

## Jaya T. Varkey

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### Research Interest

Solid-phase and solution phase organic synthesis, Peptide chemistry, Polymer chemistry, Nanoscience, Heterogeneous catalysis.

### Teaching and Research Experience

- Assistant Professor, Department of Chemistry, St. Teresa's College, Ernakulam, Kerala (2005 onwards)
  - Guest Lecturer, Department of Chemistry, St. Teresa's College, Ernakulam, Kerala (2003-2005)
- Postdoctoral Fellow, University of Minnesota, Minneapolis, USA, (1999-2003) 4 years post doctoral research experience.
  - \* *Solid-phase synthesis of consolidated ligands for biological and pharmacological studies*, (Dr. George Barany, Department of Chemistry, University of Minnesota & Dr. David Cowburn, Rockefeller University, New York).
  - \* *On-resin intramolecular chemoselective oxime bond formation to cyclic peptides*, working on this in collaboration with Dr. Dominique Lelievre, Centre de Biophysique Moleculaire (CNRS), 45071, Orleans Cedex 2, France.
  - \* *Side-chain anchoring strategy for solid-phase synthesis of peptide acids with C-terminal cysteine* (In collaboration with Dr. Balazs Hargittai, Department of chemistry, Mathematics and Physical Sciences, Saint Francis University, Loretto, PA, USA).
  - \* *Chemical syntheses and biological activities of lactam analogues of  $\alpha$ -Conotoxin SI*, ( in collaboration with Dr. Robert W. Janes, University of London, London, UK).
- Have five years research experience in Organic Polymer Chemistry under the guidance of Dr. V. N. Rajasekharan Pillai (Vice-Chairman, UGC, New Delhi and Professor (on-leave), School of Chemical Sciences, Mahatma Gandhi University, Kerala) in solid-phase peptide synthesis (including Ph.D. work). *Developed a novel solid support (1, 6-hexanediol diacrylate cross-linked polystyrene) for solid phase peptide synthesis (1992-97).*

4. Worked at Molecular biophysics unit, Indian Institute of Science, Bangalore, under the guidance of Prof. P. Balaram, as part of Ph.D. program.
5. Project work in synthetic organic chemistry at Reckett & Colman of India Limited, Hosur, Tamil Nadu, India as part of M. Sc. Course, (1990-91).

### Education

1. Ph.D. (Organic Polymer Chemistry) 1997, Title: **Synthesis of thioredoxin partial Sequences on a newly developed 1,6-hexanediol-diacrylate crosslinked polystyrene resin**. Mahatma Gandhi University, Kottayam, Kerala, India.
2. M.Sc. (Applied Chemistry) 1991, Cochin University of Science and technology, Kochi, Kerala, India.
3. B.Sc. (Chemistry) 1988, Mahatma Gandhi University, Kottayam, Kerala, India.

### Publications

#### Books (International and National)

1. "Solid phase synthesis of Thioredoxin sequences –an analytical approach" published by Lambert Academic Publishing, Germany. It is printed in USA and UK. It is on Amazon.com. The link is [http://www.amazon.com/Solid-Phase-Synthesis-ThioredoxinSequences/dp/3845428848/ref=sr\\_1\\_1?s=books&ie=UTF8&qid=1314447267&sr=1-1](http://www.amazon.com/Solid-Phase-Synthesis-ThioredoxinSequences/dp/3845428848/ref=sr_1_1?s=books&ie=UTF8&qid=1314447267&sr=1-1) ISBN: 978-3-8454-2884-0
2. Authored a chapter in the book " Nanostructured ceramic oxides for supercapacitor applications" published by Taylor and Francis, CRC/Press, USA. ISBN-13: 978-4665-7690-2
3. Text book on advanced organic chemistry based on restructured syllabus for undergraduate complementary courses common for Botany, Zoology and Family and Community Science, 2017, ISBN9788172550929.

