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(h-index): 45 (Google), 40(Scopus), 36(WOS)



Professional Experience:

- 2026.11- Till date: **Visiting Professor, Institute of Advanced Studies,** Universiti Malaya, Kuala Lumpur-50603, MALAYSIA.
- 2024.07 – Till date: **Professor, Department of Environmental Science and Engineering** Indian Institute of Technology (ISM)Dhanbad, Dhanbad-826004, Jharkhand, INDIA
- 2016.09 – 2024.07: **Associate Professor, Department of Environmental Science and Engineering** Indian Institute of Technology (ISM)Dhanbad, Dhanbad-826004, Jharkhand, INDIA
- 2010.02 –2016.08: **Senior Lecturer, Environmental Engineering Programme, Department of Civil Engineering**, Faculty of Engineering, Universiti Malaya, Kuala Lumpur-50603, MALAYSIA.
- 2011.02 – 2016.08: **Affiliated Member, Nanotechnology & Catalysis Research Center (NANOCAT),** Universiti Malaya, Kuala Lumpur-50603, MALAYSIA.
- 2009.09 –2009.12: **Assistant Professor (Tenure Track), Department of Chemical Technology, Chemical Faculty**, Politechnika Gdańska, ul. G. Narutowicza 11/12,80-233 Gdańsk, POLAND
- 2008.11 –2009.08: **Assistant Professor, Department of Chemical Engineering**, National Institute of Technology Tiruchirappalli, Tiruchirappalli- 620 015, INDIA
- 2008.06 – 2008.09: **Senior Lecturer, Department of Chemical Engineering & Materials Science**, Amrita University, Coimbatore-641023, INDIA

Educational Qualification:

- **Ph.D., Chemical Engineering**, 09.2008, Indian Institute of Technology Guwahati (IITG), Guwahati, INDIA(Adviser(s): Prof. Dr. P. K. Saha, Prof. Dr .K. Pakshirajan
- **M.Tech, Environmental Engineering (First Class with Distinction)**, 01.2003, Vellore Institute of Technology University, Vellore, INDIA
- **Post Graduate Diploma in Medical Instrumentation Technology**, **(First Class)** 05.2001, Coimbatore Institute of Technology (Autonomous), Coimbatore, INDIA
- **B. Tech, Chemical Engineering**, **(First Class)** 05.2000, University of Madras, Chennai, INDIA

Teaching Activities: (Course Taught)

- **IIT(ISM)Dhanbad**, India
  - **Air Pollution Control (NESC 201),Environmental Policy and Legislation (NESA 201), Environmental Nanotechnology (ESE 18102/ ESD 406/NESD406), Environmental Science (NESV101), Design of Air Pollution Control System (ESH 15101, ESE 15104, ESC 51104), Air and Nosie Pollution (ESM17101), Application of Environmental Management System (ESM17102), Environmental Science (CMD11301, ESI101), Environmental Economics (ESE17103), Environmental Management System & Audit (ESC18102), Industrial Pollution Control & Management (ESE18101), Environmental**

Impact Assessment (ESC17103 / ESC 310) Environmental Law & Impact Assessment (ESC 506)

- **University of Malaya**, Malaysia
  - **Environmental Microbiology and Ecology (KAES 1147)**, **Air and Noise Pollution (KAES 3146), Environmental Management System (KAES 4350), Ecology Field Trip(KAES 1148), Environmental Health Engineering(KAES 3245) & Environmental Chemistry(KAES 2144)** modules with laboratories for Environmental Engineering Undergraduates.
  - **Environmental Engineering** for Civil Engineering Undergraduates.
- **Politechnika Gdańska,** Poland
  - **AUTOCAD & CHEMCAD** to chemical technology, environmental protection & Management undergraduate students.
- **National Institute of Technology Tiruchirappalli,** INDIA
  - **Nanotechnology** to chemical engineering undergraduate and **Bio Processing Engineering** for post graduate students
  - **Energy & Environment** to first year undergraduate (B. Tech) students.
- **Amrita University**, INDIA
  - Handled **Material Science.**

