

PROFILE

Name : **Dr. (Ms.) J. Judith Vijaya, M.Sc. Ph.D. F.I.C.S.**

Aided

Department: Chemistry ID No: CHE-16

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Educational qualifications

S.No	Degree	University	Year	Subjects
1	B.Sc	Stella Maris College (Autonomous) University of Madras	1998	Chemistry
2	M.Sc	Loyola College (Autonomous) University of Madras	2000	Chemistry
3	Ph.D	Loyola College (Autonomous) University of Madras	2008	Chemistry

Total Teaching experience at Loyola

S.No.	Department	Category	From-To (period)
1	Chemistry	FIP	2001-2002
2	Chemistry	Management	2002-2007
3	Chemistry	Aided	2007 – till date
Total Teaching Experience			9 years

Research Activities

No. of M.Phil. as guide : Nil
No. of Ph.D. as guide : 3 (Guiding)

Positions held in Loyola : Nil

Position held outside Loyola : Nil

Books Published

- Spinel sensors – An introduction
J. Judith Vijaya, in 2007, Published by Annai Publications, Chennai – 24.

List of significant publications : 22

1. Two stage process on the preparation and characterization of porous composite carbon from rice husk by phosphoric acid activation.
L. John Kennedy, **J. Judith Vijaya** and G. Sekaran
Industrial and Engineering Chemistry Research, 2004. Vol. 43, pp.1832 – 1838.
2. Electrical conductivity studies of porous carbons derived from rice husk.
L. John Kennedy, **J. Judith Vijaya** and G. Sekaran
Material Chemistry and Physics, 2005. Vol. 91, pp. 471 – 476.
3. Bulk preparation and characterization of mesoporous carbon nanotubes by catalytic decomposition of cyclohexane on sol-gel prepared Ni-Mo-Mg oxide catalyst.
L. John Kennedy, **J. Judith Vijaya**, G. Sekaran, J. Joseph, J. Daisy Rani and John Pragasam.
Materials Letters, 2006. Vol. 60, pp. 3735-3740.
4. Effect of Sr addition on the humidity sensing properties of CoAl_2O_4 composites.
J. Judith Vijaya, L. John Kennedy, G. Sekaran, B. Jeyaraj and K.S. Nagaraja
Sensors and Actuators B, 2006. Vol. 123, pp. 211-217.
5. Synthesis, characterization and humidity sensing properties of BaAl_2O_4 composites.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja
Sensors and Actuators B, 2007. Vol.124, pp. 542-548.
6. Sr(II) added MgAl_2O_4 composites for ammonia detection.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Chemistry, 2006. Vol. 2(6), pp. 215-222.

7. Methanol sensing behavior of strontium(II) added MgAl_2O_4 composites through solid-state electrical conductivity measurements.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Sensors and Transducers, 2006. Vol. 74, pp. 864-873.
8. Synthesis, characterization and humidity sensing properties of Cu–Sr–Al mixed metal oxide composites
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Materials Research Bulletin, 2007. Vol.43, pp. 473-482.
9. NiAl_2O_4 composites as benzene and toluene sensors.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Materials Letters, 2007. Vol. 61 (30), pp. 5213-5216.
10. Utilization of strontium added NiAl_2O_4 composites for the detection of methanol vapors.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Journal of Hazardous Materials, 2008. Vol.153 (1-2), pp. 767-774
11. Utilization of Sr(II)-added calcium aluminate for the detection of volatile organic compounds.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Industrial and Engineering Chemistry Research, 2007. Vol. 46, pp. 6251-6258.
12. Synthesis, characterization and acetone sensing properties of novel strontium(II)-added zinc aluminate composites.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Sensors and Transducers, 2007. Vol. 76, pp. 1008-1017.
13. Humidity sensing characteristics of sol-gel derived Sr(II)-added ZnAl_2O_4 composites.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Sensors and Actuators B, 2007. Vol. 127, pp. 619-624.
14. Equilibrium, kinetic and thermodynamic studies on the adsorption of m-cresol onto micro and mesoporous carbon.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.Kayalvizhi.
Journal of Hazardous Materials, 2007. Vol. 149, pp. 134-143.
15. Adsorption of phenol from aqueous solutions using mesoporous carbon prepared by two stage process.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.Kayalvizhi.
Chemical Engineering journal, 2007. Vol. 132, pp. 279-287.