#### Books under preparation (International)

1. Academic editor, International Book titled "Peptide Synthesis" publishing by INTECHOPEN, London, UK
2. Writing a book on "Polymer supported metal complexes for catalytic applications" to be published by Apple Academic Press, Oakville, Ontario, Canada
3. Invited by the International publisher CRC press, Taylor and Francis to publish a book with them. Discussions are going on.

#### Journals (International)

1. " Side chain anchoring strategy for solid-phase synthesis of peptide acids with C-terminal cysteine". Balazs Hargittai, Jaya T. Varkey, Rong-quang Liu, Yongxin Han and George Barany, *Biopolymers (Peptide Science)*, 71, 652-666, (2003).
2. " Merrifield resin and newly developed 1,6-hexanediol diacrylate resin for solid phase peptide synthesis. A comparative study". Jaya T. Varkey and V N Rajasekharan Pillai *Journal of applied polymer science*, 71, 1933-39, (1999).

3. "Solid phase synthesis of hydrophobic peptides on 1,6-hexanediol diacrylate crosslinked polystyrene resin" Jaya T. Varkey and V N Rajasekharan Pillai *Journal of Peptide Science*, 5, 577-81, (1999).
4. "Synthesis of thioredoxin partial sequences on 1,6-hexanediol diacrylate (HDODA)- crosslinked polystyrene resin." Jaya T. Varkey and V N Rajasekharan Pillai, *Journal of peptide research*, 51, 49-54, (1998).
5. "Synthesis of two designed hairpin peptides on a newly developed 1, 6-hexanediol diacrylate cross linked polystyrene resin", Jaya T. Varkey, Satish Kumar Awasthi and V.N. Rajasekharan Pillai *Journal of Protein and Peptide letters*, 6, 209-214, (1999).
6. Solid-phase synthesis of consolidated ligands containing an intramolecular lactam bridge: Comparison of strategies and tactics." Jaya T. Varkey, Hong Ji, David Cowburn and George Barany, *Peptides-The wave of the future (Proceedings of the Second International and the 17<sup>th</sup> American Peptide Symposium)*, San Diego, CA, 222-223, (2001)
7. "Determination of alkali content & total fatty matter in cleansing agents", K. J. Betsy, Mary Jilu, Reshma Fathima and Jaya T. Varkey, *Asian Journal of Science and Applied Technology*, Vol. 2 No. 1, pp.8-12, 2013.
8. "Chemical Analysis of Caffeine Content in Tea and Coffee Samples" , S. Parvathy, Adlet Luiz and Jaya T. Varkey, *Asian Journal of Science and Applied Technology*, Vol. 3 No. 1, pp. 1- 4, 2014.
9. Analysis of different chemical dyes on fabrics based on their dyeing properties, Jaya T. Varkey, et.al , *International Journal of Development Research*, Vol. 4, 8, pp., 1779-1782, 2014.
10. On-resin Intramolecular Chemoselective Oxime Bond Formation to Cyclic peptides, Jaya T. Varkey, *Journal of Pharmaceutical and medicinal Chemistry*, Vol.1, 1, pp., 23-27, 2015.
11. Design and Development of Novel antibacterial nanofiber tea bags for clean drinking Water , Jaya T. Varkey, *International journal of scientific and engineering research* , vol. 7, No. 6, 699-705, 2016.
12. Peptide incorporated nanoparticles for imaging and drug delivery applications, Jaya T, Varkey, *Journal of Pharmaceutical and Medicinal chemistry*, vol. 2, No. 2, 151-154, 2016.
13. "Amino acid bases Schiff bases and its Zn (II) complexes" Anitta Antony, Fathima Fasna, Ajil P. A and Jaya T. Varkey, *Research and Reviews: Journal of Chemistry*, Vol. 5, 2, pp., 37-44, 2016.
14. Peptide Encapsulated Nanoparticles for Brain Drug Delivery, *Journal of Analytical and Pharmaceutical Research*, Jaya T. Varkey, vol. 3, issue 5, 1-3, 2016.
15. A comparative study of swelling capacity and surface morphology of different mol % 1, 6-hexanediol diacrylate crosslinked polystyrene for catalytic applications, Jaya T. Varkey, Anitta Antony and Ajil P. A., *International Journal of Applied Chemistry*, vol. 13, No. 2, 273-281, 2017.
16. Synthesis and Applications of Nano metallic particles anchored on a novel Polymeric Resin, *Oriental Journal of Chemistry*, Jaya T. Varkey, vol.33, 2, 1035-1040, 2017
17. Green chemical synthesis of copper nanoparticles -a comparative study with chemical reduction and electrolytic methods, Jaya T. Varkey, Ajil P. A and Anitta Antony, *Asian Journal of Chemistry*, Vol.29, No. 7, 1591-1594, 2017

