
Dr. SARAVANAN PICHIAH Ph.D., CChem., FRSC.,SMAChE, MIE CEng(India)

Present Address:

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Web of Science ResearcherID: B-7471-2008

(h-index): 33 (Google), 30(Scopus), 27 (WOS)



Professional Experience:

- ❖ 2016.09 – Till date: **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, University of Malaya, Kuala Lumpur-50603, MALAYSIA.
- ❖ 2011.02 – 2016.08: **Affiliated Member, Nanotechnology & Catalysis Research Center (NANOCAT)**, University of 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(<http://gyan.iitg.ernet.in/handle/123456789/164>)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
 - Environmental Nanotechnology (ESE 18102/ ESD 406), Design of Air Pollution Control System (ESH 15101, ESE 15104, ESC 51104) Principles of Air and Noise (ESC51203), Air and Noise 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)
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- ❖ **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 Nanomaterials, Materials Chemistry, Waste Recycling. Water Energy Nexus Solar Water Treatment, Solar Fuel

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

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

Year 2011

Mr. Alabhya Kumar Mishra, IITKanpur, INDIA

Year 2012

Mr. Prateek Sachan, IIT Delhi, INDIA

Mr. Himanshu Patel, IIT Delhi, INDIA

Mr. Vijay Singh Kulhar, IIT Bhubaneswar, INDIA

Year 2013

Miss. Laura Digan, ENSIACET, Toulouse, FRANCE

Year 2014

Mr. Pratyush Kumar, IIT Roorkee, INDIA

Year 2015

Mr. Keshav Mehta IIT Roorkee, INDIA

Year 2016

Mr. Varun Punia, IIT Roorkee,INDIA

Year 2017-18

Miss.Triya Mukherjee, BHU, Varasani

Mr. Amit Bundela, BHU, Varasani

Dissertation Mentored

Master (Mixed Mode: I Year Course work+ I Year Dissertation): 12 (Twelve)

Baccalaureate (1Year Dissertation): 18

Research Dissertation Completed (University of Malaya)

Name of Candidate	Title of thesis	Year Completed	Degree	Current Affiliation
Dr.A. Ashok Kumar Graduate of IITGuwahati, INDIA	Rheology and Particle Image Velocimetry	2013-2015	Post Doc	Associate Professor, Periyar Maniammai University Thanjavur, India
Dr. Kang Yee Li : (Fast Track): My Brain Recipient (MOE, Malaysia)	Enhancement of Microbial Fuel Cell Anode through Functionalization of Conductive Polymer	2016	Doctoral	Manager, Mah Sing Group Berhad, Malaysia
Dr. Leong Kah Hon : Bright Spark Fellow(UM) Recipient	Preparation and characterization of Plasmonic triggered composite nano photocatalysts for visible light driven photocatalysis.	2015	Doctoral	Associate Professor, Universiti Tunku Abdul Rahman , Kampar, MALAYSIA
Mrs. Anis Nurdhiani Rosdia : My Brain Recipient (MOE, Malaysia)	Preparation and Characterization of Proton Exchange Membrane (PEM) Using Different Polystyrene Precursors Through Varied Methods	2015	M.Engg.Sci (Research)	-
Dr. Sim Lan Ching : My Brain Recipient (MOE, Malaysia)	Synthesis of Solar and Visible-Light-Active Highly Ordered Titania Nanotube Arrays (TNTs) for Photocatalytic Applications	2015	Doctoral	Assistant Professor, Universiti Tunku Abdul Rahman , Kampar, MALAYSIA
Dr. Azrina Abd Aziz : My Brain Recipient (MOE, Malaysia)	Development and application of improved solar driven composite nano photocatalysts with enhanced recovery for the removal of organic pollutants	2013	Doctoral	Associate Professor, Universiti Malaysia Pahang , Kunatan MALAYSIA
Miss. Nur Atiqah Binti Surib	Design and Fabrication of Solar Light Responsive New Metal Organic Frameworks for Photocatalysis	2018	M.Engg.Sci (Research)	---