16. Alcohol sensing properties of sol-gel prepared Sr(II)-added cobalt aluminate spinel composites.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja.
Sensors and Actuators B, 2008. Vol. 129 (2), pp. 741-749.
17. Sr(II)-added ZnAl₂O₄ Spinel Composites as an Ammonia Sensor.
J. Judith Vijaya, L. John Kennedy, G. Sekaran and K.S. Nagaraja
Sensors and Transducers, 2008. Vol. 91, pp. 109- 115.
18. Preparation and VOC gas sensing properties of Sr(II)-added copper aluminate spinel Composites.
J. Judith Vijaya, L. John Kennedy, G. Sekaran, M. Bayhan and M. Albert William.
Sensors and Actuators B, 2008. Vol. 134, pp. 604-612.
19. Benzene and toluene sensing properties of Sr(II)-added barium aluminate spinel composites.
J. Judith Vijaya, B. Jeyaraj, L. John Kennedy and G. Sekaran.
Sensors and Transducers, 2008. Vol. 96 (9), pp. 68-80.
20. Studies on structural and optical properties of zinc oxide nanobushes and Co-doped ZnO self aggregated nanorods synthesized by simple thermal decomposition route.
J. Judith Vijaya, J. Joseph Freedman, L. John Kennedy, R. Thinesh Kumar and G. Sekaran.
Materials Research Bulletin, 2010 (article in press).
21. Sol-gel synthesis and structural characterization of nano copper aluminate for the catalytic oxidation of benzyl alcohol.
J. Judith Vijaya, R. Thinesh Kumar, L. John Kennedy, N. Clament, A. Udaya and G. Sekaran
Catalysis Letters, (2010) (article in press).
22. Humidity sensing behaviour of nanocrystalline -PbO synthesized by alcohol thermal process.
Sk. KhadeerPasha, L. John Kennedy, **J. Judith Vijaya** and K. Chidambaram
Sensors and Transducers (2010) (article in press).

LIST OF INDIAN PATENTS

- A process for the preparation of metal impregnated activated carbon polymer composite for industrial applications.
G Sekaran, L John Kennedy, A. Gnanamani, **J. Judith Vijaya**, S Rajamani.
(No. 320 Del 2004) dated 24-04-2004.

- An improved process for the preparation of carbon nanotubes for industrial applications. G Sekaran, L John Kennedy, **J. Judith Vijaya** (No. 316 Del 2004) on 24-04-2004.
- A process for the preparation of functional aliphatic hydrocarbons from volatile liquid hydrocarbons for industrial applications (709 Del 2008) dated 26-09-08
G Sekaran, L John Kennedy, **J. Judith Vijaya**, B Ravindran, & A. Udaya

Papers presented at International Conferences (ORAL)

- International symposium of research students on Materials science and Engineering, conducted by Indian Institute of Technology (IIT), 20-22 December 2004.
- International symposium on chemical education and research conducted by Loyola College, from 04-07 January 2004.
- International interdisciplinary conference on sustainable technologies for environmental protection (ICSTEP), 7 – 9 January 2006, conducted by Coimbatore Institute of Technology, Coimbatore.
- International conference on Recent advances in Chemistry, January 2006, conducted by Department of Chemistry, Auxillium College, Vellore.
- Asian academic network for environmental safety and waste management, December 2006, conducted by Anna University, Chennai.
- International conference on Sensors for environmental applications, 8-10 January 2008, conducted by Loyola Institute of Frontier Energy (LIFE), Loyola College, Chennai.
- International conference on “Sol-gel processes for advanced ceramics (SGPAC-2009), 11-14 October 2009, conducted by IGCAR, Kalpakkam.
- International conference on “Recent Research Trends in chemical Sciences” and 46th Annual Convention of Chemists, 02-06 December 2009, conducted by VIT University, Vellore.
- International conference on “Green Chemistry and Sustainable Environment (GCASE-2010)” conducted by Department of Chemistry, Holy Cross College (Autonomous) Tiruchirappalli - 620 002.

