

PROFILE

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

Department : Chemistry
ID No : Aided : CHE-16
Mailing Address : Assistant Professor
Catalysis and Nanomaterials Research Laboratory
Department of Chemistry, Loyola College
Nungambakkam, Chennai 600 034.

Phone : 044 – 28178200 Extn. 333

Fax : +91-44-28175566

E-mail : jjvijaya78@gmail.com

Educational qualifications :

S.No	Degree	University	Year	Subjects	Percentage
1	B.Sc.	Stella Maris College, University of Madras	1998	Chemistry	79%
2	M.Sc.	Loyola College, University of Madras	2000	Chemistry	78% Gold medalist
3	Ph.D.	Loyola College, University of Madras	2008	Chemistry	Non-gradual

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			10 years

Research Activities

No. of M.Phil. as guide : 3 (guided) & 3 (guiding 2011-12)

No. of Ph.D. as guide : 10 (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 - 27

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 ZnAl_2O_4 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. Vol. 45 (10) 1481-1486.
21. Humidity sensing behaviour of nanocrystalline α -PbO synthesized by alcohol thermal process.
 Sk. KhadeerPasha, L. John Kennedy, **J. Judith Vijaya** and K. Chidambaram
Sensors and Transducers, 2010. Vol. 122 (11), 20-27.
22. Lead Oxide humidity sensor.
 Sk. KhadeerPasha, L. John Kennedy, K. Chidambaram and **J. Judith Vijaya**
Sensors and Transducers, 2010. Vol. 122 (11), 113-119.
23. Photocatalytic degradation of phenolic sytan using TiO₂ impregnated activated carbon.
 A. Udaya, L. John Kennedy, **J. Judith Vijaya**, G. Sekaran
Journal of colloids and Interface science, 2011. Vol. 355, 204-209.
24. Studies on Heterobinuclear Copper–Zinc Complexes of Amino acids as Biomimic Systems of *Superoxide Dismutase*.
 N. Clament Sagaya Selvam, R. Thinesh Kumar, L. John Kennedy, J. Judith Vijaya
Asian Journal of Chemistry, 2011. Vol.23, Issue 10, 4328-4334.
25. Simple and rapid synthesis of cadmium oxide (CdO) nanospheres by microwave assisted combustion method
 N. Clament Sagaya Selvam, R. Thinesh Kumar, L. John Kennedy, J. Judith Vijaya
Powder Technology, 2011. Vol. 211, 250-255.
26. Selective catalytic oxidation of benzyl alcohol by sol-gel synthesized nano copper aluminate.
 R. Thinesh Kumar, N. Clament Sagaya Selvam, L. John Kennedy, **J. Judith Vijaya**
Asian Journal of Chemistry, 2011. Vol 23, Issue 24, 1125-1129.
27. Catalytic oxidation of alcohols using metal oxides.
 T. Adinaveen, **J. Judith Vijaya**
 NCCR internal bulletin , 2011 (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

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.
- 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.
- The 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 from July 2010.
- Selected in the Biography of the Marquis Who'sWho in Science and Engineering , November 2011, 28th Edition.
- Selected to attend the 3rd Science conclave: A Congregation of Noble Laureates at IITM, Allahabad from 8-14 December 2010.

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
- Physica B

Papers presented at International Conferences in India

- 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)”, 07-08 July 2010, conducted by Department of Chemistry, Holy Cross College (Autonomous) Tiruchirappalli - 620 002.
- International conference on “The key role of life sciences for sustainable development in the world” 30-31 August 2010, conducted by Hindustan College of Arts & Science, Kelambakkam, Chennai – 603 103.
- International conference on “Advanced materials and its applications”(ICAMA-2011) 4-5 March 2011, conducted by Kalasalingm university, Srivilliputhur.
- International Conference on Vistas in Chemistry (ICVC-2011), 11-13 October 2011, conducted by IGCAR, Kalpakkam, Tamil nadu.
- International conference on Advanced Materials (ICAM 2012), 5-7 January 2012 conducted by Department of Physics, Loyola College, Chennai – 34.
- International conference on Frontiers in material science for energy and environment, 11-13 January 2012 conducted by LIFE, Loyola College, Chennai – 34.

Papers presented at International Conferences in abroad

1. **Title of the paper:** Structural and Optical Properties of Pure and La-Doped ZnO nanoparticles Synthesized by Simple Precipitation Route
Name of Conference: EUROMAT 2011, European congress and exhibition on advanced materials and processes
Venue & country: LE CORUM, Montpellier, France
Duration : 12 - 15 September 2011.
2. **Title of the paper:** Synthesis and Characterization of Plant Ceramics Doped Tin Oxide for Humidity Sensing Application
Name of Conference: IEEE SENSORS 2011
Venue & country: University of Limerick, Ireland
Duration : 28 - 31 October 2011.