18. Targeted drug delivery across blood-brain-barrier employing natural nanocarriers, Jaya T, Varkey, European Journal of Biomedical and Pharmaceutical Sciences, vol.4, issue 6, 319-323, 2017.
19. Surface Morphological Analysis of Differently Sulphonated Styrene -1, 6-Hexanediol Diacrylate Copolymer as Novel Cation Exchange Resin and as a Catalyst Support, Anitta Antony, Ajil P. A and Jaya T. Varkey, International Journal of ChemTech Research, vol. 10, 5, 189-196, 2017.
20. Synthesis, Characterization and Antimicrobial studies of Biodegradable polymers and their polymer metal complexes, Sicily Rilu Joseph, Reshma K.S, Anitta Antony, Jaya T. Varkey World journal of Pharmaceutical research, vol.6, No. 17, 1111-1125, 2017.
21. Synthesis of Salicylaldehyde Based Schiff Bases and their Metal Complexes in Aqueous media -Characterization and Antibacterial Study, Shamly. P, Mary Priya Nelson, Anitta Antony and Jaya T. Varkey, International Journal of recent scientific research, vol. 9, No. 5 (B), (2018), 26566-26570.
22. PS-DVB supported Schiff –Base Cobalt (II) as an efficient catalyst system for Knoevenagel reaction, Dona M.M., Rosmy Roy, Anitta Antony and Jaya T. Varkey, Asian Journal of Science and Technology, vol.9, No. 10, 2018, 8771-8774.
23. Synthesis and Characterization of polymer metal complexes of Cu (II) and Zn (II) with NNMBMA cross-linked polyacrylamide supported L-Aspartic acid and L-Lysine, Jaya T. Varkey, Anitta Antony and Ajil P. A, Bulletin of pure and applied sciences, Section C-Chemistry, Vol. 37 C, No.2, 67-75, Jul-Dec, 2018.
24. PS-HDODA supported Cobalt (II) - as a novel and efficient heterogeneous catalyst for methylene blue decomposition from synthetic waste water, Jaya T. Varkey, Anitta Antony and Ajil P. A., Research and reviews: Journal of Chemistry, vol 7, No. 2, 2018.
25. Silver Nanoparticles Stabilized in Polymeric Hydro gel- Its Synthesis, Characterisation and Catalytic Activity Study for Para- nitro phenol Reduction, Jaya T. Varkey, Anitta Antony and Ajil P. A, Asian Journal of Chemistry, vol. 30, No. 10, 1-5, 2018.
26. Investigation on the Removal of toxic Chromium Ion from waste water using Fe<sub>2</sub>O<sub>3</sub> nanoparticles, Jerin V.M., Remya R, Mariyam Thomas and Jaya T. Varkey, ScienceDirect, Materialstoday: proceedings, 9, 27-31, 2019.
27. 1,6-Hexanediol Diacrylate cross-linked Polystyrene- A novel catalyst support system- Its synthesis, swelling capacity studies and surface morphological analysis, Anitta Antony, Ajil P. A., and Jaya T. Varkey, ScienceDirect, Materialstoday: proceedings, 9, 105-110, 2019.