Research Focus:

- **Advanced Functional Materials:** Water Treatment, Solar Fuel, Membrane Separation,
- **Circular Economy Strategies:** Water Energy Nexus, Waste Recycling/Valorisation, Urban Mining for Critical Minerals Extraction

Affiliations:

- Fellow (636438) Royal Society of Chemistry, UK
- Senior Member (9900121518), American Institute of Chemical Engineers(AIChE), USA
- Associate Member (LAM 29738), Indian Institute of Chemical Engineers, (IIChe), INDIA
- Member (M 1633325), Institute of Engineers India, (IEI), INDIA

Editorial Assignments:

- 2025- till date Associate Editor, Materials and Emerging Technologies for Sustainability (ISSN (print): 3060-9321 | ISSN (online): 3060-933X)World Scientific Connect
- 2025- till date Associate Editor, Current World Environment (An International Research Journal of Environmental Science) ISSN:0973-4929, Online ISSN:2320-8031

Sponsored Research Project as Principal Investigator

1) **Solar Driven Community Potable Water Purification System** (IMP/2019/000286) Rs. 72,09,400 IMPRINT II-C. **Science and Engineering Research Board** (SERB) 2019-2022.
2) **Design and Development of Full Solar Spectrum Enriched Photocatalyst for Sustainable Water Treatment** (ECR/2016/001400) Early Career Award, Rs. 15,40,000 **Science and Engineering Research Board** (SERB), 2017-2020.
3) **Facile synthesis of Light Driven Nanostructures Hybrid Pervoskite for Sustainable Treatment** of POPs FRS (109/2016-17/ESE): Rs. 10,00,000, **IIT(ISM)Dhanbad** 2016-2019.
4) **Fundamental Exploration of Surface Plasmon Resonance Mechanism on Visible Light Absorption in Titania based Photocatalysts** (FP051-2013B), MYR 122000, **Ministry of Education, Malaysia**, 2013 -17.
5) **Preparation and photoactivity of nanostructured composite strontium titanate (SrTiO3) for sustainable treatment of persistent organic pollutants (POPs)** RP019B-13AET, MYR163000 **University Malaya Research Grant (UMRG)**, 2013 -16

6) **Sustainable Energy Production from Palm Oil Industry Wastewater using Microbial Fuel Cell** (UM.C/625/1/HIR/053/2), MYR189000, High Impact Research (HIR), **University of Malaya**, 2011-13.
7) **Development of modified TiO_2- photocatalyst for improved conversion of hydrocarbon fuel from Greenhouse gas (CO_2)** (RG167-12SUS) MYR 116600, **UMRG**, 2012-14
8) **Preparation of high surface area magnetically separable titanium dioxide with visible light property for environmental applications** (RG091-10SUS), MYR99000, **UMRG**, 2010-12.
9) **Established New Analytical Facility for Environmental Engineering**, $1million, **Vice-Chancellor Special Grant** (Strait Trading (E-00000-19103), 2011-13.
10) **Preparation of high surface area magnetically separable titanium dioxide with visible light property for environmental applications** (PV092-2011A), $21000, **UMRG,** 2011-14.
11) **Development of nano photocatalyst for the direct conversion of CO_2 to hydrocarbon fuel** (PV106-2012A), $9000, **UMRG**, 2012-15.
12) **Preparation and Characterization of Proton Exchange Membrane from Sulfonated Polystyrene and Zeolite for Microbial Fuel Cell Application** (PG022-2013A), $5500, **UMRG**, 2013-16.