Papers presented at National Conferences (ORAL)

- National Symposium on Metalloorganic Chelates & Recent Advances in Chemistry conducted by Presidency College. (NSCRAC), 9-10th Feb. 2001.
- Chemists Meet conducted by Indian Institute of Technology (IIT), Chennai, 7-8th Dec. 2002.
- National Symposium on Chemistry, conducted by Central Leather Research Institute, (CLRI), Chennai, 7-9th Feb 2003.
- National seminar on Healthy environment for the next generation conducted by Loyola College, Chennai, 2-4th Dec. 2004.
- National seminar on recent trends in chemistry and industry, conducted by Guru Nanak College, Chennai, February 2005.
- National symposium on Microbial and plant biotechnology, conducted by Loyola College, Chennai, February 2005.
- National conference on recent advancements in nanoscience and technology, conducted by Periyar University, Salem, September 2005.
- National symposium on Crystal growth and characterization, conducted by Loyola College, Chennai, September 2005.
- Annual IIT Madras Chemistry Symposium & The First Mid-Year Meeting of the Chemical Research Society of India, Chennai, July 2006.
- National Seminar on Environmental Biosensors, Loyola Institute of Frontier Energy, Loyola College, Chennai, January 11-12, 2007.
- 6th National Conference on emerging trends in crystal growth and nano materials” (NECAN-2008), Loyola College, Chennai , February 28-29, 2008.
- National Conference on Non-conventional energy sources, Guru Nanak College, Chennai, March 11-13, 2009.
- National conference on Recent trends in crystal growth, thin films and nanostructured materials (Crystal-NANO-2009), Aditanar College of arts and science, Tiruchendur, August 5-6, 2009.

- National conference on “Nanotechnology for Energy and Environmental Applications” (Horizon-2009), NIT (National institute of technology), Trichy, 24th October 2009.

List of invited /endowment lectures

1. Invited Lecture on “Nanosensors for the detection of volatile organic compounds”
J. Judith Vijaya, New trends in nano chemistry, 25 -26, August 2006.
Department of Chemistry, Sacred Hearts College, Tirupattur, Tamil Nadu, India.
2. Expert lecture on “Science in and around us”
J. Judith Vijaya, Orientation Program for Tamilnadu government recruited staffs in Maths, 2008.
Department of Mathematics, Loyola College, Chennai – 34.
3. Endowment Lecture on “Proliferation of Nano”
J. Judith Vijaya , Dr. S.J. Arulraj Endowment Lecture, 14th December 2009.
Department of Chemistry, St. Joseph’s College, Trichy, Tamil Nadu, India.
4. Expert lecture on “Lubricants/Solid Lubricants”
J. Judith Vijaya, Faculty development program (FDP) on “Engineering Chemistry- I (CY 2111), 30th July 2010.
Department of Chemistry, Anna University, Chennai.

Projects Undertaken

1. “Liquid phase catalytic oxidation of primary and secondary alcohols using strontium(II)-added transition metal aluminate nano composites” by Department of Science and Technology (DST), India for 16 lakhs in 2008.
2. “Enhanced photocatalytic degradation of certain endocrine disruptors using ZnO and M-doped ZnO (M = La, Ce, Zr, Sr and Ba) nanorods prepared by low temperature simple precipitation route” by University Grants Commission (UGC) for Rs. 8 lakhs in 2010.

