

Dr. MANOJ, N.

*Professor in Organic Chemistry
Department of Applied Chemistry
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ACADEMIC RECORD

- **Graduation (B.Sc.): Chemistry,**
1991, Mahatma Gandhi University, Kottayam, Kerala, India
- **M.Sc. degree:**
1993, M. Sc. in Organic Chemistry.
Title of the M. Sc. Thesis: A Study of 2,4,6-triphenylpyrylium cation sensitized photo-oxygenation reactions of a few furan derivatives
Supervisor: Dr. K. R. Gopoidas, Scientist, National Institute for Interdisciplinary Science & Technology (NIIST) (Formerly Regional Research Laboratory) (CSIR) Industrial Estate, Trivandrum - 695019
- **Ph.D. degree: Chemistry** (October 1999) Mahatma Gandhi University, Kottayam, Kerala, India
"Photoinduced Electron Transfer: Design and Study of New Sensitizers to Control Back Electron Transfer"
Ph.D. advisor: Dr. K. R. Gopoidas, Scientist, National Institute for Interdisciplinary Science & Technology (NIIST) (Formerly Regional Research Laboratory) (CSIR) Industrial Estate, Trivandrum - 695019

SCIENTIFIC OR PROFESSIONAL POSITIONS

- **Post-Doctoral Research Fellow: May 1999 – February 2000**
Post-Doctoral Research Fellow with Extended Senior Research Fellowship (CSIR) at the Photochemistry Research Unit, National Institute for Interdisciplinary Science & Technology (NIIST)
- **Post – Doctoral Research Associate: March 2000 – December 2001**
Post - doctoral research associate in the research group of Prof. Hermenegildo Garcia at the Departamento de Quimica, Universidad Politecnica de Valencia, Valencia, Spain.
- **Post – Doctoral Research Associate: January 2002 – September 2006**
Post - doctoral research associate in the research group of Prof. Dr. André M. Braun and Prof. Dr. Esther Oliveros at the Chair of Environmental Analysis and Techniques (Lehrstuhl für Umweltmesstechnik), Engler-Bunte Institute, University of Karlsruhe, Germany.
- **Reader in Organic Chemistry : October 2006- October 2009**
- **Associate Professor in Organic Chemistry : October 2009-January 2016**
- **Head of the Department : May 2013 – May, 2016**
- **Professor in Organic Chemistry : February 2016 to date** @ Department of Applied Chemistry Cochin University of Science and Technology (CUSAT), Kochi, Pin – 682022, Kerala, India.

THESIS SUPERVISED

-Ph. D.:

Awarded – 4

Ongoing – 8

-M.Phil.:

Awarded – 12

Ongoing – 1

PROJECTS (COMPLETED)

1. Synthesis and Study of New Organocatalysts for Asymmetric Michael Addition Reactions, UGC, ₹1,303,600/- (2015-2018) – Principal Investigator
2. UGC-SAP Infrastructure and Research Grant, ₹7,100,000 (2010 – 2015) – Deputy Coordinator.

PROJECTS (ONGOING)

1. Novel Heterocyclic Hole Transporting Materials (HTM) for Perovskite Solar Cell Applications, GITA-DST (Indo-Taiwan) /Ongoing , ₹2,287,500/- (2020-2023) – Principal Investigator.
2. Exploring the Human Gut Microbe and Metabolites in Health and Parkinson's Disease- A Window to the Gut Microbiota-Brain Axis Alterations in Parkinson's Disease, ICMR/Ongoing, ₹1,200,000/- (2019-2022) – Co- Principal Investigator.
3. Development of Highly Efficient Thin Film Solar Cells With Organic and Inorganic Materials, MHRD-RUSA Approved/Fund not released, ₹2,785,880/- (October 2019) – Co- Principal Investigator.