Training/Internship

- ✓ Organized **Internship and Skill Development on Nanotechnology** between 28/06/2021- 02/07/2021 funded by SERB under **ACCELERATE VIGYAN (VRITIKA**) with a fund allocation of Rs 50000/- (Participant Benefited 265)

International Grant (*Participation as Foreign Expert)*

- ✓ **"One Belt One Road" Innovative Talent Exchange Foreign Expert Program** Study on the Catalytic Conversion of Nitrogen Oxides in the Background of Carbon Neutrality, **Ministry of Science and Technology China** Prof. Dr. Chuanyi Wang, Shaanxi University of Science & Technology, 2021-22 (**One time visit for a month is permitted with full fellowship: The research and academic collaboration will be discussed during the visit**)

Participation as Foreign Co-PI

- ✓ **Elucidating the mechanism and kinetics model of Heterojunction formation between bismutite and Molybdenum disulfide quantum dots for water treatment** (FRGS/1/2021/TK0/UTAR/02/4)) **Fundamental Research Grant Scheme (FRGS) Ministry of Education Malaysia**, PI: Dr. Kah Hon Leong, Department of Environmental Engineering, Universiti Tunku AbdulRahman Kampar Campus, Malaysia: 2021-2023, RM. 97075 ($23,000) Completed.

Workshop (International) Participation

- ✓ Participated in **Sustainable Handling of Innovative Membrane Technologies for Environmental Protection** Organized by Prof. Bhaskar Jyoti Deka, IIT Roorke & Dr. Volkan Filiz, Helmholtz-Zentrum Hereon with the support of The Indo-German Science & Technology Centre (**IGSTC**), GOI and Government of Germany between **22-25 September, 2025 | University of Hamburg**
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Dissertation Advised

Doctoral Dissertation Completed

1. **Dr. Ankita Rani** "*Heterojunction enabled photocatalysts for enhanced solar light utilization*" 2023. Scientist, REACH, SRM University Chennai, INDIA
2. **Dr. Priyanka Mishra** "*Light Driven Nanomaterials for Methane Conversion into Value-Added Products*"2023, Assistant Professor, Dept. of Science, Math, & Humanities, IITVadodara, INDIA

3. **Dr. Uttkarshni Sharma** "*Metal Organic Framework embedded polymeric nanocomposite membranes for enhanced separation performances*" 2023, Post Doc. Fellow at Wyoming University, USA
4. **Dr. Nirmalendu S. Mishra** "*Advanced nanomaterials for improved visible light utilisation and adsorption intended for pollution abatement*", *2023*, Post Doc. Fellow at Kwangwoon University, Seoul, South Korea
5. **Dr. Priya Mukherjee** "*Microbial Fuel Cell improvisations for sustainable power generation*" 2022, Post Doc Fellow at HES-SO Haute école spécialisée de Suisse occidentale, Sion Swizerland
6. **Dr. Ahmad Nawaz** (Indo- Sastri and Mitacs Doctoral fellow Recipient), "*Full Solar Light Harvesting Nano Hybrid Photocatalysts for Removal of Aquatic Pollutants*"2022, Post Doc. Fellow at The Hebrew University, Israel.
7. **Dr. Aneek Kuila,** "*Visible Light-Induced Smart Photocatalysts for Enhanced Photocatalysis*" 2022, Post Doc Fellow at IIT Technion Israel.
8. **Dr. Kang Yee Li** (Fast Track): My Brain Recipient (MOE, Malaysia) "*Enhancement of Microbial Fuel Cell Anode through Functionalization of Conductive Polymer*"2016, Manager, Mah Sing Group Berhad, Malaysia.
9. **Dr. Leong Kah Hon** (UM Bright Spark Fellow Recipient) "*Development of modified titania nano photocatalysts to synergise visible light utilisation for enhanced photocatalysis* / *Leong Kah Hon.*". 2015, Associate Professor, Universiti Tunku Abdul Rahman, Kampar, MALAYSIA.
10. **Dr. Sim Lan Ching** (MOE, Malaysia My Brain Recipient)" *Synthesis of Solar and Visible-Light-Active Highly Ordered Titania Nanotube Arrays (TNTs) for Photocatalytic Applications*"2015, Assistant Professor, Universiti Tunku Abdul Rahman, Kampar, MALAYSIA.
11. **Dr. Azrina Abd Aziz** (MOE, Malaysia My Brain Recipient), "*Development and application of improved solar driven composite nano photocatalysts with enhanced recovery for the removal of organic pollutants*",2013, Associate Professor, Universiti Malaysia Pahang, Kunatan MALAYSIA.

