Dr. PARASURAMAN SELVAM, PhD

VISITING PROFESSOR: Faculty of Advanced Science and Technology (FAST)
Kumamoto University, KUMAMOTO, Japan

PROFESSOR (Retd): *National Centre for Catalysis Research (NCCR) & Department of Chemistry, Indian Institute of Technology-Madras, CHENNAI, India*

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EDUCATION

- **MSc** : *Analytical Chemistry, University of Madras, CHENNAI (1982)*
- **PhD** : Physical *Chemistry, Indian Institute of Technology-Madras, CHENNAI (1988)*
- **PDF** : *X-ray Crystallography, University of Geneva, GENEVA, SWITZERLAND (1988-1990)*
  Condensed Matter Physics, University of Geneva, GENEVA, SWITZERLAND (1990-1992)

CAREER

- ***Professor & Head*** : *National Centre for Catalysis Research (NCCR), IIT-Madras, CHENNAI (2016-2024)*
- ***Coordinator*** : *MTech (Catalysis Technology), Dept. of Chemical Engineering, IIT-Madras (2016-2024)*
- **Professor** : *Department of Chemistry, Indian Institute of Technology-Madras, CHENNAI (2006-2024)*
  : *Department of Chemistry, Indian Institute of Technology-Bombay, MUMBAI (2003-2006)*
- ***Associate Professor*** : *Department of Chemistry, Indian Institute of Technology-Bombay, MUMBAI (1997-2003)*
- ***Assistant Professor*** : *Department of Chemistry, Indian Institute of Technology-Bombay, MUMBAI (1992-1997)*
- ***Associate Faculty*** : *Energy Systems Engineering, Indian Institute of Technology-Bombay, MUMBAI (1992-2006)*
- ***Visiting Professor*** : *Dept. of Chem. Eng. & Biotech., University of Cambridge, CAMBRIDGE, UNITED KINGDOM (2025)*
  : *Delaware Energy Institute, University of Delaware, NEWARK, USA (2023 &2025)*
  : *School of Chemistry and Chem. Eng., Queen's University, BELFAST, UNITED KINGDOM (2023 & 2025)*
  : *International Research Organization for Advanced Science and Technology (IROAST), Kumamoto University, KUMAMOTO, JAPAN (2022-2024)*
  : *New Industry Creation Hatchery Center, Tohoku University, SENDAI, JAPAN (2006 & 2009)*
  : *Department of Materials Chemistry, Tohoku University, SENDAI, JAPAN (2002-2003)*
  : *School of Chemical Engineering, The University of Queensland, BRISBANE, AUSTRALIA (2001)*

OTHER ASSIGNMENTS

+ ***Adjunct Faculty*** : *School of Chem. Eng. & Anal. Sci., The University of Manchester, MANCHESTER (2018-2021)*
  : *Department of Chemical and Process Engineering, University of Surrey, GUILDFORD (2018-2021)*
  : *Australian Institute for Bioeng. & Nanotech., The University of Queensland, BRISBANE (2008-2011)*
  : *Dai Ichi Karkaria Fellow: University Department of Chemical Technology, MUMBAI (1999-2000)*
  : *New Industry Creation Hatchery Center, Tohoku University, SENDAI (2013-2018)*
  : *Golden Jubilee Fellow: Institute of Chemical Technology, MUMBAI (2016-2017)*
  : *School of Science and Health, University of Western Sydney, PENRITH (2013-2015)*

+ ***Visiting Academic*** : *School of Chemistry, Cardiff University, CARDIFF, UNITED KINGDOM*
  : *Global Innovative Centre for Adv. Nanomaterials, The University of Newcastle, AUSTRALIA*
  : *Department of Chemical & Biological Engineering, Monash University, CLAYTON, AUSTRALIA*
  : *Department of Surface Chemistry and Catalysis, Institute of Isotopes, BUDAPEST, HUNGARY*
  : *Department of Condensed Matter Physics, University of Geneva, GENEVA, SWITZERLAND*

+ ***International Visitor*** : *N.D. Zelinsky Institute of Organic Chemistry, MOSCOW, RUSSIA*
  : *National Institute of Materials Science, TSUKUBA, JAPAN*
  : *School of Chemical Sciences, Dublin City University, DUBLIN, IRELAND*
  : *School of Biotechnology, Dublin City University, DUBLIN, IRELAND*
  : *School of Science, Western Sydney University, PENRITH, AUSTRALIA*

RESEARCH INTEREST

: **Nanoscale & Nanoporous Materials including Zeolites, Zeo-types & Metal-Organic Frameworks with a focus on Green and Sustainable Chemical Processes; Solid State Materials for Energy Conversion and Storage; Environmental Remediation**

