

## Short CV of Prof. M K Purkait

### **Dr. Mihir Kumar Purkait**

Chair Professor, National Jal Jeevan Mission (Govt. of India)  
Professor (HAG), Department of Chemical Engineering,  
Indian Institute of Technology Guwahati  
Guwahati-781039, Assam, India,  
E-mail: mihir@iitg.ac.in mihirpurkait@gmail.com  
Phone: +91-9954248807



### **Details CV:**

[https://www.iitg.ac.in/chemeng/faculty\\_projects.php?name=mkp](https://www.iitg.ac.in/chemeng/faculty_projects.php?name=mkp)

### **Publications:**

<https://scholar.google.co.in/citations?user=9Z4kD-sAAAAJ&hl=en>

### **Books published:**

[https://www.amazon.in/s?k=mihir+kumar+purkait&crd=1QLRVAT86FUSN&sprefix=mihir+kumar+Purkait%2Caps%2C236&ref=nb\\_sb\\_ss\\_ts-doa-p\\_1\\_19](https://www.amazon.in/s?k=mihir+kumar+purkait&crd=1QLRVAT86FUSN&sprefix=mihir+kumar+Purkait%2Caps%2C236&ref=nb_sb_ss_ts-doa-p_1_19)

Dr. Mihir Kumar Purkait is a Professor (HAG) in the Department of Chemical Engineering at Indian Institute of Technology Guwahati (IITG). Presently he is Chair Professor of National Jal Jeevan Mission (NJJM), Min. of Jal Shakti (Govt. of India). He is energetically involved in frontier areas of Chemical Engineering with his major research interest in the field of advanced separation processes and material science.

Prof. Purkait has done outstanding contribution in translational and applied research on two major SDGs (SDG 6: Clean Water and Sanitation; SDG 9: Industry and Innovation; SDG 12: Production). Quality and quantity of his research is reflected in terms of large number of publications, patents, technology transfer, start-ups, projects, consultancies and involvement with various national and international scientific committees. His work has remarkable relevance in societal as well as industrial sectors.

He has more than 20 years of experience in research & academics and published more than 300 papers in different reputed international journals with h-index of 75 and 14 granted patents and made 3 technology transfer. He has authored 20 books, completed 42 sponsored projects/consultancies from various funding agencies. Prof. Purkait has supervised 24 PhD students on fundamental and applied research.

### Academic qualifications:

**Post PhD Research:** Massachusetts Institute of Technology (MIT), USA (2010-2011).

**Ph.D:** Indian Institute of Technology, Kharagpur, 2004.

**M.Tech:** Chemical Engineering, Indian Institute of Technology, Kharagpur, 2001.

**B. Tech:** Chemical Engineering, University of Calcutta, 1999.

**B.Sc** (Hons in Chemistry), University of Calcutta, 1996

### Present and past positions held:

- Chair Professor, National Jal Jeevan Mission (Govt. of India), 02/03/2022 onward.
- Dean, Alumni and External Relations, 1<sup>st</sup> January 2021 to 6th March 2024, IIT Guwahati.
- Head, Centre for the Environment: 15<sup>th</sup> May, 2018 to 31<sup>st</sup> January 2021, IIT Guwahati.
- HAG Professor: July 2022 onward, Dept. of Chemical Engineering, IIT Guwahati.
- Professor: July 2015 onward, Dept. of Chemical Engineering, IIT Guwahati.
- Associate Professor: Nov. 2008 to July, 2015, Dept. of Chemical Engineering, IITG.
- Assistant Professor: Sept. 2005 to Nov. 2008, Dept. of Chemical Engineering, IITG.
- Sr. Lecturer: Dec. 2004 to Sept. 2005: Dept. of Chemical Engineering, IITG.

### Honorary positions:

- Visiting Scientist, Department of Chemical Engineering, Massachusetts Institute of Technology (MIT), USA, July 2010 – June 2011.
- Visiting Professor, National Ilan University (NIU), Taiwan, May – July, 2017
- Visiting Expert, National Yunlin University of Sci. and Technology (Yun Tech), Taiwan, May 2018.
- Visiting Professor, National Ilan University (NIU), Taiwan, June – July, 2018
- Visiting Professor, GIFU university, Japan, May-June, 2019

### Fellowships

1. Fellow of Royal Society of Chemistry (**FRSC**), UK (2017, F-638258)
2. Fellow of the Institution of Engineering and Technology (**FIET**), UK (2020)
3. Fellow of West Bengal Academy of Science and Technology (**FAScT**) 2021
4. Fellow of Institute of Engineers (India) (**FIE**) (2016, F-1219320)
5. Fellow of Indian Institute of Chemical Engineers (**IIChE**) (2020, LF-19472)
6. Fellow of Indian Desalination Association (**FInDA**)
7. BOYSCAST Fellow for the year (2010), (**DST**), Govt. of India.