Doctoral Dissertation at IIT(ISM)

Name of Candidate	Field of Research	Status
Dr. Ahmad Nawaz (Indo-Sastri and Mitacs Doctoral fellow Receipt)	Full Solar Light Harvesting Nano Hybrid Photocatalysts for Removal of Aquatic Pollutants	Post Doc Fellow at The Hebrew University, Israel
Dr. Aneek Kuila	Visible Light-Induced Smart Photocatalysts for Enhanced Photocatalysis	Post Doc Fellow at IIT Technion Israel
Dr. Priya Mukherjee	Microbial Fuel Cell improvisations for sustainable power generation	Graduated
Miss. Uttkarshni Sharma	Metal Organic Framework embedded polymeric nanocomposite membranes for enhanced separation performances	Graduated
Mr. Nirmalendu S. Mishra	Advanced nanomaterials for improved visible light utilisation and adsorption intended for pollution abatement	Graduated
Miss. Priyanka Mishra	Light Driven Nanomaterials for Methane Conversion into Value-Added Products	Viva Awaited
Miss. Ankita Rani	Heterojunction enabled photocatalysts for enhanced solar light utilization	Viva Awaited

Project Staff (IMPRINT)

Name of Employee	Field of Research	Year of Employment
Miss Santana Chandra	Solar Driven Community Potable Water Purification System	Jan 2020- Jan 2023

Research Endowment as Principal Investigator @ University of Malaya

No	Project No	Title	Duration	Allocation (MYR)	Funding Agency	Status
1	Strait Trading (E-00000-19103)	Establishing New Analytical Facility for Environmental Engineering.	2011-13	2500,000 (1million\$)	Vice-Chancellor Special Grant	Completed
2	RG091-10SUS	Preparation of high surface area magnetically separable titanium dioxide with visible light property for environmental applications	2010-12	99,000 (\$33000)	UMRG	Completed
3	RG167-12SUS	Development of modified TiO ₂ -photocatalyst for improved conversion of hydrocarbon fuel from Greenhouse gas (CO ₂)	2012-14	116,600 (\$41000)	UMRG	Completed
4	UM.C/625/1 /HIR/053/2	Sustainable Energy Production from Palm Oil Industry Wastewater using Microbial Fuel Cell.	2011-13	189,000 (\$63000)	High Impact Research (HIR), University of Malaya	Completed
5	PV092-2011A	Preparation of high surface area magnetically separable titanium dioxide with visible light property for environmental applications	2011-14	60,000 (\$21000)	UMRG	Completed
6	PV106-2012A	Development of nano photocatalyst for the direct conversion of CO ₂ to hydrocarbon fuel	2012-15	26,800 (\$9000)	UMRG	Completed
7	PG022-2013A	Preparation and Characterization of Proton Exchange Membrane from Sulfonated Polystyrene and Zeolite for Microbial Fuel Cell Application.	2013-16	16,000 (\$5500)	UMRG	Completed
8	RP019B-13AET	Preparation and photoactivity of nanostructured composite strontium titanate (SrTiO ₃) for sustainable treatment of persistent organic pollutants (POPs)	2013 -16	163,000 (\$55000)	UMRG Programme	Completed
9	FP051-2013B	Fundamental Exploration of Surface Plasmon Resonance Mechanism on Visible Light Absorption in Titania based Photocatalysts	2013 -17	122,000 (\$40000)	Ministry of Education, Malaysia	Completed

Research Endowment as Principal Investigator @ IIT(ISM)