AWARDS

- Professor B. Viswanathan Award for Basic Research in Catalysis, CSI, Chennai 2024.
- Bhagyalakshmi & Krishna Ayengar Faculty Award, IIT-Madras, Chennai, 2024.
- Rev. Fr. Yeddanapalli Memorial Award, Indian Chemical Society, Kolkata, 2023.
- Royal Society of Chemistry Inspirational Award, London, United Kingdom, 2022.
- Long Service Award, Royal Society of Chemistry, London, United Kingdom, 2022.
- Distinguished Speaker, Platinum Seminar Series, Monash University, Clayton, 2018.
- Distinguished Lecture Series Speaker, The University of Manchester, Manchester, UK, 2018.
- Dr. G.P. Kane Distinguished Speaker, Indian Institute of Chemical Engineers, Kolkata, 2016.
- Royal Society of Chemistry Service Award, London, United Kingdom, 2014.
- Sistla Kameswari Young Scientist Award (Catalysis), Catalysis Society of India, Chennai, 2002.
- Mayavati Memorial Young Scientist Award (Solid State Chemistry), IASSCAS, Jammu, 2001.
- JCPDS Award, Int. Centre for Diffraction Data, Pennsylvania, 1990: Set 40, No.1204-1206.

HONOURS

- Vice-President, Catalysis Society of India, Madras, 2018 onwards.
- Honorary Treasurer, Royal Society of Chemistry–South India, 2015-2025.
- Member, Mission Mode Project: Catalysis for Sustainable Development, CSIR, 2017-2019.
- Member, Empowerment & Equity Opportunities for Excellence in Science, DST/SERB, 2016-2018.
- Member, Dublin City University's Research College & Advisory Panel, 2014-16.
- Member, Programme Advisory Committee Member (Phys. Chem.), DST/SERB, 2012-2015.
- Honorary President & Honorary Treasurer, RSC–South India, 2011-2015.
- Member, German Excellence Initiative, DFG, Bonn, 2011.
- Treasurer, Catalysis Society of India, 2003-2005.
- Secretary, Catalysis Society of India (Mumbai Chapter), 2002-2004.

NAMED LECTURES

- *Professor T. Balakrishnan Endowment Lecture, University of Madras, Chennai, 2022.*
- Rev. Fr. Yeddanapalli Endowment Lecture, Loyola College, Chennai, 2016.
- Rev. Sr. Annamma Philip Endowment Lecture, Stella Maris College, Chennai, 2012.
- Professor S. Lakshmi Narasimhan Endowment Lecture, A.M. Jain College, Chennai, 2012.
- Professor N. Venkatasubramanian Endowment Lecture, Vivekananda College, Chennai, 2010.

FELLOWSHIPS

- Elected Fellow, Indian Chemical Society, Kolkata, 2023.
- Elected Fellow, The Academy of Sciences, Chennai, 2016.
- Elected Fellow, Madras Science Foundation, Chennai, 2015.
- Elected Fellow, The Royal Society of Chemistry, London, 2002.
- Elected Fellow, Maharashtra Academy of Sciences, Pune, 2001.

EDITORIAL ASSIGNMENTS

- **Senior Editor**, Academia Catalysis, Academia.Edu Journals, 2025 onwards.
- **Associate Editor**, Journal of Sustainable Mater. Sci. and Eng., World Scientific, 2024 onwards.
- **Editorial Board Member**, Tetrahedron Green Chemistry, Elsevier Publishers, 2024 onwards.
- **Editorial Board of Referees**, ARKIVOC, Arkat USA Inc., 2024 onwards.
- **Associate Editor**, Frontiers in Chemical Engineering, Frontiers Media SA, 2019 onwards.
- **Editorial Board Member**, Materials Today Sustainability, Elsevier Publishers, 2018 onwards.
- **Editorial Board Member**, Catalysis in Green Chemistry and Eng., Begell House Publ., 2018 onwards.
- **Associate Editor**, Advanced Porous Materials, American Scientific Publishers, 2013-2018.