LIST OF PUBLICATIONS

1. Parvathy, O. C.; Aswathy, A.; James, K.; Kala, K.; Ragi, T. M.; Manoj N. A Molecular chameleon: Fluorometric to Pb^{2+} , Fluorescent Ratiometric to Hg^{2+} and Colorimetric to Ag^+ ions, *Journal of Photochemistry and Photobiology A: Chemistry* **2020** (accepted)
2. Seenaa, S.; Aswathy, A.; Manoj, N. Synthesis, Characterization and Singlet Oxygen Generation Studies of Surface-Tethered Triazatriangulenium Cations. *Materials Today Proceedings*, **2020**, 33 (2), 1238 - 1245 <https://doi.org/10.1016/j.matpr.2020.03.487>
3. Vineetha, P. K.; Aswathy, A.; Kala, K.; James, K.; Parvathy, O. C.; Manoj, N. Comparison of DSSC efficiencies in a series of D- π -A systems having heterocyclic based anchoring group, *Materials Today Proceedings*, **2020**, 33 (2), 1257 - 1262 <https://doi.org/10.1016/j.matpr.2020.03.494>

4. Babu, B.; Janardhanan, J.; Bhaskaran, R.P.; Praveen, V.K.; Manoj, N. *Asian Journal of Organic Chemistry*, **2020**, 9,1410-1431. 10.1002/ajoc.202000300.
5. Rani Mathew, Anju Mohan, Raina Francis, Manoj, N. Experimental investigations on the effect of non-polar and polar aprotic solvents on the reaction between furan-2-methanamine and dimethyl acetylenedicarboxylate, *Chemical Data Collections*, **2020**, 28, 100397.
6. Vineetha, P.K.; Aswathy, A.; Shiju, K.; Chandrasekharan, K.; Manoj, N. Structure–property correlations of the nonlinear optical properties of a few bipodal D– π –A molecules – an experimental and theoretical approach, *New J. Chem.*, **2020**, 44, 6142-6150.
7. Janardhanan, J.; James, K.; Puthuvakkal, A.; Bhaskaran, P.; Suresh, C.H.; Praveen, V.K.; Manoj, N.; Babu, B. Synthesis of hybrid polycycles containing fused hydroxy benzofuran and 1H-indazoles via a domino cyclization reaction, *New J. Chem.*, **2019**, 43, 10166 – 10175.
8. Janardhanan, J.; Mishra, R.; Das, G.; Sini, S.; Jayamurthy, P.; Suresh, C.; Praveen, V.; Manoj, N.; Babu, B. Functionalizable 1H-Indazoles by Palladium Catalyzed Aza-Nenitzescu Reaction: Pharmacophores to Donor-Acceptor Type Multi-Luminescent Fluorophores *Asian Journal of Organic Chemistry* **2018**, 7, 2094-2104.
9. Kala, K.; Vineetha, P. K., Manoj, N. A Simple Cost Effective Carbazole-Thiobarbituric acid Conjugate as Ratiometric Fluorescent Probe for Detection of Mercury (II) ions in Aqueous Medium. *New J. Chem.*, **2017**, 41, 5176-5181.
10. Suma, C. S.; Maheshkumar M. V.; Manoj, N. "Oxa-Bridged Donor-Acceptor Systems Containing Triazine Core for Dye Sensitized Solar Cell Application" *The Chemist*, **2017**, 90,23-29.
11. Vineetha, P. K.; Ajina, C.; Manoj, N. Investigations on the optical limiting properties of a pyran dye in different solvents., *Proceedings of the International Conference on Materials for the Millennium*, **2016**, 1, 227-229.
12. Kiran, J.; Parvathy, O. C.; Jith, C. J.; Manoj, N. Synthesis and study of Perylenebisimide based fluoroionophores, *Proceedings of the International Conference on Materials for the Millennium*, **2016**, 1, 285-288.
13. Seenaa, S.; Manoj, N. Determination of singlet oxygen quantum yield of a water soluble triangulenium salt. *Proceedings of the International Conference on Materials for the Millennium*, **2016**, 1, 289-292.
14. Aswathy, A; Vineetha, P. K.; Kala, K.; Manoj, N. Pyran-pyrimidine conjugate for heavy metal ion detection., . *Proceedings of the International Conference on Materials for the Millennium*, **2016**, 2, 401-403.
15. Kala, K.; Parvathy, O. C.; Manoj, N. Colorimetric detection of Hg (II) ions using a simple barbituric acid based sensor, . *Proceedings of the International Conference on Materials for the Millennium*, **2016**, 2, 404-406.
16. Suma, C. S., Manoj, N. Thiobarbituric acid dyes for dye sensitized solar cell application, *Proceedings of the International Conference on Materials for the Millennium*, **2016**, 2, 684-686.
17. Kala, K.; Manoj, N. A Carbazole Based “Turn on” Fluorescent Sensor for Selective Detection of Hg²⁺ in an Aqueous Medium. *RSC Advances*, **2016**, 6, 22615-22619. DOI: 10.1039/C5RA27530J.
18. Manju, T.; Manoj, N.; Gejo, J. L.; Braun, A. M.; Oliveros, E., Micellar control of the photooxidation pathways of 10-methyl phenothiazine: electron versus energy transfer mechanisms, *Photochemical & Photobiological Sciences*, **2014**, 13, 1744-1755.