### Papers Presented

1. “Solid-phase synthesis of consolidated ligands containing an intramolecular lactam bridge: Comparison of strategies and tactics.” Jaya T. Varkey, Hong Ji, David Cowburn and George Barany., In Lebel, M., and Houghten, R.A. (Eds.) *Peptides-The wave of the future (Proceedings of the Second International and the 17<sup>th</sup> American Peptide Symposium)*, San Diego, CA, 222-223, (2001).
2. “Synthesis of two designed hairpin peptides on a newly developed 1,6-hexanediol diacrylate crosslinked polystyrene resin”, Jaya T. Varkey and V N Rajasekharan Pillai (Proceedings of the 9<sup>th</sup> Kerala Science Congress held at Thiruvananthapuram, January, 1997.)
3. “Solid phase synthesis of hydrophobic peptides on 1,6-hexanediol diacrylate

- Cross linked polystyrene resin” Jaya T. Varkey and V. N. Rajasekharan Pillai (Proceedings of the 8<sup>th</sup> Kerala Science Congress held at Kochi, January, 1996.)
4. “Synthesis of thioredoxin partial sequences on 1,6-hexanediol diacrylate (HDODA)- crosslinked polystyrene resin.” Jaya T. Varkey and V N Rajasekharan Pillai (Proceedings of the 82<sup>nd</sup> Indian Science congress held at Calcutta, January 1995). Won National Young Scientist Award constituted by the Indian Science Congress Association.
  5. “On-resin intramolecular chemoselective oxime bond formation to cyclic peptides” Jaya T. Varkey (UGC sponsored national on modern trends in organic chemistry), Baselius College, Kottayam, February, 2012.
  6. “Metal ion binding properties of Cu<sup>2+</sup> & Zn<sup>2+</sup> with NNMBA cross linked poly acryl amide supported l-aspartic acid and l-lysine” National conference on biopolymers & green composites(BPGC2015), (CIPET), Ajil P. A, Anitta Antony and Dr. Jaya T. Varkey, 9 and 10 October, 2015.
  7. “Synthesis and Characterization of polymer metal complexes of Cu (II) and Zn (II) with NNMBA cross-linked polyacrylamide supported L-Aspartic acid and L-Lysine”, 14<sup>th</sup> Prof. K.V Thomas Endowment National seminar 2015, Ajil P. A, Anitta Antony and Dr. Jaya T. Varkey, ‘Molecular approach to current Advances in Chemistry’(MCAC2015), 7 and 8, December 2015.
  8. “Metal ion complexation behaviour of 2 mol% NNMBA cross- linked polyacrylamide supported L-Aspartic acid and L-Lysine”, Ajil P. A, Anitta Antony and Dr. Jaya T. Varkey, International Conference on Advances in polymer Technology, APT 16, Cochin university of Science and Technology, 25-26, February, 2016.
  9. Antibacterial studies of zinc oxide nano particles stabilised in chitosan matrix, Anitta Antony, Ajil P. Aand Jaya T. Varkey, Prof. K.V. Thomas endowment International Symposium on new trends in applied chemistry (ntac -2017) –dept. of chemistry S.H college Thevara, February 2017.
  10. . “A comparative study of swelling capacity and surface morphology of differentmol% of 1, 6-hexanediol diacrylate crosslinked polystyrene”, Ajil P. A, Anitta Antony and Jaya T. Varkey, International seminar on “Advances in Photo responsive materials” (APRM-17), Maharaja’s College, Ernakulam, 14 &15 , November, 2017.
  11. Abstract titled “Catalytic activity studies of Metal nanoparticles supported on a novel functional organic polymer” by Jaya T. Varkey, Anitta Antony and Ajil P. A., has been accepted for oral presentation at the International Conference on Advances in Functional Materials, University of California, Los Angeles, USA during Aug 19-22, 2019.

### **Conferences / Workshops attended International**

1. Second International and the 17<sup>th</sup> American Peptide Symposium June 9-14, 2001, San Diego, California, U. S. A.
2. American Chemical Society Symposium, August 6-10, 2002, University of Minnesota, Minneapolis, U. S. A.
3. Albertian knowledge Summit: An International Conference on Multidisciplinary Research , Organized by St. Albert’s College, Ernakulam on 4-5<sup>th</sup> , January 2019.