### Awards/Honors/Recognitions:

1. NASI-Reliance Industries Platinum Jubilee Awards – 2022 from National Academy of Sciences (**NASI**), 2022.
2. Abdul Kalam Technology Innovation National Fellowship from Indian National Academy of Engineering (**INAE**), 2020.
3. Young Scientist Medal Award from the Indian National Science Academy (**INSA**), 2009.

4. Young Scientist Award from the Department of Science & Technology (**DST**), (2009) Govt. of India.
5. Herdillia Award for Excellence in Basic Research in Chemical Engineering for the year 2018 from Indian Institute of Chemical Engineers (IChE).
6. The Young Engineers Award in the field of Chemical Engineering from The Institute of Engineers (India), 2009.
7. Dr. A.V. Rama Rao Foundation's Best Ph.D Thesis and Research Award in Chemical Engineering/Technology" for the year 2007 from Indian Institute of Chemical Engineers (**IChE**).
8. Rajiv Gandhi Shiromani Award, from National Integration and Economic Council, 2007.
9. Indira Gandhi Sadbhavna Gold Medal Award for outstanding contribution in health, education, industry and social service from Global Economic Progress & Research Association, Bangalore, 2013.

#### Association with professional bodies:

- LMEEIU (Life member, Eco Ethic International Union - Germany)
- LMIICHE (Life member, Indian Institute of Chemical Engineers - India)
- LMISLCA (Life member, Indian Society for Life Cycle Assessment, India)
- LMNEEF (Life member, National Ecology and Environment Foundation, India)
- LMGEPR (Life member, Global Economic Progress & Research Association)

#### Member of important committee

1. **Expert Consultative Committee** (ECC) member of "**Waste to Wealth (W2W)** Mission". Office of Principal Scientific Advisor to the Govt of India, New Delhi, August, 2023 Onward.
2. Core Member of Programme Advisory Committee on Chemical and Environmental Engineering (**PAC-CEE**). Science and Engineering Research Board (**SERB**), **DST**, New Delhi, 12/07/2021 on ward for 3 years.
3. Chairman of Technical Sub-Committee on "**Agri-Waste Management**" of Waste to Wealth Mission of Office of Principal Scientific Advisor to the Government of India (**PSA-Gol**), 2022 onward.
4. Special Invitee Member in the Technical Committee under Chairmanship of Principal Scientific Advisor (**PSA**) to the Govt of India for examination and use of innovative technologies in drinking water and sanitation sector. September, 2022 onward.
5. State Level Task Force Member (**TFM**) in the Atal Mission for Rejuvenation and Urban Transformation (**AMRUT**), Govt of Assam, India, 2022 onward.
6. **Expert Consultative Committee** (**ECC**) member of "**Waste to Wealth**" Mission under The Prime Minister's Science, Technology and Innovation Advisory Council (**PM-STIAC**), New Delhi, January 2021 – 2022.

