

Dr. Sandeep Dharmadhikari

Assistant Professor

Department of Chemical Engineering
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EDUCATION

National Institute of Technology

Raipur (C.G.), India

Ph.D. (Chemical Engineering)

Thesis: Synthesis and characterization of proton exchange membranes and its application in microbial fuel cell.

Sardar Vallabhbhai National Institute of Technology

Surat (GJ), India

M. Tech. (Chemical Engineering)

Institute of Technology

Bilaspur (C.G.), India

B.E. (Chemical Engineering)

INDUSTRIAL/ACADAMIC EXPERIENCE

- Around Two years of Experience in Petrochemical Industry, India as an Assistant Engineer.
- Assistant Professor, Department of Chemical Engineering, School of Studies of Engineering and Technology, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur, Chhattisgarh, India (Dec. 2019 to till now).

AREAS OF INTEREST

- Fuel Cells
- Membranes
- Adsorption
- Water Treatment

SCI/SCIE/SCOPUS JOURNAL PUBLICATIONS

- **Sandeep Dharmadhikari**, Prabir Ghosh and Manivannan Ramachandran (2018), Synthesis of proton exchange membranes for dual-chambered microbial fuel cells, *Journal of Serbian Chemical Society*, vol. 83, pp. 611-623.
- **Sandeep Dharmadhikari**, Prabir Ghosh, Manivannan Ramachandran and Vijyendra Kumar (2019), Review on proton exchange membranes and its application in microbial fuel cells, *International Journal of Mechanical Engineering and Technology*, vol. 9, pp. 1632-1641.
- **Sandeep Dharmadhikari**, Damodhar Ghime and Vijyendra Kumar (2019), in microbial fuel cells, Effect of molecular weight on proton exchange membranes and its application with different design of dual chambered microbial fuel cells, *Rasayan Journal of Chemistry*, vol. 12(4), pp. 2103-2110.

- Vijyendra Kumar, Neha Pandey, **Sandeep Dharmadhikari** and Prabir Ghosh (2019), Degradation of mixed dye via heterogeneous Fenton process: Studies of calcination, toxicity evaluation and kinetics, *Water Environment Research*, pp. 1-11.
- Vijyendra Kumar, Titikshya Mohapatra, **Sandeep Dharmadhikari** and Prabir Ghosh (2020), A Review paper on Heterogeneous Fenton Catalyst: Types of preparation, modification techniques, factors affecting the synthesis, characterization and application in the wastewater treatment, *Bulletin of Chemical Reaction Engineering & Catalysis*, vol. 15(1), pp. 1-34.
- Shreyas Gondudey, Parmesh Kumar Chaudhari, **Sandeep Dharmadhikari** and Raghwendra Singh Thakur (2020), Treatment of sugar industry effluent using electrocoagulation process: Process optimization using response surface methodology, *Journal of Serbian Chemical Society*, vol. 85(10) 1357–1369.
- Kosuri Praveena, **Sandeep Dharmadhikari**, Ghoshna Jyoti and Manivannan Ramachandrana (2020), Synthesis and characterization of cellulose acetate based proton exchange membranes, *Journal of Indian Chemical Society*, vol. 97, 1025-1028.
- Saurabh Meshram, Anuradha Nanewar Joshi, **Sandeep Dharmadhikari** and Raghwendra Singh Thakur (2020), Adsorption of cadmium from water using activated carbon derived from Ipomoea Carnea using chemical impregnation, *Earth and Environment Science*, vol. 597, 597 012005.
- Prabir Ghosh, Damodhar Ghime, Titikshya Mohapatra, **Sandeep Dharmadhikari**, Neelam Sonwani, Saket Pradhan (2021), ZnO/bone-char hybrid composite: Catalyst preparation, characterization and its application, *Iranian Journal of Chemistry and Chemical Engineering*, [doi.10.30492/IJCCCE.2021.137879.4377](https://doi.org/10.30492/IJCCCE.2021.137879.4377)