PROFESSIONAL ACTIVITIES

- Member, Board of Management, Vels Institute of Sci., Technol. & Adv. Studies, Chennai, 2019-2023.
- Member, Higher Secondary Textbook (Chemistry - 2nd Year) Writing Committee, SCERT, Chennai, 2019.
- Member, Higher Secondary Textbook (Chemistry - 1st Year) Writing Committee, SCERT, Chennai, 2018.
- Group Leader, IIT-Madras, Delegation to the University of Cardiff, Cardiff (UK), 2018.
- Member, Indo-French Delegation (Catalysis Design by NMR), Lille (France), 2017.
- Group Leader, IIT-Madras, The University of Manchester (UK) and IIT-Madras Delegation, 2017.
- Group Leader, IIT-Madras, Delegation to the University of Manchester, Manchester (UK), 2015.
- Coordinator, RSC – India Road Show, IIT-Madras, Chennai, 2014.
- Speaker, The New Indian Express ThinkEdu Conclave, Chennai, 2014.
- Member, The University of Queensland, and India Delegation to Brisbane, 2014.
- Member, UK Science & Innovation Network/RSC Delegation to Durban (South Africa), 2014.
- Member, Indo-Hungary Delegation (Catalysis), Chennai, 2010.
- Group Leader, Indo-Russian Delegations, St. Petersburg/Chennai/Novosibirsk (Russia), 2013/2011/2009.
- Member, Indo-UK Delegation (Catalysis), Pune, 2006.

STUDENTS' PRIZES

- Rev. Fr. Yeddanapalli Best Thesis Award (Sourav Khan), Catalysis Society of India, 2025.
- Bhagyalakshmi & Krishna Ayengar Student Prize (Surya K. Vatti), IIT-Madras, 2023.
- Prime Minister's Fellowship (PMFDR) Award, SERB, New Delhi (K.K. Athira), May 2023.
- Best Oral Presentation, Int. Con. on Recent Trends in Material and Magnetism (Vandana Verma), 2022.
- Best Poster Award, EUROMOF2021, Krakow (Rimita Bose), 2021.
- Best Thesis Award - LANGMUIR PRIZE (Rajesh K. Parsapur), Chemistry, IIT-Madras, 2019.
- CSI Best Poster Award, 17th National Workshop on Catalysis, Delhi (Sanjeev Gupta), 2019.
- IMMS10 Best Paper, 10th Int. Mesostructured Materials Symp., Los Angeles (S.K. Vatti/S. Gupta), 2018.
- Hindustan Platinum Best Paper, 23thNatl. Workshop on Catal., Bengaluru (Sanjeev Gupta), 2018.
- RSC-NIT Symp. on Heterogeneous Catalysis and Sustainable Chemistry, Trichy (Sanjeev Gupta), 2016.
- Hindustan Platinum Best Paper, 17th National Workshop on Catalysis, Hyderabad (K. Suthagar), 2016.
- Prof. Ramamurthy Endowment Prize for Best M.Sc. Dissertation (V.V. Kumar), 2012.
- Hindustan Platinum Best Poster, 15th National Workshop on Catalysis, Chennai (B. Kuppan) 2011.
- Hindustan Platinum Best Paper, 2nd Indo-Pacific Conf. on Catalysis, Pune (Vidya Krishna), 2000.
- Hindustan Platinum Best Paper, 14th Natl. Symp. on Catal., Chennai (R.J. Mahalingham), 1998.

CURRICULUM DEVELOPMENT

- ***B.Tech. (Chemical Engineering) / M.Sc. (Chemistry) / M.Tech. (Catalysis Technology)***

  - ✓ Solid State Chemistry and Its Applications (CH5180)
  - ✓ Kinetics and Catalysis (CY2010)
  - ✓ Solids and Surfaces (CA5020)
  - ✓ Introduction to Surface Analysis (CA5040)
  - ✓ Nanomaterials in Catalysis (CA5170)
  - ✓ Catalysis in Green Chemistry and Environment (CA6110)
  - ✓ Surfaces, Interfaces, Dispersed Systems and Macromolecules (CY6015)
  - ✓ Surface Chemistry and Catalysis (CY6112)
  - ✓ Experimental Methods in Chemistry (CH4180)

COURSES TAUGHT AT IIT-Bombay AND AT IIT-Madras

- ***B.Tech. (I^{st} Year)***

  - ✓ Chemistry I (Physical – Theory)
  - ✓ Chemistry II (Inorganic – Theory)
  - ✓ Chemistry Laboratory

- ***B.Tech. (2^{nd} & 4^{th} Year - Chemical Engineering)***

  - ✓ Kinetics and Catalysis
  - ✓ Experimental Methods in Chemistry

- ***M.Sc. / Ph.D. (Chemistry)***

  - ✓ Solid State Chemistry and Its Applications
  - ✓ Surfaces, Interfaces, Dispersed Systems
  - ✓ Principles of Solid State and Surface Chemistry
  - ✓ Surface Chemistry and Catalysis
  - ✓ Electron Spectroscopy
  - ✓ Physical Chemistry Laboratory I
  - ✓ Physical Chemistry Laboratory II
  - ✓ Research Methadology