7. **Esteem Expert** Panel Member of Water Technology Initiative Programme, DST, Govt. of India (**WTI (DST)**), 2021 onward.
8. **PAC member** of Department of Biotechnology (**PAC-DBT**), Govt. of India, 2020-2022.
9. **Independent "Technical Expert"** of Water Quality India Association (WQIA), January 2023 onward.
10. **Expert** in Faculty selection committee in several IITs, NITs and Universities.
11. **Expert member** for the project evaluation committee European Science Foundation (ESF), France, 2020 onward and FWO (Belgium).
12. **International PAC** member of Fonds Voor Wetenschappelijk Onderzoek (*Fund for Scientific Research; Flanders, Belgium, Brussel*) **FWO** 2022 onward.
13. **Water Quality Task Force** member of **PHED**, Govt. of Assam, Since July, 2016.
14. **Advisory of 107 MLD drinking water supply plant** of *GAMMON India, Ltd, Guwahati*. Since Aug, 2017.
15. Core Committee member of **Task Force PHED**, Govt of Assam, Since Oct, 2017.
16. **Expert committee** member for the selection of sector expert for ground truthing and technical assistance in implementation of Jal Jeevan Mission (JJM), National centre for drinking water, sanitation and quality.
17. **Advisor** of IOCL, Betkuchi terminal for their Rain water harvesting plant since Oct, 2019.
18. **Technical director** of *M/s Vixudha Bio Products Pvt. Ltd.* for commercial production of various antioxidants from biological sources. Since July, 2018
19. **Technical director** of *RD Grow Green India Pvt. Ltd.* manufacturing water treatment plant. Since May. 2016
20. Associate Editor for 5 years from Oct. 18, 2010, International Journal of Chemical Research.
21. Associate Editor for 5 years from Oct. 18, 2010, Journal of Biomedical and Bioengineering.
22. Editorial Board Member Journal of Membrane Science & Technology.
23. Guest Editor, Special Issue on "Waste Management using BioScience and Technology" in the International Journal of BioSciences and Technology.(2008).
24. Editorial Board member of International Journal of Chemical Engineering Research
25. Honorary Member of the Editorial Board of the International Journal of BioSciences and Technology.(2008).
26. Member of the Editorial Board of the International Journal of Nano Science and Technology, (2012).

## Broad area of research:

- Separation processes: (Adsorption, extraction, electrocoagulation, various surfactant mediated processes, RO/NF/UF/MF etc)
- Membrane technology: Smart/stimuli responsive membranes (Fabrication and application of Ceramic/polymeric membranes for environmental, biological and chemical separation).
- Advanced materials
- Catalysis, Nanoparticles and nanocomposites
- Environmental pollution control
- Green chemistry, Waste to value added products
- Treatment of industrial effluent and waste management
- Bio-diesel, Bio-products
- Fruit and vegetable juice processing
- Extraction of value added products from plant and industrial sources
- CO2 sequestration.

## Research output: (Contribution and citation)

Books Published = <b><u>20</u></b> Book Chapters = <b><u>68</u></b> Paper published <b><u>&gt;300</u></b>	Citation: <b><u>&gt;17000</u></b> h - index: <b><u>75</u></b> i10 - index: <b><u>193..</u></b>	Post doc = 4 PhD supervised : <b><u>24</u></b> Current PhD students: <b><u>11</u></b> M Tech Thesis supervised: <b><u>44</u></b>
Project completed: >42 (DST, DBT, DRDO, CSIR, State Govt. etc)	Patent granted = <b><u>14</u></b>	Startup company: <b><u>2</u></b> Centre for Excellence = <b><u>2</u></b> Technology transferred = <b><u>3</u></b>

## Books Published

### Authored Books

- 1) M K Purkait, P Mondal, P P Das, Deepti, Wastewater Treatment in Steel Industries: Case Studies, Advances, and Prospects, **CRC Press (Taylor & Francis (2023)).**
- 2) M K Purkait, D Halder, B Debnath, Technological Advancements in Product Valorization of Tea Waste, **Elsevier (2023),** ISBN: 0443192405, 9780443192401, No of pages: 222.
- 3) M K Purkait, P Durah, PP Das, Recovery of Bioactives from Food Wastes. **CRC Press** (Taylor & Francis (2023), ISBN:9781000862690, 1000862690, No pages: 234.
- 4) P Mondal, **M K Purkait**, Green Synthesized Iron-Based Nanomaterials: Application and Potential Risk, **CRC Press Taylor & Francis (2022),** ISBN: 9781003243632. SBN:9781032153261, 1032153261.