ORAL/POSTER PRESENTATIONS AT NATIONAL/ INTERNATIONAL CONFERENCES

- **Sandeep Dharmadhikari**, Prabir Ghosh, Manivannan R., “Characterization and application of proton exchange membranes in microbial fuel cell”, CHEMCON’16, Indian Institute of Technology, Madras, December 27th - 30th, 2016.
- **Sandeep Dharmadhikari**, “Synthesis of proton exchange membranes using different polymeric systems for a dual chambered microbial fuel cell”, International Conference on Membrane Technology and its Application (MEMSEP) -2017, Indian Membrane Society at National Institute of Technology, Tiruchirappalli, Tamil Nadu, India, January 21th - 23rd, 2017.
- **Sandeep Dharmadhikari**, “Synthesis of proton exchange membranes using various water soluble polymers and evaluate the performance in microbial fuel cell”, Fourth International Conference on Membrane (ICM), Department of Chemistry, St. Michael’s College, Cherthala, Kerala, Sept. 30th - Oct. 3rd, 2017.
- Prabir Ghosh and **Sandeep Dharmadhikari**, “Synthesis of proton exchange membranes using graphene oxide for the dual chambered microbial fuel cell application”, International Membrane Science and Technology Conference (IMSTEC 2020) Sydney, Australia, Feb.2th - Feb. 6th, 2020.
- **Sandeep Dharmadhikari**, “Modification of Nafion 117 and evaluate the performance in continuous dual chamber microbial fuel cell”, International conference on waste management, Recycle 2020, Indian Institute of Technology Guwahati, Assam, Feb.13th - Feb. 14th, 2020.
- **Sandeep Dharmadhikari**, “Synthesis and Characterization of cellulose acetate based proton exchange membranes”, National Conference on Nanotechnology & Environment (NCNE 2020), National Institute of Technology Raipur, Chhattisgarh, Feb.13th - Feb. 14th, 2020

WORKSHOPS/ SEMINAR/SHORT TERM TRAINING PROGRAMME (STTP)

- Workshop on “**Latest Development status of Renewable Energy Sources in India**” Department of Chemical Engineering 13th Oct., 2007 at Institute of Technology Guru Ghasidas University, Bilaspur (CG).
- STTP on “**Recent Advances in Chemical Engineering Operation and Process in Chemical and Allied Industries**” Department of Chemical Engineering from 05th to 06th Feb., 2008 at Institute of Technology Guru Ghasidas University, Bilaspur (CG).
- Workshop on “**Nanotechnology Applications for Sustainable Development**” Department of Chemical Engineering, during 19th to 21th April, 2013 at Sardar Vallabhbhai National Institute of Technology, Surat (GJ).
- Workshop on “**Comsol Multiphysics Modeling**” Department of Chemical Engineering, on 6th Dec., 2013 at Sardar Vallabhbhai National Institute of Technology, Surat (GJ).
- STTP on “**Elements of Research and Hands-on Session on Selection of Research Area and Writing of Research Paper**” Department of Chemical Engineering, during 20th to 24th March, 2017 at National Institute of Technology, Raipur (C.G.).
- Workshop on “**Recent Challenges and Opportunities in Chemical Engineering**” Department of Chemical Engineering, on 30th March, 2017 at National Institute of Technology, Raipur (C.G.).
- STTP on “**Emerging Research Trends in Chemical & Environmental Technology**” Department of Chemical Engineering, during 06th May to 10th May, 2019 at National Institute of Technology, Raipur (C.G.).
- STTP on “**Techno- Economic solution for sustainable municipal solid waste management for development of smart cities in India**” 01st September, 2020 to 05th September, 2020 at AICTE sponsored by department of Chemical Engineering, IPS Academy, Institute of Engineering & Science Indore (M.P.)
- Workshop on “**Future of Chemical Engineering**” 19th March, 2021 to 21st March, 2021 at TEQIP-III Department of Chemical Engineering, Indian Institute of Technology, Dhanbad, India.
- STTP on “**Application of Nanotechnology and Nano Science in Science, Engineering and Technology**” 12th July, 2021 to 17st July, 2021 at AICTE sponsored, Department of Chemical Engineering, PIET, Nagpur, India.
- National Workshop on, “**Emerging trend in the research areas and opportunities in science and technology**” 31th July, 2021 at School of Studies of Engineering & Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

FAULTY DEVELOPMENT PROGRAM (FDP)

S. No.	Programme	Duration	Organised by
1.	FDP on “Advanced Engineering materials for strategic and societal sectors- current perspectives	One week	Vel Tech High tech Dr. Rangarajan Dr. Sakunthala Engineering college, Chennai (India)
2.	FDP on “Process optimization using design of experiments”	One week	R.N.G. Patel Institute of Technology Gujarat (India)