19. Manju, T.; Manoj, N.; Braun, A. M.; Oliveros, E., Self sensitized photooxidation of N-methyl phenothiazine: acidity control of the competition between electron and energy transfer mechanisms. *Photochemical & Photobiological Sciences* **2012**, *11* (11), 1744-1755.
20. Parui, P. P.; Manoj, N.; Banerjee, S.; Chowdhury, M., Specific spin-correlation dependent magnetic field effects on radical pairs photo-generated by electron transfer from biphenyl to phenyl-pyrylium salts in micelle. *Chemical Physics Letters* **2009**, *479* (1-3), 70-75.
21. Cantau, C.; Pigot, T.; Manoj, N.; Oliveros, E.; Lacombe, S., Singlet oxygen in microporous silica xerogel: Quantum yield and oxidation at the gas-solid interface. *Chemphyschem* **2007**, *8* (16), 2344-2353.
22. Manoj, N.; Ajayakumar, G.; Gopidas, K. R.; Suresh, C. H., Structure absorption spectra correlation in a series of 2,6-dimethyl-4-arylpyrylium salts. *Journal of Physical Chemistry A* **2006**, *110* (39), 11338-11345.
23. Gejo, J. L.; Manoj, N.; Sumalekshmy, S.; Glieman, H.; Schimmel, T.; Woerner, M.; Braun, A. M., Vacuum-ultraviolet photochemically initiated modification of polystyrene surfaces: morphological changes and mechanistic investigations. *Photochemical & Photobiological Sciences* **2006**, *5* (10), 948-954.
24. Alvaro, M.; Carbonell, E.; Garcia, H.; Lamaza, C.; Pillai, M. N., Ship-in-a-bottle synthesis of 2,4,6-triphenylthiapyrylium cations encapsulated in zeolites Y and beta: a novel robust photocatalyst. *Photochemical & Photobiological Sciences* **2004**, *3* (2), 189-193.
25. Parui, P. P.; Manoj, N.; Nath, D. N.; Chowdhury, M., Comparative studies of magnetic field effect on radical pairs photogenerated by electron transfer from biphenyl to derivatives of phenyl pyrylium salt and to corresponding thio salts. *Journal of Physical Chemistry A* **2004**, *108* (2), 275-280.
26. Alvaro, M.; Carbonell, E.; Domenech, A.; Fornes, V.; Garcia, H.; Narayana, M., Ship-in-a-bottle synthesis of a large guest occupying two Y zeolite neighbour supercages: Characterisation and photocatalytic activity of the encapsulated bipyrylium ion. *Chemphyschem* **2003**, *4* (5), 483-487.
27. Casades, I.; Alvaro, M.; Garcia, H.; Pillai, M. N., Photochemistry of anils in NaY zeolite. *European Journal of Organic Chemistry* **2002**, (13), 2074-2079.
28. Casades, I.; Alvaro, M.; Garcia, H.; Pillai, M. N., Modified mesoporous MCM-41 as hosts for photochromic spirobenzopyrans. *Photochemical & Photobiological Sciences* **2002**, *1* (3), 219-223.
29. Alvaro, M.; Ferrer, B.; Garcia, H.; Narayana, M., Screening of an ionic liquid as medium for photochemical reactions. *Chemical Physics Letters* **2002**, *362* (5-6), 435-440.
30. Sanjuan, A.; Pillai, M. N.; Alvaro, M.; Garcia, H., Topological quenching of 2,4,6-triphenylpyrylium tetrafluoroborate in anionic micelles. *Chemical Physics Letters* **2001**, *341* (1-2), 153-160.
31. Manoj, N.; Gopidas, K. R., Photophysical and electron-transfer properties of a few 2,6-dimethyl-4-arylpyrylium derivatives. *Journal of Photochemistry and Photobiology a-Chemistry* **1999**, *127* (1-3), 31-37.
32. Manoj, N.; Gopidas, K. R., Inclusion complexation of a few pyrylium salts by beta-cyclodextrin studied by fluorescence, NMR and laser flash photolysis. *Physical Chemistry Chemical Physics* **1999**, *1* (11), 2743-2748.
33. Manoj, N.; Gopidas, K. R., Structure-photophysics correlation in a series of 2,6-dimethyl-4-arylpyrylium derivatives. *Chemical Physics Letters* **1997**, *267* (5-6), 567-572.
34. Manoj, N.; Ajit Kumar, R.; Gopidas, K. R., Photophysical and electron transfer studies of a few 2,6-dimethyl-4-(alkylphenyl)pyrylium and thiopyrylium derivatives. *Journal of Photochemistry and Photobiology A: Chemistry* **1997**, *109* (2), 109-118.

