered containment venting system. *Chemical Engineering Research & Design*, 2018, 138, 158–167 [IP: 3.739; Citation: 11]. <https://doi.org/10.1016/j.cherd.2018.08.019>
3. **Manisha Bal**, B. C. Meikap, Prediction of hydrodynamic characteristics of a venturi scrubber by using CFD simulation. *South African J of Chemical Engineering*, 24,2017, 222-231 [SNIP: 1.408; Citation: 14]. <https://doi.org/10.1016/j.sajce.2017.10.006>
4. **Manisha Bal**, B. C. Meikap, Development of a computational model of venturi scrubber to simulate its performance for filtered vented containment system. *Recent Advances in Chemical Engineering*, 2016, 247-255 [Conference paper, Springer Publication; Citation: 3]. https://doi.org/10.1007/978-981-10-1633-2_27,
5. **Manisha Bal**, Subrata Biswas, Sushanta Kumar Behera, B. C. Meikap, Modelling and optimization of process variables for HCl gas removal by response surface methodology. *Journal of Environmental Science and Health, Part A*, 54:4, 2019,359-366 [IP: 1.536; Citation: 7]. <https://doi.org/10.1080/10934529.2018.1551650>
6. **Manisha Bal**, Remya Chinnamma Jose, B. C. Meikap, Control of accidental discharge of radioactive materials by filtered containment venting system: A Review, *Nuclear Engineering and Technology*, 51,2019, 931-942 [IP: 2.341; Citation:8]. <https://doi.org/10.1016/j.net.2019.01.008>
7. **Manisha Bal**, Hammad Siddiqi, Subhrajit Mukherjee, B. C. Meikap, Design of self-priming venturi scrubber for the simultaneous abatement of HCl gas and particulate matter from the flue gas, *Chemical Engineering Research & Design* 150, 2019, 311-319 [IP: 3.729; Citation: 19]. <https://doi.org/10.1016/j.cherd.2019.08.005>
8. **Manisha Bal**, Ipsita Dipamitra Behera, Usha Kumari, Subrata Biswas, B.C. Meikap, Hydrodynamic study and particulate matter removal in a self-priming venturi scrubber, *Environmental Technology & Innovation* 20 (2020) 101167. [IP: 5.263 ; Citation: 0] <https://doi.org/10.1016/j.eti.2020.101167>
9. Subrata Biswas, **Manisha Bal**, Sushanta Kumar Behera, Tushar Kanti Sen and B. C. Meikap, Process Optimization Study of Zn²⁺ Adsorption on Biochar-Alginate Composite Adsorbent by Response Surface Methodology (RSM), *Water*, 11, 325,2019,1-15 [IP: 3.103; Citation: 30]. <https://doi.org/10.3390/w11020325>
10. Hammad Siddiqi, **Manisha Bal**, Usha Kumari, B. C. Meikap, In depth physiochemical characterization and detailed thermo kinetic study of biomass wastes to analyze its energy potential, *Renewable Energy*,148,2020,756-771.[IP: 8.001 ; Citation: 22]. <https://doi.org/10.1016/j.renene.2019.10.162>
11. Usha Kumari , Hammad Siddiqi , **Manisha Bal** , B. C. Meikap, Calcium and zirconium modified acid activated alumina for adsorptive removal of fluoride: Performance evaluation, kinetics, isotherm, characterization and industrial wastewater treatment, *Advanced Powder Technology*, 31, 5,2020,2045-2060. [IP: 4.833, Citation: 16]. <https://doi.org/10.1016/j.apt.2020.02.035>
12. Subhrajit Mukherjee, Amit Verma, Subrata Biswas, **Manisha Bal**, Bhim Charan Meikap, “Removal of Cement Dust Particulates via Fully Submerged Self-Primed Venturi Scrubber”, *Clean – Soil, Air, Water*, 2021, 2000241. [IP: 1.6, Citation: 0] <https://doi.org/10.1002/clen.202000241>

Book Chapter:

- Vikas B. Kabburi and **Manisha Bal**, “Graphene - Based Nanomaterial Conjugates: Importance, Classification and Applications”, Book name: Sustainable Nanomaterials for Biomedical Engineering Impacts, Challenges, and Future Prospects, ISBN: 9781774911990, AAP, CRC Press (Taylor & Francis Group),2022 <https://www.worldbiologica.com/books/sustainable-nanomaterials-for-biomedical-engineering> (Accepted)