### National/ State level

1. National workshop on frontier areas in Polymer chemistry especially smart polymers (smartpol-2004), Maharaja's college, Ernakulam.
2. 82<sup>nd</sup> Indian Science congress, January 3-8, 1995, Jadavpur University, Calcutta.
3. 8<sup>th</sup> Kerala Science Congress, January 27-29, 1996, Cochin Univeristy of Science and Technology, Kochi.
5. 9<sup>th</sup> Kerala Science Congress, January, 27-29, 1997, Thiruvananthapuram.
6. National workshop on spectroscopy, September 2-3, 2003, Department of Chemistry, St. Paul's College, Kalamassery.
7. National workshop on frontier areas in Polymer chemistry especially smart polymers (smartpol-2004), Maharaja's college, Ernakulam
8. "The media dominated culture and new values- A Christian response" organized by St. Teresa's college, Ernakulam in collaboration with Xavier Board of Higher Education, Kerala North Region, 17-12-2005.
9. State level seminar on Women's drudgery and ill health- A human rights perspective- 9-10 Nov. 2006, Dept. of family and community science, St.Teresa's college, Ernakulam.
10. Prof. K. V. Thomas Endowment National seminar on "Modern Trends in Mass Spectrometry"
11. State level seminar on Environmental Biotechnology", Dept. of Chemistry, St. Teresa's college, Ernakulam on 23-1-2007.
12. 3-day workshop on "Entrepreneurship development programme on soy" Dec. 2007, organized Dept. of family and community science, St.Teresa's college, Ernakulam.
13. Three day workshop on instrumentation and maintenance, Dept. of Physics, St. Teresa's college, Ernakulam.
14. National seminar on analysis and on contributions of women mathematicians, on 31-10-2008, Dept. of Mathematics, St. Teresa's College, Ernakulam and Kerala mathematical association.
15. National seminar on current advances in chemical science, S. H. College, Thevara, November 26, 27, 2008.
16. One day orientation on credit and semester system, organized by M. G. University, at Maharaja's college, Ernakulam on 7-8-2009.
17. Industry Academia partnership seminar on soft skill development, by Genpact, June 1-10, 2009.
18. One day seminar on "Quality assurance in consumer products" organized by the consumer club of St. Teresa's college in association with Federation of consumer organizations, Kerala, on 16-9-2009.
19. Training programme on computer maintenance, on 12<sup>th</sup> and 23<sup>rd</sup>, March, 2009, St. Teresa's College, Ernakulam.
20. National seminar on modern trends in chemistry, S.H. College, Thevara, 5-6, march, 2010.
21. Ist Kerala women's science congress, St.Teresa's college, Ernakulam, 10-12 August, 2010.
22. Orientation programme for university and college teachers on student welfare activities, by Dept. of student services, M. G. University at St. Teresa's college, Ernakulam, on 10-11-2010.
23. Three day training programme on "General Informatics" organized by St.Teresa's college and Kerala higher education council, 20-22<sup>nd</sup>, Dec. 2010.