Doctoral Dissertation Ongoing

1. **Mr. Aditya Swarup Lal (Admitted in 2023 Monsoon)**
2. **Miss. Vishwani Sharma (Admitted in 2024 Winter)**

M.Engg.Sci (Research) Dissertation Completed

1. **Miss. Nur Atiqah Binti Surib** "*Design and Fabrication of Solar Light Responsive New Metal Organic Frameworks for Photocatalysis*", 2018, M.Engg.Sci (Research).
2. **Mrs. Anis Nurdhiani Rosdia** (MOE, Malaysia My Brain Recipient), "*Preparation and Characterization of Proton Exchange Membrane (PEM) Using Different Polystyrene Precursors Through Varied Methods*"2015 M.Engg.Sci (Research).

Post Doctoral Fellow

1. **Dr.A. Ashok Kumar** (Graduate of IITGuwahati, INDIA) "*Rheology and Particle Image Velocimetry*"Post Doctoral Fellow, 2013-2015, Professor, Periyar Maniammai University Thanjavur, India.

Project Fellow

1. **Miss Santana Chandra** "*Solar Driven Community Potable Water Purification System*", Jan 2020-Jan 2023.

M.Tech Dissertation Advised: 15, Ongoing: 1

Baccalaureate Final Year Project: 21, Ongoing: 1

Internship Student Visited@ IITISM (2017-Until) and University of Malaya (2010-16)

Year 2025-26: Miss. Anushka Sinha, North-Eastern Hill University Meghalaya (NEHU), Shillong
Year 2022-23: Mr. Apoorva Sharad, Visva-Bharati University, Santiniketan.
Year 2017-18: Miss.Triya Mukherjee, BHU, Varasani **&** Mr. Amit Bundela, BHU, Varasani
Year 2016: Mr. Varun Punia, IIT Roorkee,INDIA
Year 2015: Mr. Keshav Mehta IIT Roorkee, INDIA
Year 2014: Mr. Pratyush Kumar, IIT Roorkee, INDIA
Year 2013: Miss. Laura Digan, ENSIACET, Toulouse, FRANCE
Year 2012: Mr. Prateek Sachan, IIT Delhi, INDIA**,** Mr. Himanshu Patel, IIT Delhi, INDIA **&** Mr. Vijay Singh Kulhar, IIT Bhubaneswar, INDIA
Year 2011: Mr. Alabhya Kumar Mishra, IITKanpur, INDIA

Key Administrative Responsibilities Held

- **Senate Member (2024- Till date):** Responsibilities that govern all academic affairs.
- **Member, Departmental Under Graduate Committee (2024-Tilldate):** Responsibilities includes Admission, Dissertation evaluation, of master's and any other Master & Doctoral programmes related issues.
- **Convener, Departmental Post Graduate Committee (2020- 2022):** Responsibilities includes Admission, Curriculum Revision, and any other matters of Master & Doctoral programmes related issues.
- **Member, Departmental Post Graduate Committee (2018-2020):** Responsibilities includes Admission, Curriculum Revision, and any other matters of Master & Doctoral programmes related issues.
- **Member, Faculty Recruitment Committee (2021- till date):** Responsibilities includes scrutinising the applications of the Assistant, Associate and Full Professor at the department level and recommending eligible candidates to the institute for the interview.
- **Coordinator, Undergraduate Final Year (2017-2018):** Evaluation of Industrial Training, conducting composite viva, coordinating the Final Year Thesis.
- **Moderator, Assessment Marks (2016-2018):** Moderating the marks of UG /PG before officially publicising.
- **Division Head**, Water Resources & Environmental Engineering, Department of Civil Engineering **(2012-2016):** *Duties includes Curriculum Revision, Question Paper Moderation, Self-Assessment Report Preparation for ABET accreditation, Research and Teaching Laboratory Development, samples faculty member for the accreditation auditor's evaluation.*
- **Member,** Curriculum Revision Committee: **(2012-2016)**
- **Member,** Accreditation Committee (EAC) **(2012-2015)**
- **Member,** ISO Committee **(2012-2014)**
- **Coordinator**, Undergraduate Thesis (Civil &Environmental Under Graduates) **:(2014-2016)**
- **Faculty Coordinator**, Student Exchange for Indian Institute of Technology (IITs) India: **(2012-2016)**
- **Joint Secretary**,11th International Conference on Concrete Engineering & Technology 2012 (CONCET 2012)
- **Chairman**, Civil and Environmental Engineering Postgraduate Association (CEEPA) of the Malaya University