9. 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 Feb2003.
- 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 Seminar on “Chemistry – Current Focus”, Madras Christian College, Chennai, March 24, 2010.
- 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.
- National conference on “Nanomaterials and its applications” (Horizon-2010), NIT (National institute of technology), Trichy, 23rd October 2010.

- National Conference on Current Trends in Chemistry conducted by Bharathiar University, Coimbatore. (NCCTC -10), 2-3rd December 2010.
- National Conference on Chemistry of Nanomaterials and Molecular Dynamics, Annamalai University, Chidambaram (CNMD 2010), 30 - 31st December 2010.
- “20th National Symposium on Catalysis” National Centre for Catalysis Research, IIT Madras, Chennai, December 19 -22, 2010.
- National Conference on Advances in Nanomaterials in Catalysis, Loyola College, Chennai, December 18 and 19, 2010.
- National Conference on Recent Advances in Molecular Physics, Queen Mary’s College, Chennai, February 10-11, 2011.
- National Conference on Material Chemistry, Guru Nanak College, Chennai, 9 -11 February 2011.
- 15th National workshop on the role of new materials in catalysis, IIT Madras, Chennai, 11-13 December 2011.

BEST PAPER PRESENTATION AWARD (Oral)

- On the topic “ **Nanomaterials**”
 Johns, Sylvania, Prem Kumar and **J. Judith Vijaya**, at “6th National Conference on emerging trends in crystal growth and nano materials” (NECAN-2008), Loyola College, Chennai , February 28-29, 2008.
- On the topic “**Low temperature oxidation of ethanol using Zn-Sr-Al mixed oxide nano composites**”
 T. Adinavin, R. Thinesh Kumar, L. John Kennedy and **J. Judith Vijaya**, at International conference on “The key role of life sciences for sustainable development in the world” 30-31 August 2010, conducted by Hindustan College of Arts & Science, Kelambakkam, Chennai – 603 103.
- On the topic “**Pure and metal (M = Mg and La) doped ZnO Nanoparticles: Synthesis Structural, Optical and photocatalytic properties**”
 N. Clament Sagaya Selvam, R. Thinesh Kumar, L. John Kennedy and **J. Judith Vijaya**, at National Conference on “Nanotechnology for Energy and Environmental Applications” (Horizon-2009), NIT (National institute of technology), Trichy, 24th October 2009.

BEST PAPER PRESENTATION AWARD (Poster)

On the topic “**Low temperature oxidation of alcohols using Co-Sr-Al mixed oxide nano composites**”

T. Adinavin, R. Thinesh Kumar, L. John Kennedy and **J. Judith Vijaya**, at National Conference on Recent Advances in Molecular Physics, Queen Mary’s College, Chennai, 10-11 February 2011.

National Conference Organized:

Organizing Secretary - National Conference on Advances in Nanomaterials in Catalysis, Loyola College, Chennai December 18 and 19, 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.

- Attended 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.
- Selected to attend Agricultural and Environmental Concerns – Role of Education” on 4th February 2011 at Taj Coromandel, Chennai.
- Selected to attend One day workshop on “Nanotechnology” on 28th February 2011 at Loyola College, Chennai- 34.
- Attended Refresher course on “Chemistry”, 11-31 August 2011. Academic Staff College, University of Madras, Chennai, India.

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 Tamil Nadu government recruited staffs in Maths, July 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.
5. Invited Lecture on “Nanomaterials – unbounding future”

J. Judith Vijaya, Program on “An insight into Nanotechnology”, 09th October 2010.

Department of Physics & Chemistry, Achariya Arts & Science College, Puducherry.

6. Invited Lecture on “Essentials of Nano”

J. Judith Vijaya, National conference on Advances in Chemistry (NCAC 2011), 02nd March 2011, Department of chemistry, Easwari Engineering College, Ramampuram.

7. Lecture on “Best practices at Loyola”

J. Judith Vijaya, Orientation program of the junior staffs. Loyola College, Chennai - 34, 7th June 2011.

8. Expert lecture on “Lubricants/Solid Lubricants”

J. Judith Vijaya, Faculty development program (FDP) on “Engineering Chemistry- I (CY 2111), 16th June 2011.

9. Smart Class room – needs and implications

J. Judith Vijaya, St. Xavier’s College, Palayamkottai, 27th September 2011.

Major Projects sanctioned :

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 (2008-2011).

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 (2010-13).

Mo-U signed:

Mo-U has been signed between NCCR, IIT Madras and Catalysis and nanomaterials Research laboratory in November 2011.

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, pollution Abatement, environmental /green chemistry, solar cells, humidity and gas sensors.