35. Ilankumaran, P.; Manoj, N.; Chandrasekaran, S., Prop-2-ynyl as a protective group for carboxylic acids: a mild method for the highly selective deprotection of prop-2-ynyl esters using tetrathiomolybdate. *Chemical Communications* **1996**, 1957-1958
36. Manoj, N.; Gopidas, K. R., Triphenylpyrylium-salt-sensitized electron transfer oxygenation of furan derivatives. Product isolation, fluorescence quenching and laser flash photolysis studies. *Journal of Photochemistry and Photobiology A: Chemistry* **1995**, 85 (1-2), 53-61.

INTERNATIONAL/NATIONAL CONFERENCES

1. Photoinduced Electron Transfer Quenching of a Few Pyrylium and Thiopyrylium Derivatives by Aromatic Hydrocarbon Donors. **N. Manoj**, R. Ajith Kumar and K. R. Gopidas, 11th International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-11) Indian Institute of Science, Bangalore, India (July 28 - August 05, 1996) - Poster
2. Triangulenium cations: New Sensitizers for Singlet Oxygen Generation. **Manoj Narayana Pillai**, Esther Oliveros, André M. Braun. and Karickal R. Gopidas. XX IUPAC Symposium on Photochemistry, Granada, Spain (July 17 – 22, 2004)- Poster
3. 10-Methylphenothiazine: Solvent Effects on Singlet Oxygen Sensitization and Quenching, Manju Thankamoni Amma, Jochen Sturm, **Manoj Narayana Pillai**, André M. Braun and Esther Oliveros. XX IUPAC Symposium on Photochemistry, Granada, Spain (July 17 – 22, 2004)- Poster
4. Lipophilic triangulenium cations as sensitizers for singlet oxygen generation. **Manoj Narayana Pillai**, Esther Oliveros, André M. Braun. and Karickal R. Gopidas. Association of German Chemists - specialist group on Photochemistry: 19th Conference with emphasis on New spectroscopy developments in Photochemistry., Jena, Germany (March 29-31, 2005) - Poster
5. Topological Quenching of 2,4,6-Triphenylpyrylium tetrafluoroborate in Anionic Micelles. Ana Sanjuan, **Manoj Narayana Pillai**, Mercedes Alvaro, Hermenegildo Garcia. 17th International Congress on Radical Ions: Penescola, Spain. (June 25 - June 29, 2000) – Oral Contribution
6. Topological Quenching of the Fluorescence of 2,4,6-Triphenylpyrylium Cation in Anionic Micelles. Ana Sanjuan, Pilar Formentin, **Manoj Narayana Pillai**, Mercedes Alvaro, Hermenegildo Garcia. COFOT – 5, 5th National Conference of Spanish Photochemistry Group (RSEQ): Torremolinos, Malaga, Spain. (April 01 - 04, 2001) - Oral Contribution
7. Singlet Oxygen Sensitizers in Liposomes, **Manoj Narayana Pillai**, Esther Oliveros and André M. Braun. (34th Karlsruhe – Nancy Meeting, Interfaculty meeting between Universität