- **Acting Head of Department** for many occasions (**2012-2015):** during the absence of the regular Head
- **Resource person** as **technical member** for various purchase across the faculty and university
- **Joint Secretary 11thInternational Conference on Concrete Engineering & Technology 2012 (CONCET 2012) -Joint Secretary**

Research Activities outside the institute.

- **Reviewed 500+Articles** of various journal Platform
- **Reviewed 23 Ph.D Thesis as external examiner**

Invited/Keynote Lectures:

- Delivered Lecture on **"A to Z of Nanotechnology: From Feynman's Vision to Clean Energy and Environmental Solution"** Nano2Nature Research Boot Camp, Organised by Department of Environmental Science and Engineering, SRM University AP, Andhra Pradesh, 23 October 2026.
- Delivered Lecture on **"Electrode Development for Microbial Fuel Cell Applications"** at SERB-Sponsored Karyashala workshop on Microbial Fuel Cells: A Sustainable Technology for Clean Water and Green Energy Organised by NIT Tiruchirappalli, March 4 - 9, 2023
- Delivered Lecture on **"Solar Driven Community Potable Water Purification System"** at 8th International Conference on Advanced Nanomaterials and Nanotechnology (ICANN 2023), Organised by IITGUWAHATI, Nov 29-1 December 2023
- Delivered Lecture on **"Solar Driven Community Potable Water Purification System"** at The 1st Conference on Sustainability & Emerging Technologies (CSET 2023), Organised by HUTECH University, Vietnam, 31 March 2023.
- Delivered Lecture on **"Light Driven Nanomaterials: A Leap from Laboratory to Real Life Application"** at AICTE Training and Learning (ATAL) Academy Sponsored One Week Online Faculty Development Programme (FDP) on "Research Trends in Separation & Purification Techniques" organized by the Department of Chemical Engineering, NIT Raipur from 13th - 17th, September 2021
- Delivered Lecture on **"Advanced Functional Materials for Sustainable Water Purification"**at 2nd International Conference on Recent Technologies and Advanced Materials for Green Energy and Sustainable Environment (RTAMGESE-2021) NITTiruchirappalli, INDIA 12-13 March 2021
- Delivered Lecture on "**Solar Driven Community Potable Water Purification System"** at AICTE Sponsored online FDP on Environmental and Sustainable Chemical Engineering, organised by Department of Chemical Engineering, Pondicherry Engineering College, December 10th – December 23rd, 2020.
- Delivered Lecture on **"Light Driven Nanomaterials: A Leap from Laboratory to Real Life Application"** at 2nd International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE-India-2020) NIT Rourkela, INDIA, 05 -07 March 2020.
- Delivered Lecture on **"Light Driven Nanomaterials: A Leap from Laboratory to Real Life Application"** at National Conference on Water, Energy and Environment (WEECON'19), Hindustan Institute of Technology and Science Chennai, INDIA 21 March 2019.
- Delivered Lecture on **"Hidden Secrets Behind Nano-materials Analysis for Clinching Quality Publication"** at Centre for Nanotechnology/Department of Biotechnology, IIT Roorkee, Roorkee – 247667, INDIA 05 December 2018.
- Delivered Lecture on **"A Journey with Light Driven Nanomaterials"** at Centre for Nanotechnology/Department of Biotechnology, IIT Roorkee, Roorkee – 247667, INDIA 17 August 2017.