No	Project No/ Sanction date	Title	Duration	Allocation (INR)	Funding Agency	Status
1	FRS (109/2016-17/ESE): December 2016	Facile synthesis of Light Driven Nanostructures Hybrid Pervoskite for Sustainable Treatment of POPs	2016-19	10,00,000 (\$13,000)	IIT(ISM) Dhanbad	Completed
2.	ECR/2016/001400: 15. Feb.2017	Design and Development of Full Solar Spectrum Enriched Photocatalyst for Sustainable Water Treatment	2017-2020	15,40,000 (\$21000)	Science and Engineering Research Board (SERB), Early Career Award DST	Completed
3.	_IMP/2019/000286 19.Nov.2019	Solar Driven Community Potable Water Purification System	2019-2022	72,09,400 (Agency)+20,00,000 (Industrial) (\$125,000)	IMPRINT II-C SERB	Ongoing

Training/Internship

Sl.No	Title	Duration	Allocation (INR)	Funding Agency	Participant Benefited
1.	Internship and Skill Development on Nanotechnology	28/06/2021-02/07/2021	50000.00 (\$700)	SERB under ACCELERATE VIGYAN (VRITIKA)	265

International Grant

Participation as Foreign Expert

Program	Title	Duration	Funding Agency	Lead PI	Expected Activity
"One Belt One Road" Innovative Talent Exchange	Study on the Catalytic Conversion of Nitrogen Oxides in	2021-22	Ministry of Science and Technology China	PROF.DR. CHUANYI WANG, FRSC	One time visit for a month is permitted with full fellowship: The

Foreign Expert Program	the Background of Carbon Neutrality	Shaanxi University research and of Science & Technology	academic collaboration will be discussed during the visit
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Participation as Foreign Co-PI

Project No/ PI/Duration/Allocation	Title	Funding Agency	Status
FRGS/1/2021/TK0/UTAR/02/4) Dr. Kah Hon Leong, Assistant Professor Department of Environmental Engineering Universiti Tunku Abdul Rahman Kampar Campus Malaysia: 2021-2023, RM. 97075 (\$23,000)	Elucidating the mechanism and kinetics model of Heterojunction formation between bismutite and Molybdenum disulfide quantum dots for water treatment	Fundamental Research Grant Scheme (FRGS) Ministry of Education Malaysia	Ongoing
Dr. Sim Lan Ching Assistant Professor Department of Chemical Engineering Universiti Tunku Abdul Rahman Malaysia: 2019-2021, RM 109,000 (\$26000)	Disinfection Mechanism, Mechanistic Models and Charge Transfer Behavior of Vanadate Quantum Dots/Graphitic Carbon Nitride Nanosheets for Photocatalytic Disinfection	Fundamental Research Grant Scheme (FRGS) Ministry of Education Malaysia	Ongoing

Key Administrative Responsibilities Held at University of Malaya (2010-16):

- ❖ **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

Key Contributions: IIT(ISM) (2016- till date):

- ❖ **Convener, Post Graduate Committee (2020- 2022):** Responsibilities includes Admission, Dissertation evaluation, of master's and any other Master & Doctoral programmes related issues.
- ❖ **Member, Post Graduate Committee (2018-2020):** Responsibilities includes Admission, Dissertation evaluation, of master's and any other Master & Doctoral programmes related issues.
- ❖ **Member, Faculty Recruitment Committee (2020- till date):** Responsibilities includes scrutinising the applications of the Assistant 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.

Major Accomplishments at University of Malaya

- ❖ Organized **11th International Conference on Concrete Engineering & Technology 2012 (CONCET 2012) -Joint Secretary**
- ❖ Established **New Analytical Facility for Environmental Engineering Research worth RM 2.5 million (~1 million US\$)- Coordinator.**
- ❖ Received total **Research Endowment of RM 800K(~US\$200K)**

Research Activities outside the institute

- ❖ **Reviewed 400+Articles** of various journal Platform
- ❖ **Reviewed 10 Ph.D Thesis as external examiner**

Invited/Keynote Lectures:

- ❖ 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.

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- ❖ 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 C₃N₄-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 in 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.