Karlsruhe, Germany and ENSIC Nancey, France: Vittel, Nancy, France (June 12-14, 2003) – Invited Talk

8. Triangulenium cations: New sensitizers for singlet oxygen generation. **Manoj Narayana Pillai**, Gabriela Petrocelli, Sumalekshmy Sarojini Amma, Esther Oliveros and André M. Braun. Minisymposium on Photochemistry, optical spectroscopy and sensors. Haus Bergkranz, Riezlern, Kleinwalsterstal, Austria. (March 29-31) 2005 – Invited Talk
9. International conference on materials for the millennium MATCON 2007, Kochi, 2007 (March 1-3) Member, Organizing Committee.
10. Novel Michael type reaction of 1-benzyl-2-methyl-1H-benzo [D] imidazole and 1-benzyl-1H-benzo [D] [1,2,3] triazole with DMAD in methanol. Sindhu P., Soorya V. C., Peruparampil A. Unnikrishnan and Narayanapillai Manoj. International conference on materials for the millennium MATCON 2007, Kochi, (March 1-3, 2007) – Poster
11. National Conference on Current Trends in Chemistry CTriC2008, Kochi, 2008, Member Organizing Committee
12. Photolytic oxidation of 9-aminomethylantracene to anthraquinone. Jomon P. Jacob, SreedharanPrathapan, Perupparampil A. Unnikrishnan and N. Manoj International conference on materials for the millennium MATCON 2010, Kochi, (January 11-13, 2010) – Poster
13. Triarylmethane dye sensitized photooxidation of organic sulphides Manjula Krishnan, Pravitha N. P, Seena Sebastian and N. Manoj International conference on materials for the millennium MATCON 2010, Kochi, (January 11-13, 2010) – Poster
14. National Conference on Current Trends in Chemistry CTriC2011, Kochi, (March 4-5, 2011) 2011, Convener, Organizing Committee
15. Studies on the solvent dependence in the reaction of 9-(N,N-dimethylaminomethyl) anthracene with DBA. Jomon P. Jacob, Rekha R. Mallia, P. A. Unnikrishnan, N. Manoj and S. Prathapan National Conference on Current Trends in Chemistry CTric 2011, Kochi, (March 4-5, 2011) – Poster
16. Synthesis of a few water soluble triazatriangulenium salts. Seena Sebastian, N. P. Pravitha and N. Manoj, National ConferSynthesis and optical properties of 3-diethanolamino-5-butyl-1,9-dimethoxy-10-(2,6-dimethoxyphenyl)acridiniumtetrafluoroborate. Cisy Abraham, Pravitha N. P, Seena Sebastian and N. Manoj, National Conference on Current Trends in Chemistry CTric 2012, Kochi, (January 20-21, 2012) – Poster
17. Synthesis of a few noval triazatriangulenium salts. Seena Sebastian, Senju Devassikutty and N. Manoj, National Conference on Current Trends in Chemistry CTric 2012, Kochi, (January 20-21, 2012) – Poster
18. Ship-in-a-bottle synthesis of 2,6-diphenyl-4-pyridile pyrliumcationsencapsulated in zeolites Y and beta. Suma C. S., Manoj, N. National Conference on Current Trends in Chemistry CTric 2012, Kochi, (January 20-21, 2012) – Poster
19. Reaction of (Anthracene-9-yl) Methylamines with Ceric Ammonium Nitrate. J. P. Jacob, M. L. Ligi, P. A. Unnikrishnan, N. Manoj and S. Prathapan, National Conference on Current Trends in Chemistry CTric 2012, Kochi, (January 20-21, 2012) – Poster