- ***M.Tech. (Catalysis Technology)***

  - ✓ Solids and Surfaces
  - ✓ Nanomaterials in Catalysis
  - ✓ Introduction to Surface Analysis
  - ✓ Catalysis in Green Chemistry and Environment

- ***Preparatory Chemistry***

  - ✓ Physical Chemistry
  - ✓ Inorganic Chemistry
  - ✓ Chemistry Laboratory

OUTREACH ACTIVITIES

- **GIAN COURSES**
  - + 151003B06: Catalysis in Green Chemistry and Environmental Applications (*with Prof. K. Seshan, University of Twente, Enschede, The Netherlands*)
  - + 161003B11: Electrochemical Energy Conversion and Storage: Materials and Methods (*with Prof. A. Manthiram, The University of Texas at Austin, Austin, USA*)
  - + 161003B12: Nanomaterials: Size- and Shape-Dependent Phenomena – Advances in Catalysis and Energy Materials Applications (*with Prof. E. Roduner, University of Stuttgart, Stuttgart, Germany*)
  - + 171003B01: Nanoporous Materials in Catalysis – Fundamentals and Applications (*with Prof. M. Anderson, The University of Manchester, Manchester, UK*)
  - + 171003B05: Self-assembled Nanoporous and Hybrid Silica Materials: Applications in Catalysis, Nanomedicine and Optics (*with Dr. Michel Wong Chi Man, Institut Charles Gerhardt Montpellier, Montpellier, France*)
  - + 2700207: Characterization of Heterogeneous Catalysts: Bulk, Surface, In-Situ and Operando Methods (*with Prof. Dr. Miguel A. Banres, CSIC-Instituto de Catalysis, Madrid, Spain & Dr. Sourav Sagar, IIT-Madras*)

- **ORIENTATION PROGRAMME IN CATALYSIS**
  - + Organizer (jointly with Professor B. Viswanathan) for a 3-week program on Catalysis (Winter School) for research scholars starting from the year 2000 onwards – so far 19 programs have successfully been completed.

- **CAPSULE COURSES FOR THE INDUSTRY**
  - + Organizer (jointly with Professor B. Viswanathan) on-site program on Industrial Catalysis for the following Industry.

- **ROYAL SOCIETY OF CHEMISTY – SOUTH INDIA SECTION**
  - + Organizer on-site Chemistry Popularization programs for Schools, Colleges and Universities since 2011 (jointly with Professor S. Balasubramanian and Professor M. Palaniandavar).

PUBLICATIONS : Author / Co-author of **400+** Research Papers and about **30** Patents.

Citations: **7936**; *h*-index = **47**; *i*10-index = **154**

MANPOWER TRAINED : PhD **(28)** MTech **(21)** MSc **(29)** PDF **(22)** Project Staff **(20)**

LECTURES DELIVERED : Plenary Talks (**15**); Keynotes (25); Invited (**200+**); Guest Lectures (**100+**)

SELECTED PUBLICATIONS *(in last 5 years)*

S.No.	Author(s)	Full title	Journal	Vol.	Year	Pages
1	B. Venugopal NS. Kaisare **P. Selvam**	Maximizing Methanol Selectivity over Microporous FeS-1 Catalyst via Aqueous-phase Partial Oxidation of Methane with H_2O_2.	**Catal. Sci. Technol.** *(Cover Feature Article)*	15	2025	2690-2705
2	R. Bose, V. Bon TB. Nanakkal **P. Selvam** S. Kaskel NS. Kaisare	Coadsorption of CO_2/CH_4 onto Zeolitic Imidazolate Frameworks: The Role of Inner Surface Polarity, Framework Flexibility and Topology	**Micropor. Mesopor. Mater.**	390	2025	113557