Details of professional training and research experience, specifying period:

- January 2002 – January 2008 : **Ph.D** from Loyola College, Chennai – 34.
- Passed **CSIR – UGC** National Eligibility test for Lectureship held on December 31st, 1999.
- A short course on how to develop and trouble shoot GC and HPLC methods. February, 2004. Sponsored by American Chemical Society. Indian Institute of Technology, Chennai. India.
- Training programme for Resource Persons on Detection and Prevention of Food Adulteration Conducted at Stella Maris College, 17-19th January 2002.
- UGC sponsored Refresher course on Analytical Instrumentation conducted at Indian Institute of Technology (IIT), 17-28th February 2003.
- UGC - Refresher Course in Chemistry – Batch XVII, 17th August-6th September 2005. UGC- Academic Staff College, University of Madras, Chennai, India.
- Workshop on “Isotope tracer techniques for water resources development and management”. 17 December 2007. Centre for Environmental Sciences, University of Madras, Chennai, India.
- Selected one among 50 participants to attend DST sponsored workshop on “Electrochemistry”. 15-19 September 2008. Central Electrochemical Research Institute (CECRI), India.
- UGC sponsored Orientation course, 1-28 November 2008. Academic Staff College, University of Madras, Chennai, India.
- Selected one among 60 participants to attend “One day IUAC acquaintance programme on Accelerator based Science and Technology”. October 20, 2009. VIT University, Vellore, India.
- Selected to attend 18th National Symposium on Ultrasonics, 19-20 Dec 2009. VIT University Vellore, India.

Professional recognition, Awards, Fellowships received

- **Fr. Yeddanapalli Award & Scholarship** – Proficiency in Chemistry for 1998-1999.
- **Dr. R.S. Sampath Prize (Gold medal)** – Proficiency in Chemistry for 1998-2000.
- **Mary Appoline Memorial Medal & Prize** (1999)
- **L.A.A. Northern I Chapt – III Scholarship** (2000).
- Passed **CSIR – UGC** National Eligibility test for Lectureship held on December 31st, 1999.
- **Young scientist research Project awarded** in the year 2008 by Department of Science and Technology (DST), India.
- **BEST PAPER PRESENTATION** - Johnsi, Sylvia, Prem Kumar and **J. Judith Vijaya**, “6th National Conference on emerging trends in crystal growth and nano materials” (NECAN-2008), Loyola College, Chennai , February 28-29, 2008.
- Awarded the **Fellow of Indian Chemical Society** (F/6922-LM) from 19th December 2008.
- Selected as the **member of American Chemical Society** (30055391) from 21st April 2009.
- Selected one among the 40 young researchers for the “**59th Meeting of Nobel Laureates**” at Lindau, Germany from 28th June to 11th July 2009 and awarded the “**DST award for participation with Nobel Laureates**”.
- Awarded the “Women Scientist and Professionalist” by Mother Teresa Women’s university on 25th August 2009.
- My article about “**59th Meeting of Nobel Laureates**” at Lindau, Germany was published in Nature online journal published by “Nature” international Edition.
<http://www.nature.com/nindia/2009/090703/full/nindia.2009.220.html>
- Interviewed by Kodaikanal FM radio and delivered a talk on “How to create interest on research among women” on 27th August 2009 in the program “Nandavanapookal”.
- Selected as the subject expert-examiner for the Ph.D. Viva Voce examination of candidates from Anna University, Chennai.
- Selected to review the book “Chemistry” written by Raymond Chang, 9th edition by Tata Mc-Graw Hill publishers, New Delhi.

- Selected as the member of catalysis society of India in July 2010.
- Selected in the World's Biography of Marquis Who's Who World book in Science and Engineering, November 2011 (28th Edition).

Reviewer/referee for international journals

- Sensors and Actuators B: Chemical
- Journal of Alloys and Compounds
- Materials Letters
- Industrial and Engineering Chemistry Research
- International Journal of Automation and Control
- Materials Chemistry and Physics
- Process biochemistry
- Journal of Hazardous Materials

Research area of interests

Material science, characterizations of materials and catalytic activities of materials with special focus on metal oxides, spinels, carbon materials, nano materials, volatile organic compound oxidation/ destruction, catalytic conversion of hazardous chemicals, biocatalysis, environmental pollution abatement, environmental /green chemistry, solar cells, humidity and gas sensors.