3.	FDP on “Challenges and opportunities in recent emerging Technologies”	One week	TEQIP-III and Department of Chemical Engineering SGGSI&T, Nanded, MH
4.	FDP on “Sustainable Environment- An Engineering Perspective, 2020”	One week	TEQIP-III and Assam Engineering College Jalukbari, Guwahati
5.	International FDP on “Block chain and it’s application”	One week	TEQIP-III and G.B. Pant Institute of Engineering & Technology Pauri Gharwal, Uttarakhand
6.	FDP on “Disaster management mitigation and responses, 2020”	One week	TEQIP-III and Assam Engineering College Jalukbari, Guwahati
7.	FDP on “Blended Learning and Flipped Classroom	One week	AICTE-ATAL
8.	FDP on “Learning Management System”	One week	AICTE-ATAL
9.	FDO on “Inculcating Universal Human Values in Technical Education”	One week	AICTE, New Delhi
10.	FDP on “Fuel Cell Technology”	One week	AICTE-ATAL NIT, Raurkela
11.	FDP on “Novel Materials: Advances and Application”	One week	AICTE-ATAL NIT, Raipur

ACHIEVEMENTS

- Qualified in Graduate Aptitude Test in Engineering (**GATE-2012**).
- MHRD fellowship for 2 years during my M. Tech. program.
- Getting MHRD fellowship during my Ph.D.
- Successfully completed National Initiative for Technical Teachers Training (AICTE-NITTT) Programme (**PHASE-I**).
- Successfully completed UGC-Sponsored “**Guru Dakshita**” Faculty Induction Programme (Online) organised by Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.)
- Successfully completed two week interdisciplinary refresher course in “*Advances Concepts in Developing MOOCs*” organised by Teaching Learning Centre, Ramanujan College, University of Delhi, India
- Successfully completed NPTEL online certification course in “*Chemical Process Control*”.

PATENTS

- No. of Patent: One (**Patent No. 103422**)

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Life Associate Member of Indian Institute of Chemical Engineers (IChE)- (**LAM-61711**)
- Life Associate Member of The Institution of Engineers (IEI)- (**AM 1982527**)

COURSES TAUGHT

- Process Dynamics and Control

- Water Conservation and Management
- Petroleum Refinery Engineering
- Petrochemical Technology

LABORATORY FACULTY IN-CHARGE

- Heat Transfer
- Process Dynamics and Control
- Mass Transfer

INVITED TALK

Talk on “**Bio-Energy: A Path Towards Sustainable Future**” 18th June 2020 organized by School of Agriculture and processing science Kalasalingam Academy of Research and Education, Srivilliputhur, Tamil Nadu, India

WORK AS REVIEWER FOR FOLLOWING SCI/SCIE JOURNALS

- Journal of the Environmental Treatment Techniques
- Journal of Agriculture and Food Research
- International Journal of Chemical and Molecular Engineering
- International Journal of Chemical Separation Technology

RESPONSIBILITIES

- Committee member of games and sports committee (2019-20).
- Acted as Judge in Tech fest activities at departmental level (2019-2020).
- Co-coordinator of Students Induction Programme (AICTE-SIP) committee at SoS., Engg. & Tech., GGV, Bilaspur (C.G.) (2020-21, 2021-2022).
- Committee member of GGV Alumni cell at SoS., Engg. & Tech., GGV, Bilaspur (C.G.) (2020-21, 2021-2022)
- Committee member of file handling committee of first year counselling (2020-21).
- Committee member of DRC Committee in Department of Chemical Engineering, SoS., Engg. & Tech., GGV, Bilaspur (C.G.) (2021-22, 2022-2023).
- Committee member of AICTE Committee at SoS., Engg. & Tech., GGV, Bilaspur (C.G.) (2020-21, 2021-2022)
- Counting officer-II for student council election of university level (2020-21).
- First Year Section In-charge of Department of Chemical Engineering (2021-22).
- Committee member of Entrepreneurship Cell from the Department of Chemical Engineering, SoS., Engg. & Tech., GGV, Bilaspur (C.G.) (2021-22).
- Committee member of Renewable Energy Club of SoS., Engg. & Tech., GGV, Bilaspur (C.G.) (2021-22).
- Committee member of IIE student’s chapter of SoS., Engg. & Tech., GGV, Bilaspur (C.G.) (2021-22).

(Dr. Sandeep Dharmadhikari)