3	S. Gupta Y. Kwak RP. Raj **P. Selvam**	Ytterbium-nitrogen co-doped ordered mesoporous TiO2: The innovative hetero-phase photocatalyst for harnessing solar energy in green hydrogen production	**J. Mater. Chem. A** *(Cover Feature Article)*	12	2024	6906-6927
4	R. Bose et al. JJ. Varghese **P. Selvam** NS. Kaisare	Molecular mechanism of reversible gas adsorption and selectivity in ZIF-90	**J. Phys. Chem. C**	128	2024	13207-13216
5	M.A. Kumar N. Nagarjun H. Manyar **P. Selvam**	Ionic liquid templated synthesis of cobalt-substituted mesoporous aluminophosphates: A novel heterogeneous catalyst for selective oxidation of cyclohexane to cyclohexanol	**ChemCatChem** *(Cover Feature Article)*	16	2024	e202301729
6	G. Shivudu K. Chandraraj **P. Selvam**	Production of xylooligosaccharides from xylan catalyzed by endo-1,4-β-Dxylanase-immobilized nanoscale carbon, silica, and zirconia matrices,	**Mol. Catal.**	564	2024	114287
7	R. Bose, V. Bon N. Bonisch **P. Selvam** N. S. Kaisare S. Kaskel	Crystal Size Dependent Flexibility in ZIF-7: From Macro- to Nanoscale,	**Chem. Mater.**	35	2023	7825-7838
8	T.V.R. Mohan M. Nallagangula K Kala et al. M. Sasidharan **P. Selvam**	Pyridinic-nitrogen on ordered mesoporous carbon: A versatile NAD(P)H mimic for borrowing-hydrogen reactions	**J. Catal.**	419	2023	80-98
9	S. Gupta SK. Vatti, Q. Gu D. Wagh H. Manyar **P. Selvam**	Defect-induced Ordered Mesoporous Titania Molecular Sieves: A Unique and Highly Efficient Hetero-phase Photocatalysts for Solar Hydrogen Generation.	**ChemNanoMat** *(Cover Feature Article)*	9	2023	e202300319
10	P.R. Murthy **P. Selvam**	Ordered Mesoporous Carbon-supported Morphologically controlled Nano-Gold: Role of Support as well as the Shape and Size of Gold Nanoparticles on the Selective Oxidation of Glycerol,	**ChemCatChem**	14	2022	e202200006
13	M. Kamal et al. **P. Selvam** Md. Shahriar A. Hossain Y. Yamauchi	Nanoarchitectured peroxidase-mimetic nanozymes: mesoporous nanocrystalline α- or y-iron oxide?	**J. Mater. Chem. B**	7	2019	5412-5422
14	S. Khan RP. Raj TVR. Mohan et al. U.V. Varadaraju **P. Selvam**	Electrochemical performance of nano-$LiFePO_4$ embedded ordered mesoporous nitrogenous carbon composite as cathode material for Li-ion battery applications	**J. Electroanal. Chem.**	848	2019	113242

15	SI. Hossain MA. Aziz D. Han **P. Selvam** S. Shanmugam	Fabrication of SPAEK–cerium zirconium oxide nanotube composite membrane with outstanding performance and durability for vanadium redox flow batteries	**J. Mater. Chem. A**	6	2018	20205-20213
16	NV. Krishna S. Anuradha R. Ganesh VV. Kumar **P. Selvam**	Sulfonic acid-functionalized ordered mesoporous silica and their application as highly efficient and selective heterogeneous catalysts in the formation of 1,2-monoacetone-D-glucose	**ChemCatChem** *(Cover Feature Article)*	10	2018	5610-5618
17	RK. Parsapur **P. Selvam**	Rational design, synthesis, characterization, and catalytic properties of high-quality low-silica hierarchical zeolites with FAU and LTA topologies,	**Sci. Rep.**	18	2018	131-159
18	TVR. Mohan S. Palla B. Kuppan N. Kaisare **P. Selvam**	Hydrogen Sorption Characteristics of Ordered Mesoporous Carbons: Experimental and Modeling Viewpoint	**J. Chem. Eng. Data** (*Cover Feature Article*)	63	2018	4543-4551
19	B. Ekambaram P. Karthick et al. B. Neppolian Y. Hayakawaya **P. Selvam**	Visible-Light Active Catechol-Metal Oxide Carbonaceous Polymeric Material for Enhanced Photocatalytic Activity	**J. Mater. Chem. A**	5	2017	384-396
20	N.V. Krishna **P. Selvam**	Architecting ordered mesoporous aluminosilicates under acidic condition *via* intrinsic hydrolysis method	**Dalton Trans.**	46	2017	770-779
21	A. Milev L. George, S. Khan **P. Selvam** GSK. Kannangara	Li-ion Kinetics in $LiFePO_4$/Carbon Nanocomposite Prepared by a Two-step Process: The Role of Phase Composition	**Electrochim. Acta**	209	2016	565-573
22	F. Benyettou, F. Ravaux et al. **P. Selvam** A. Trabolsi	F108-Gated Mesoporous γ-Iron Oxide Nanoparticles for Magnetically Triggered Doxorubicin Delivery and Hyperthermia,	**Chem. Eur. J.**	22	2016	17020-17028
23	A. Suzuki P. Bonnaud MC. Williams **P. Selvam,** A. Miyamoto	Effect of the titanium nanoparticle on the quantum chemical characterization of the liquid sodium nanofluid	**J. Phys. Chem. B**	120	2016	3527-3539