24. National workshop on Current trends in Molecular Modeling by Dept. of Chemistry, S. H. College, Thevara.
25. National science day celebrations and Sr. Bertille endowment seminar on “chemistry for Today”, Dept. of Chemistry, St. Teresa’s college, Ernakulam on 22-2-11.
26. Inaguration of International year of Chemistry celebrations, organized by Dept. of Chemistry, St. Teresa’s college, Ernakulam on 11-3-11.
27. Two day workshop for college teachers on review of curriculam organized by UG board of studies, M. G. University on 20-21, June 2011.
28. National seminar on challenges in Nanoscience and Technology, July 28-29, 2011, Dept. of Chemistry, St. Teresa’s College, Ernakulam.
29. International year of Chemistry- Lecture series, organized by dept. of Chemistry, St.Teresa’s College, Ernakulam on 27<sup>th</sup> and 30<sup>th</sup> September.
30. National Seminar on best practices in research and consultancy- opportunities and challenges, organized by IQAC, St. Teresa’s College, Ernakulam, on 20<sup>th</sup> October, 2011.
31. Refresher course in Nano Science, organized by Academic staff college, University of Calicut, Nov. 10-30, 2011.
32. Prof. K.V. Thomas endowment National seminar on recent trends and the sequels in Chemistry, organized by dept. of Chemistry, S. H. College, Thevara on 7-8, December, 2011.
33. International year of Chemistry- Lecture series, organized by dept. of Chemistry, St.Teresa’s College, Ernakulam on 13-12-11.
34. International conference on Nutritional medicine, Health, and wellness organized by Department of Zoology, St. Teresa’s College, Ernakulam in collaboration with Dr. Rath research institute, USA on 7-8 June, 2012.
35. Seminar on Intellectual property rights – concepts, policies and guidelines, organized by Department of Home Science, St. Teresa’s College, Ernakulam on 11<sup>th</sup> July 2012.
36. Workshop on Computational Chemistry, Organized by higher education council and Department of Chemistry, Maharaja’s College, Ernakulam, on 1-2, November, 2012.
37. National seminar on Research Methodology, Organized by TRACC, St. Teresa’s College, Ernakulam, on 7-12-12.
38. Prof. K. V Thomas endowment National Seminar on “Computational Chemistry” . Organized by Department of Chemistry, S. H. College, Thevara, 7-8, December, 2012.
39. National seminar on recent trends in research, organized by IQAC, St. Teresa’s College, on 17-12-12.
40. International seminar on stem cells, organized by Department of Botany, St. Teresa’s College, Ernakulam on 15-1-13.
41. National workshop on equipping new era practioners – teaching, sponsored by NAAC and organized by St. Teresa’s College, on 20-6-13 to 21-06-13.
42. National level orientation programme in Academic Research, Organized by TRACC, St. Teresa’s College, Ernakulam on 24-10-13.
43. UGC sponsored National seminar on “Science Sans Borders” by Department of Chemistry, Maharaja’s College, Ernakulam on 7-11-13 to 8-11-13.
44. Seminar on Research Methodology, organized by TRACC, St. Teresa’s college, on 10-12-13.
45. National seminar on “Advances in Nanomaterials and polymers” , Bharath Matha College, 11-12<sup>th</sup> March. 2014.

46. International conference on photonics and solar water splitting, organized by department of physics, St. Teresa's College (Autonomous) , March, 12<sup>th</sup> and 13<sup>th</sup>, 2015.
47. National workshop on teaching physics using Python, organized by department of physics, St. Teresa's College (Autonomous), 19 August, 2015.
48. UGC-CPE sponsored National conference on Modern trends in Research, Organized by TRACC, on 14 October 2015.
49. National seminar on Recent Advances in Nanoscience and Nanotechnology, organized by department of physics, St. Teresa's College (Autonomous) and supported by Dept. of higher education, Govt. of Kerala, on 24 February, 2016.
50. International seminar on Material Chemistry, organized by Department of Chemistry, St. Albert's College, Ernakulam, on 26 February, 2016.
51. UGC sponsored National workshop on Accreditation and academic audit, organized by IQAC and auditing cell, St. Teresa's College (Autonomous), Ernakulam, on 11 June , 2016.
52. UGC sponsored workshop on Fourth Cycle Accreditation in Autonomous Colleges, Organized by IQAC and the audit cell, St. Teresa's College (Autonomous), Ernakulam,. On 22<sup>nd</sup> June 2016.
53. UGC sponsored National seminar on Advances in Polymer science and Technology, by Post graduate department of Chemistry, St. Teresa's College (Autonomous), Ernakulam, 24-25, January, 2017.
54. UGC sponsored National workshop on capacity building in academic writing and publishing, by Golden Jubilee Memorial library, St. Teresa's College, Ernakulam on 15<sup>th</sup> March, 2017.
55. National workshop on Microscale Techniques in experimental organic and physical chemistry on 2-3, November, 2017 by department of Chemistry, St, Teresa's college, Ernakulam.
55. Prof. R. H. Sahasrabudhey birth centenary Sympopsium (CYHOC 2017) organized by CSIR-NIIST, at Hotel Residency Tower, Thiruvanthapuram on 15/12/2017
56. Prof. K. V. Thomas Endowment National workshop on Sustainable energy storage and conversion, at S. H. college, Thevara, on 15 & 16, January, 2018.
57. National workshop on digital learning web cloud app & E-content development, organized by IQAC, St. Teresa's College, on 3/11/18.
58. Albertian International knowledge summit 2018, International conference on multidisciplinary research, 8-17 January, 2018
59. Seminar on food adulteration – concerns and Challenges, organized by Department of Home science and B. Voc., Food processing Technology held on 23/01/2018.
60. Women achievers in science, by post graduate and research Department of Chemistry, St. Teresa's College, on 26/2/19