20. Design and development of Cyanuric Chloride based Organic catalyst for Asymmetric Catalysis. S. Varun, K. Kala and N. Manoj National Conference on Current Trends in Chemistry CTric 2013, Kochi, (March 22-23, 2013) – Poster
21. Synthesis of 4-N-(4-aminocyclohexyl)-8,12-di-N-octyl-4,8,12-triazatriangulenium tetrafluoroborate ion. Cisy Abraham, Pravitha, N. P., Senju D., Vineetha, P. K., Manoj. N. National Conference on Current Trends in Chemistry CTric 2013, Kochi, (March 22-23, 2013) – Poster
22. Photoinduced electron transfer reaction of (anthracen-9-yl)methylmethyl thioether. G. Reshma, J. P. Jacob, P. A. Unnikrishnan, N. Manoj and S. Prathapan National Conference on Current Trends in Chemistry CTric 2013, Kochi, (March 22-23, 2013) – Poster
23. National Conference on Current Trends in Chemistry CTric 2014, Kochi, (January 17-18, 2014), Chairman, Organizing Committee.
24. Synthesis of N-(4-N,N-bis(2-hydroxyethyl)phenyl)-2,4,6-triphenylpyridinium tetrafluoroborate ion. Cisy Abraham, Manoj, N. National Conference on Current Trends in Chemistry CTric 2014, Kochi, (January 17-18, 2014) – Poster
25. Synthesis and characterization of triazine based donor acceptor system. K. Kala, O. C. Parvathy and N. Manoj, National Conference on Current Trends in Chemistry CTric 2014, Kochi, (January 17-18, 2014) – Poster
26. Studies on the solvent dependence in the reaction of (anthracen-9-yl)methyl benzyl thioether with DMAD. G. Reshma, J. P. Jacob, P. A. Unnikrishnan, N. Manoj and S. Prathapan National Conference on Current Trends in Chemistry CTric 2014, Kochi, (January 17-18, 2014) – Poster
27. Synthesis of 4-(4-N,N-bis(2-hydroxyethyl)phenyl)-4-aza-8,12-dioxazatriangulenium tetrafluoroborate ion. Saumya Jos, Cisy Abraham, Vineetha, P. K., Manoj, N. National Conference on Current Trends in Chemistry CTric 2014, Kochi, (January 17-18, 2014) - Poster
28. Nature Inspired Initiatives in Chemical Trends (NIICT-2014)" during March 2-5, 2014 at CSIR-Indian Institute of Chemical Technology, Hyderabad, India. – Participation
29. National Symposium on Transcending Frontiers in Organic Chemistry TFOC 2014, Oct 9-11, Thiruvananthapuram, India – Participation