- 5) M K Purkait, D Haldar, P Duarah, Advances in Extraction and Applications of Bioactive Phytochemicals, Academic Press, (Elsevier) (2022) Paperback ISBN: 9780443185359, eBook ISBN: 9780443185366.
- 6) R Singh, P Mondal, **M K Purkait**, pH responsive membranes: Biomedical Applications, CRC Press, **Taylor & Francis**, (2021) ISBN: 9781000520705, 1000520706, 9781032061672, 1032061677.
- 7) **M K Purkait**, P Mondal, M Changmai, V Volli, C M Shu, Hazards and Safety in Process Industries: Case Studies. Publisher: CRC Press, **Taylor & Francis**, ISBN 9781000362442, 1000362442 (2021), eBook ISBN 9781003054764, No of pages: 352.
- 8) **M K Purkait**, D Haldar, Lignocellulosic Biomass to Value-Added Products, Publisher: **Elsevier Science**, (2021), Paper back ISBN: 9780128235348 , e-Book ISBN: 9780128235911. No of page: 240.
- 9) **M K Purkait**, R Singh, P Mandal, D Haldar, Thermal Induced Membrane Separation Processes, Publisher: **Elsevier Science**, (2020) ISBN: 9780128188019, No of pages: 318.
- 10) **M K Purkait**, P Mondal, C T Chang, Treatment of Industrial Effluents: Case Studies, Publisher: CRC Press, **Taylor & Francis**, (2019), ISBN: 9780429401763, No of pages: 364. DOI:<https://doi.org/10.1201/9780429401763>
- 11) **M. K. Purkait** and R Singh, Membrane Technology in Separation Science, Publisher: CRC Press, **Taylor & Francis**, 2018, ISBN: 9781138626263, No of pages: 340. DOI:<https://doi.org/10.1201/9781315229263>
- 12) **M K Purkait**, M K Sinha and P Mondal and R Singh, Stimuli Responsive Polymeric Membranes, Publisher: **Academic Press** (Elsevier), 2018 ISBN: 9780128139615. No of pages: 312.
- 13) S Mondal, **M K Purkait**, S De, Advances in Dye Removal Technologies, Publisher: **Springer**, (2017) ISBN: 978-981-10-6293-3, No of pages: 350.

### Edited Books:

- 14) K. Mohanty and **M.K. Purkait**, Membrane Technologies and Applications (Edited), Publisher: CRC Press, **Taylor & Francis**, (2011), ISBN 10: 1439805261, ISBN 13: 9781439805268. No of pages: 350.
- 15) D Deka, S K Majumder, **M K Purkait**, Sustainable Environment, **Springer**, SBN-10 : 9811984638, ISBN-13 : 978-9811984631, No of pages: 318

### Patent

1. B. Prem Kumar, R. Uppaluri, D.S. De, **M.K. Purkait**, Surfactant composition and method for enhanced oil recovery utilizing aqueous surfactant composition. Application Number: 597/KOL/2007. Date of Filing: 18/04/2007. Indian **Patent No. 245703, Granted on 04/02/2011.**

2. Vijaykumar L. Dhadge, Chitta Ranjan Medhi and **Mihir Kumar Purkait**, Apparatus and method for removal of fluoride, iron, arsenic and microorganism from contaminated drinking water. Application Number: 481/KOL/2010. Date of Filing: 29/04/2010. Indian **Patent No. 286481, Granted on 21/08/2017.**
3. Vijaykumar L. Dhadge and **Mihir Kumar Purkait**, Production of catechins from natural sources using membrane based technology. Application Number: 240/KOL/2010. Date of Filing: 11/03/2010. Indian **Patent No. 291190. Granted on 29/12/2017.**
4. Vijaykumar L. Dhadge and **Mihir Kumar Purkait**, Formulations containing Catechin flavonoids mixture produced by membrane separation technology, Application Number: 840/KOL/2010. Date of filing: 30/7/2010. Indian **Patent No. 296935, Granted on 21/05/2018.**
5. P. Biswas, V.K. Chandaliya, P.K. Banerjee, C. Das, **M.K. Purkait**, " A fabrication process to produce defect-free inorganic ultrafiltration range ceramic membrane device, Application Number: 725/KOL/2010. Date of filing: 02/07/2010. **Patent No. 345860, Granted on 01/09/2020.**
6. P K Saha, **M K Purkait**, A B Paul, R Saikia, Anweshan, J K Deka, S K Saikia, Apparatus/System for electrolytic treatment of water, India Patent Application No. 201831027259. Date of filing: 20/07/2018. **Patent No. 347762, Granted on 25/09/2020.**
7. **M K Purkait**, Deepti, A Sinha, P. Biswas, S Sarkar, "Separation of ions from rejected stream of industrial wastewater", Application Number: 201831044754. Date of filing: 27/11/2018. **Patent No. 358357, Granted on 11/02/2021.**
8. A Sinha, P. Biswas, S Sarkar, M Changmai, **M K Purkait**, A ceramic membrane, A process of preparation and application thereof. Patent Application No: 201831041890. Date of filing: 05/11/2018. **Patent No. 363544, Granted on 30/03/2021.**
9. P Mandal, **M K Purkait**, Aromatic carbon coated iron aluminium nanocomposite and its green synthetic process. Patent Application No. 202031047652, Date of filing: 01/11/2020. **Patent No. 385299, Granted on 28/12/2021.**
10. **M K Purkait**, Somnath Chanda, P Mandal, Process for preparation of high surface area activated carbon by using waste tea leaves. Patent Application No. 202131062319 (TEMP/E-1/70593/2021-KOL), Date of filing: 31/12/2021.
11. **M K Purkait**, Deepti, Removal of Chromium from Linz-Donawitz slag, Patent Application No. 202231007598 (TEMP/E-1/8706/2022-KOL), Date of filing: 13/02/2022
12. **M K Purkait**, P Mandal, Green technique for preparing iron nanoparticles embedded polymeric membrane. Patent Application No. 202231018062 (TEMP/E-1/20234/2022-KOL), Date of filing: 28/03/2022.