#### **Resource person in seminars/subject Expert**

1. Winter school on “Recent advances in bioactive compounds from marine organisms and development of high value products for health management” organized by ICAR-Central Marine Fisheries Research Institute, Kochi, February, 2018.
2. Subject Expert for the Pre-Ph.D. presentation of Maria Linsha P. L. on 8/3/19 and Christy Kunjachan on 12/4/19 at School of Chemical Sciences, Mahatma Gandhi, University.



### **Seminars organized**

1. National science day celebrations and Sr. Bertille memorial endowment seminar on “Chemistry for Today” on 22-2-11, Dept. of Chemistry, St. Teresa’s college, Ernakulam. Sponsored by STEC and Sr. Bertille memorial endowment fund.
2. Co-ordinator of Teresian Eco-friendly recycling and reusing activities (TERRA), faculty enrichment programme, organized by department of Chemistry, on 7/11/18
3. Organizing Committee member of Total Quality Management programme by Department of Chemistry, St. Teresa’s College, on 8/11/18
4. Organizing Committee member of First aid and Safety techniques, by Department of Chemistry, St. Teresa’s College, on 9/11/18
5. Organizing Committee member of National Conference on Intellectual property rights and Innovative research by TRACC, St. Teresa’s College, on 23/11/18
6. Coordinator of Erudite Lecture by Prof. Toshiaki Enoki, Tokyo Institute of Technology, Japan, on “Molecular Science of Nanographene” December 14, 2018 at St. Teresa’s College.
7. Coordinator of inauguration of Chemistry research centre, by Prof . V. N. Rajashekharan Pillai, on December 14, 2018 at St. Teresa’s College.

### **Projects sanctioned/submitted**

1. “Analysis of different chemical dyes on Fabrics based on their dyeing properties”, student project sanctioned by KSCSTE, Thiruvananthapuram, 15/05/2012, Rs. 10,000/- (completed)
2. “Analysis of Caffeine content in tea and coffee samples”, student project sanctioned by KSCSTE, Thiruvananthapuram, 15/10/2013, Rs. 13,000/- (completed).
3. “Metal ion complexation characteristics of 2 mole % NNMBA-crosslinkedpolyacrylamide supported aspartic acid” student project sanctioned by KSCSTE, Thiruvananthapuram, 18/12/2015, Rs. 6000/- (completed)
4. “Synthesis, characterization and catalytic activity studies of novel polymer bound metal complexes” minor project sanctioned by UGC, 25/04/2016, Rs. 4.4 lakhs
5. “Synthesis, Characterization and Antimicrobial studies of Biodegradable polymers and their polymer metal complexes” student project received from KSCSTE, Thiruvananthapuram, 16/02/2017, Rs. 7000/- (ongoing)
6. UGC research award , project by UGC, Rs. 3 lakhs, 18/4/2016, 2016-18.

### **Orientation/Refresher Courses /Training programmes**

1. Orientation Course, Academic Staff College, University of Calicut, 2008.
2. Industry Academia partnership seminar on soft skill development, by Genpact, June 1-10, 2009, St. Albert’s College, Ernakulam
3. Three day training programme on “General Informatics” organized by St.Teresa’s college and Kerala higher education council, 20-22<sup>nd</sup>, Dec. 2010.
4. Refresher course in Nanoscience, organized by Academic staff college, Calicut, November 10-30, 2011.