30. Faculty Development Programme, Better Engineering through Better Chemistry Protocols 9-13, June 2014 – Resource Person
31. Application of “Kirigami models” as working models in introducing the basic principles of Stereochemistry and Optical activity, N. Manoj, P. A. Unnikrishnan and S. Prathapan, International Conference on Education in Chemistry – 2014 (ICEC–2014), December 12–14, 2014, HBCSE, Mumbai, India – Oral Contribution
32. Novel Twin legged D-A- π -A sensitizer molecules containing 1,3,5-triazine core for DSSC applications. Suma Chemban Subramanian, Manoj Narayanapillai, International conference on Green Chemistry: Catalysis, Energy and Environment, Goa (January 22-24, 2015) – Poster
33. Synthesis of a few water soluble triazatriangulenium salts. Seena Sebastian, Pravitha N. P and N. Manoj, International conference on Green Chemistry: Catalysis, Energy and Environment, Goa (January 22-24, 2015) - Poster
34. National Level Staff Seminar on Therapeutic Chemistry, 10 March 2015, Sri Sarada College, Salem, Tamilnadu – Resource Person
35. Novel Twin legged D-A- π -A sensitizer molecules containing 1,3,5-triazine as π spacer for Dye sensitized solar cell Applications. Suma Chemban Subramanian and Manoj Narayanapillai, National Seminar on Trends in Physical Sciences TriPS 2015, Kalady, (July 30-31, 2015) - Oral Contribution
36. Metal Enhanced Fluorescence: Study of Pyran-Pyrimidinetrione for Selective Detection of Mercury. K. Kala, Ajayakumar Aswathy, P. K. Vineetha, N. Manoj, National Seminar on Trends in Physical Sciences TriPS 2015, Kalady, (July 30-31, 2015) - Oral Contribution
37. Synthesis and Characterization of Rhodamine Appended S-triazine Derivative: Application in Singlet Oxygen Generation. K. Kala, O. C. Parvathy, James Kiran, N. Manoj, National Seminar on Trends in Physical Sciences TriPS 2015, Kalady, (July 30-31, 2015) – Poster
38. Metal Enhanced Fluorescence: Study of Pyran-Pyrimidinetrione for Selective Detection of Mercury. A. Aswathy, P. K. Vineetha, O. C. Parvathy, K. Kala, N. Manoj, International Conference on Membranes ICM 2015, (August 21-24, 2015) – Poster
39. National Conference on Current Trends in Chemistry CTric 2012, Kochi, (January 20-21, 2012), Member, Organizing Committee
40. OSDD Workshop, March 1-2, 2012 at NIIST Thiruvananthapuram – Participation

41. NOVEL STRATEGIES IN ORGANIC CHEMISTRY", being organized by us during 3rd-7th December 2012 at NIT Calicut – Resource Person
42. National Conference on Current Trends in Chemistry CTric 2013, Kochi, (March 22-23, 2013), Convener, Organizing Committee

PROFESSIONAL AFFILIATIONS

➤ Membership in Professional Bodies

- Chemical Research Society of India – Life member
- Association of Chemistry Teachers – Life member
- Swadeshi Science Movement – Life Member
- Kerala Science and Technology Society – Life Member

➤ Membership in Academic bodies

- Member, Senate, Cochin University of Science and Technology (CUSAT)
- Member, Academic Council, Cochin University of Science and Technology (CUSAT)
- Member, Board of Studies in Applied Chemistry, CUSAT, Kerala
- Member, Board of Studies in Applied Chemistry, Calicut University, Calicut, Kerala
- Member, Board of Studies in Chemistry, Mahatma Gandhi University, Kottayam, Kerala
- Member, Board of Studies in Chemistry, Assumption college (Autonomus), Changanasserry, Kerala
- Member, Board of Examiners, Indian National Chemistry Olympiad, HBCSE, Mumbai, 2017, 2018 and 2019.

➤ International Visits

- Visiting Fellow, Research Institute for Electronic Science (RIES), Hokkaido University, Japan, October, 2018.

- Observer, Indian Delegation, 51st International Chemistry Olympiad, Paris, July, 2019.

➤ **Administrative Positions**

- Head , Department of Applied Chemistry, Cochin University of Science and Technology (CUSAT). – June 2013 – May 2016
- Coordinator, RUSA, Cochin University of Science and Technology (CUSAT). August 2019 – till date