- Delivered Invited Lecture at **2nd International Workshop on Graphene and C_3N_4-based Photocatalysts (IWGCP2)** Organized by: State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan, CHINA, March 24 - 27, 2017.
- Speaker, **International Winter School and Hands-on Training Programme on Nano-biotechniques (I WiSH NanoBio: 2016)** Organized by: Department of Biotechnology and Centre for Nanotechnology, IIT Roorkee, Roorkee – 247667, INDIA February 9 - 14, 2016.
- Delivered invited lecture at **Workshop on Nanotechnology** organized by Department of Physics Fatima College (Autonomous), Madurai, INDIA, 18 Dec 2015.
- Delivered key note lecture at **International Conference on Recent Advances Materials Research and its Applications (ICRAMRIA15**), Department of Chemistry, St. Xaviers College (Autonomous), Tirunelveli, Tamilnadu, INDIA, 16 Dec 2015.
- Delivered invited lecture at **International Conference on Nanomaterials For Energy, Environment, Catalysis And Sensors – 2015 (ICNEECS-15)** Department of Physical Chemistry, School of Chemistry, Madurai Kamaraj University, Madurai 11 -12 Dec 2015,
- Delivered invited Lecture at **International conference on Recent Advances in Materials and Chemical Sciences (ICRAMCS-2015),** Department of Chemistry, Gandhigram Rural Institute, INDIA, 14 -15 Dec 2015.
- Delivered invited lecture on **Development of Modified Nanophotocatalysts for Enhanced Visible, Solar light driven Environment and Energy Applications,** National Centre for Nanosciences and Nanotechnology, University of Madras, India, August 3, 2015.
- Delivered talk on **Development of Modified Nanophotocatalysts for Enhanced Visible, Solar light driven Environment and Energy Applications,** Department of Biotechnology, Kumaraguru College of Engineering (Autonomous), Coimbatore, India August 27, 2015.
- Delivered talk invited on **Photocatalysis for Sustainable Environmental Remediation** Department of Chemical Engineering, Adhiyammaan College of Engineering (Autonomous), Hosur, India August 3, 2011.

News, Mass media & Award:

- Conferred as **Chartered Engineer (CEng)** Institute of Engineers (IE) India, December 2018
- Conferred as **Chartered Chemist (CChem)**Royal Society of Chemistry, UK, June 2018
- Our **Innovation on the new generation** photocatalyst that was capable to remove the lethal aquatic organic pollutants appeared in the nation news daily (Dainik Jagran, Hindi Daily, 19 May 2022 Dhanbad Edition, India) as special coverage.
- **Innovation Competition Champion** organised in conjunction with Universiti Teknologi PETRONAS, (UTP) 20th Anniversary Celebration, 2017 under leadership of Prof. Dr. Ramesh T Subramaniam, Faculty of Science, University of Malaya, 50603 Kuala Lumpur, Malaysia.
- **Awarded Gold** in the International Eureka Innovation Exhibition 2017 organised by Universiti Kuala Lumpur Malaysian Spanish Institute (UniKL MSI) Kulim Malaysian under leadership of Prof. Dr. Ramesh T Subramaniam, Faculty of Science, University of Malaya, 50603 Kuala Lumpur, Malaysia.
- **Early Career Award Recipient 2016:** Awarded by Department of Science and Technology, Ministry of Science and Technology, Government of India
- **Received International Accreditation (2015)** for the work Degrading BPA with Visible Light and a New Hybrid Photocatalyst with a special coverage by various scientific news platforms and technical journals including American Institute of Physics, July 21, 2015; Photonics Spectra(Science and technology magazines) United States in September 2015, Asian Scientist

Singapore August 4, 2015.