### Technology Transferred:

**i) Name of Technology:** Production of powder catechins from Green tea leaves using smart membrane technology

**Patent Number: Indian Patent No. 291190. Granted on 29/12/2017.**

**Transferred to (Company name): M/s Vixudha Bio Products Pvt. Ltd., Registration Number: 18349.**

**Commercialized or not: Yes**

**iii) Name of Technology:** Electrolytic treatment plant for fluoride, iron, arsenic and microorganism free drinking water

**Patent Number: Indian Patent No. 286481, Granted on 21/08/2017**

**Transferred to (Company name): RD Grow Green India Pvt. Ltd. Registration Number: 56645.**

**Commercialized or not: Yes**

## Foreign visits

1. **Japan:** As an visiting professor to teach a course on “Research Methodology and Design Thinking” in GIFU University, Japan, 11<sup>th</sup> Jun – 6<sup>th</sup> July, 2019.
2. **Taiwan:** As an Adjunct Professor to teach a course on “Environmental Nanotechnology” in National ILAN University, Taiwan, 27<sup>h</sup> May – 26<sup>th</sup> June, 2018.
3. **Taiwan:** As an Adjunct Professor to teach a course on “Membrane Separation Technology” in National ILAN University, Taiwan, 25<sup>th</sup> May – 26<sup>th</sup> June, 2017.
4. **Germany:** To attend ongoing EU-India project meeting me in Technische Universität München (TUM), Germany, 8<sup>th</sup> – 14<sup>th</sup> May, 2017.
5. **Japan:** To deliver Keynote lecture on “ Clarification of Mosambi and Orange juice using ceramic membrane based technology” in the GIFU university, Japan. 1-2<sup>nd</sup> August, 2016.
6. **Japan:** To deliver Keynote lecture on “Membrane based technology for the separation of flavonoids” in the Kyoto Institute of Technology (KIT), Japan. 4 - 6<sup>th</sup> August, 2016.
7. **Portugal:** To attend ongoing EU-India project meeting me in University of Porto (Portugal), 17<sup>th</sup> – 23<sup>rd</sup> July, 2016.
8. **London (UK):** To deliver keynote lecture on “Treatment of Textile, Refinery and Leather Plant Effluent Using Membrane Based Technology” in international conference IACCEE-2016 organized by International Academy of Engineers, 24<sup>th</sup> March – 25<sup>th</sup> March, 2016.
9. **Colombo (Srilanka):** To present paper in international conference. Received best presentation award. 12<sup>th</sup> Jan – 14<sup>th</sup> Jan, 2016
10. **Rome (Italy):** To attend ongoing EU-India project meeting me in Rome, 15<sup>th</sup> – 16<sup>th</sup> October, 2015
11. **Sarawak (Malaysia):** To present paper in an international conference in Curtin University (Sarawak). 6<sup>th</sup> Nov – 7<sup>th</sup> Nov 2012. Received best presentation award.
12. **Singapore:** To present paper in International Conference on Future Environment and Energy - ICREE 2012, 26<sup>th</sup> Feb – 28<sup>th</sup> Feb, 2012.



13. **Massachusetts (USA):** As visiting scientist for one year in the Department of Chemical Engineering, Massachusetts Institute of Technology (MIT), USA July,