Papers Presented at Conferences:

1. Removal of Iodine by Venturi Scrubber in Filtered Containment Venting System by **Manisha Bal**, B. C. Meikap at “ASME Power &Energy Conference-2017”, held at Charlotte Convention centre, Charlotte, USA.
2. Performance Study and Model Development for the Removal of Iodine in Venturi Scrubber by Tejaswini Thamatham Reddy, **Manisha Bal**, B. C. Meikap at the “CHEMCON 2017” held at Haldia, West Bengal, India, organized by Indian Institute of Chemical Engineers (IChE).
3. Removal of Radioactive Material by a Venturi Scrubber by **Manisha Bal**, B. C. Meikap at the “CHEMCON 2016” , held at Chennai, India, organized by Indian Institute of Chemical Engineers (IChE).

4. Development of a Computational Model of Venturi Scrubber to Simulate its Performance for Filtered Vented Containment System by Manisha Bal, B. C. Meikap at the “International Conference on Advances in Chemical Engineering-2015”, held at NITK Surathkal, India.
5. Hydrodynamics and Coal Particle Segregation in an Air Dense Medium Fluidized Bed by Manisha Bal, B. C. Meikap at the “Environment management on coal based thermal power plants in Indian perspective-2013”, held at Kolaghat Engineering College, West Bengal, India.
6. Carbon Dioxide Removal from Off Gases in a Self Priming Submerged Venturi Scrubber by Manisha Bal, Amit Verma, B. C. Meikap at 21st International Conference on Energy, Environment and Sustainable Development held at Paris, France.
7. Removal of Air pollutant from the off gases in a Submerged Self Priming Venturi Scrubber by Manisha Bal, B. C. Meikap at the “ICCGE -2019” held at Milan, Italy organized by CBEES.
8. Optimization of Process Variables for the Removal of Carbon dioxide from Flue Gas Using a Submerged Self Priming Venturi Scrubber by Manisha Bal, Remya Chinnamma Jose and B. C. Meikap at the “ICCGE 2019” held at Milan, Italy organized by CBEES.
9. A Novel Technique to remove the Hydrogen Sulphide gas from the Off gases in Self Priming Venturi Scrubber by Manisha Bal, Remya Chinnamma Jose, B.C. Meikap at the “Fifth International Symposium on Green Chemistry, Sustainable Development and Circular Economy 2018” held at Skiathos, Greece.
10. Modified nano cellulose as adsorbent in a waste water treatment-review by Manisha Bal, Vanishree, Vanusha G T, Vinay S at the “Recent Innovations in Cleaner Technologies” held in MNIT Jaipur, India on 8th-9th March 2021

Awards & Achievements:

- **Ranked 2nd** in the Department of Chemical Engineering, Durgapur Institute of Advanced Technology & Management, West Bengal.
- **Topped in 8th** semester in the Department of Chemical Engineering, Durgapur Institute of Advanced Technology & Management.
- Received **Merit Cum Means Scholarship** in B.Tech.
- Performance study and model development for the removal of iodine in venturi scrubber by Tejaswini Thamam Reddy, **Manisha Bal**, B. C. Meikap has been awarded as "**Best Poster**" at the “CHEMCON 2017” held at Haldia, West Bengal, India, organized by Indian Institute of Chemical Engineers (IICChE).
- Removal of Air pollutant from the off gases in a Submerged Self-Priming Venturi Scrubber by **Manisha Bal**, B. C. Meikap has been awarded by “**Best Paper Presentation Award**” at the “ICCGE -2019” held at Milan, Italy organized by CBEES.
- Optimization of Process Variables for the Removal of Carbon dioxide from Flue Gas Using a Submerged Self Priming Venturi Scrubber by Remya Chinnamma Jose, **Manisha Bal**, B. C. Meikap has been awarded by “**Best Paper Presentation Award**” at the “ICCGE -2019” held at Milan, Italy organized by CBEES.
- Received **MHRD Fellowship** for Master Program
- Received **MHRD Fellowship** for Doctoral Program
- Achieved Google scholar **h index 8** and **i10 index 7**
- Awarded with "**Outstanding Contribution in Review**" from "Journal of Hazardous Materials" on Oct,2018

Reviewer Experience:

Reviewer of SCI/Scopus International journal like

- J. of Hazardous Material
- Nuclear Engineering and Design
- J of Environmental Science and Technology
- J of Environmental Science and Health, Part A

Personal Details:

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