5. Refresher course in Environmental Sciences, organized by Academic staff college, Thiruvananthapuram, 1-22, October, 2012.
6. Participated in the UGC sponsored National workshop on Macro to micro level- A workshop on experimental chemistry, by department of Chemistry, Baselius College, Kottayam, from 28-30, September, 2016
7. Participated in the National workshop on Nanotechnology, by KKTU Govt. College, Pullut, on 21-23, November, 2016
8. Short run course for professional development on evaluation in higher education, Teacher learning centre, Department of Education, University of Calicut, August 21 -27, 2017
9. STEM teacher training workshop on Research based Pedagogical Tools, from 11<sup>th</sup> to 14<sup>th</sup> October, 2017 S. H. College. Thevara, by British council and IISER Pune.
10. National workshop on Microscale techniques in experimental Organic and Physical Chemistry, 2 & 3, November, 2017.
11. National Workshop on Digital learning & curriculum transaction Organized by CCRPED under PMMMNTT, School of Education, Central University of Kerala, on 15-17<sup>th</sup> February, 2018.

#### **Editorial board member**

1. Journal of multifunctional polymers, published by American Scientific Publishers, USA.
2. Associate editor, International Journal of Pharmaceutical Chemistry and analysis, ISSN 2394-2789.
3. National Editorial Advisory Board member, Journal of Pharmaceutical and Medicinal chemistry (JPMC), Red Flower Publication Pvt. Ltd., India, ISSN 2395-6615
4. National Editorial Advisory Board member, Indian Journal of Cancer education and Research, Red Flower publications, India ISSN, 2321-9815.
5. Advisory board member, International Journal of Medical Microbiology and Tropical Diseases, Innovative publication, India, ISSN No. 2455-6807 (Online)

#### **Research Guideship**

1. Research Guide in Chemistry, M. G. University, Kottayam, Kerala.
2. Part Time Research Guide, Bharathiar University, Coimbatore, Guide ID No. CHE GU 3529.

**No. Research Students Registered** - Full time -1, Part time - 4

#### **Awards/ Fellowships**

1. Indian National Science Academy (INSA) visiting scientist award 2018 to work in the Department of inorganic and Physical Chemistry, IISc, Bangalore with Prof. Balaji Jagirdar for 3 months.
2. UGC Research Award, 2016-18, Nominated as Rank One in Chemistry in India.

3. Certificate of appreciation, by St. Teresa's College, for receiving UGC research award, 20<sup>th</sup> December, 2016.
4. Sr. Marie Cihil prize for best research paper in the college in 2003 and 2016.
5. Research Associate, University Grants Commission, New Delhi, India, (1999)
6. Postdoctoral research fellowship, Department of Chemistry, University of Minnesota, Minneapolis, USA (1999-2003)
7. National Young Scientist Award in chemistry at the 82<sup>nd</sup> Indian Science Congress held at Calcutta, India, (1995).
8. Junior research fellowship (Mahatma Gandhi University, Kottayam, (1993-95)
9. Senior research fellowship (Department of science and technology, Government of Kerala, (1995)
10. Senior research fellowship (Council of scientific and industrial research, Govt. of India, New Delhi, (1995-97)

### **Consultancy services**

1. P.V. Ayurveda Pharma, Kollam
2. Tesley Health care, Calicut

### **Start-up Programme**

1. Student start-up programme by Sicily Rilu Joseph and Anitta Antony under the guidance of Dr. Jaya T. Varkey was selected to the second round by Business Innovation & incubation centre, M. G. University in 2017.

### **Scholarships**

1. National Merit Scholarship for SSLC
2. University Merit Scholarship for B. Sc.

### **Membership in professional organizations**

1. American Chemical Society

### **Skills Instrumentation**

Peptide Synthesizer (manual and automated)  
HPLC, FPLC  
IR/UV, NMR, CD  
Amino acid analyzer

### **Computer Awareness**

MS-Office  
Chemdraw, ISIS Draw, Beilstein  
SciFinder Scholar, Web of Science

## References

1. Dr. George Barany  
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