

Curriculum Vitae

Name : **Usha Kulangara Aravind (Dr.)**

Sex : Female

Nationality : Indian

Marital status : Married with one child.

Present Position & Address: Professor, School of Environmental Studies, Cochin University
P.O., Kochi-682022, Kerala, India Fax: 0484-2577595 Ph: 0484-2577311

Previous - Research Scientist, At the Advanced Centre of Environmental Studies and
Sustainable Development (ACCESSD), M.G. University

Address: (Residence) : Kiranam, Arpookara East P.O., Kottayam-686008, Ph:0481- 2594458
9447779269

Academic

- Bachelor of Science (B.Sc) University of Calicut 1987 (August)
- Master of Science (M.Sc.)[&] University of Pune 1990 (July) (I class)
Physical Chemistry
- Doctor of Philosophy (Ph.D) Cochin University of Science and Technology, 1996 (Dec.)
(Analytical Chemistry)

Post-Doctoral Research

1. School of Biosciences, **Mahatma Gandhi University, India**, 1996-'97 (1 year) Topic:
Isolation and purification of a plant protein (lectin) and their structural studies (Research
Associate Fellowship from the central Scientific and Industrial Research (CSIR), 1996, Govt.
of India)

2. Laboratory for Macromolecular and Structural Chemistry, **Katholieke Universiteit Leuven, Belgium**, 1997-'98 in *Structural studies of polymer surfactants using X-ray scattering and optical microscopic techniques* (Procter and Gamble R&D project Fellowship)
- 3) Laboratory of coating technology, **Technical University of Eindhoven, The Netherlands**
- 4) Aug.2000-July 2002 (2 years) in *Film formation and drying of alkyd emulsion Paints (ppm-stw)* Studies are mainly focused on the use of *Confocal Raman spectroscopy* for Depth profiling and also the use of *ATR –FTIR* to study the back side of films (Under TUE post-doctoral fellowship—combined project of DSM, Sigma coatings and Akzo Nobel, Netherlands.). For the development of Eco-friendly paints
- 5) **At the School of Environmental Sciences, M.G.University** (2003 June-2005 February) on self assembled polyelectrolyte (nano) membranes, as **CSIR-Pool Officer**.
- 6) **At the School of Chemical Sciences, M.G. University, Kottayam**, (2005 March- 2008 February), on Development of multilayer (nano) membranes for protein purification and Environmental Applications, as **Principal Investigator, DST Women Scientist Project**
- 7) **At the School of Chemical Sciences, M.G.University** (2009 sept.-2010 April) Immobilization of proteins to self assembled (nano)films and their related applications as sensor (**DST Women Scientist Project**)

Area of research: Green technology: Development of Nanomembranes for environmental applications

Research Projects Awarded

Sl.N	Title of the project	Duty	Amount /in Lakhs	Funding Agency	Duration
1.	Development of multilayer (nano) membranes for protein purification	Principal Investigator	17.5	Department of Science and Technology (DST), New Delhi	2004-2008
2.	Immobilization of proteins to self-assembled (nano) films and their related applications as sensor.	Principal Investigator	13.0	DST, New Delhi	2009-2012
3.	Chemical transformation and bioaccumulation of mercury in Vembanad wetland and Cochin Near Shore Areas	Co-Investigator	65.0	Department of Ocean Development, New Delhi	2008-2011
4.	Clean Energy: An Alternate Route to DMFC Through Chitosan Based Nanomembranes <i>(With Duke University, USA)</i>	Principal Investigator	125.0	University Grants Commission (UGC) Under Obama-Singh 21 st Century Knowledge Initiative	2012-2015

5.	Polyelectrolyte multilayer membranes for the treatment of paper and pulp industry waste water	Principal Investigator	26.0	Kerala State Council for Science, Technology Environment, Trivandrum	2014
6.	Nanoskinned coir matrix for the removal of biological contaminants from water	Principal Investigator	32.0	DST, New Delhi	2017-
7.	Detection and identification of pharmaceutical waste in Vembanad lake	Co-Investigator	25.0	Kerala State Council for Science, Technology Environment, Trivandrum	2018-2021
8.	Indo-Denmark Network Programme “Nanofibre structures for efficient enzyme immobilization in membrane applications”	Collaborator	Partnership programme	Danish Research Council	2016-2017
9.	Layer by layer (LbL) assisted antimicrobial membranes for water purification <i>(With Bengurion University of the Negev, Israel)</i>	Principal Investigator	44.59	SPARC (MHRD) New Delhi	2019-
10.	Towards sustainable surface water ecosystems in India: Predicting the fate, transport and effects of urban wastewater pollutants in rivers. <i>(With University</i>	Co-Investigator	48.49	SPARC (MHRD) New Delhi	2019-

	<i>Leicester, UK)</i>				
11	"Establishment of centre for sensor Devices"	Co- Investigator	248.0	(Government of Kerala under PLEASE(Performance Linked Encouragement for Academic Studies and Endeavours)	2021
12	"Portable Device for the preliminary analysis preeclampsia (consortium project)	Co- Investigator	24.4	DST NEW DELHI	2021
13	Carbon dioxide selective membrane creation using hydrophobic and hydrophilic polymer for the recovery of methane as an energy carrier form biogas	Principal Investigator	46.9	(SPARC (MHRD)	2023-2025
14	Antifouling Multi- Layered Membranes for the Removal of Micro Organisms from Water	Principal Investigator	35	(Rashtriya Uchchar Shiksha Abhiyan 2.0 (RUSA 2.0)	2023-2024

Teaching Experience

16+ years of teaching experience in the field of analytical chemistry, Environmental Chemistry, Water-Air-Soil Chemistry, membrane chemistry and technology, bio-energy,

Masters Guidance:

M.Sc. : 15 Masters Thesis guided

M.Tech.: 8 MTech projects guided

M.Phil Guidance

5 M.Phil degrees were awarded

Ph.D Guidance

8 Ph.D. awarded as guide;

5 Ph.D awarded as Co-guide

8 Ph.D students are currently working

Reviewer of >10 Major International Journals

J. Membr.Sci., Chemosphere, J. Haz Materials, Colloids & Surfaces A., J. Biomaterial Science, Langmuir, Biosensor Bioelectronics, J.Phys.Chemistry (A,B,C), ACS AppliedMaterial Interface etc

Current Research Interests

Water and waste water treatment , Membranes for water purification, low pressure filtrations, LbL assembled membranes in water treatment, water pollution, screening of emerging contaminnts in aquatic systems, protein adhesive surfaces, protein based sensors, structural variation of proteins in response to environmental triggers, dynamics of emerging contaminnts at indoor air, and

Advanced Oxidation Processes (for the degradation of organic pollutants)

International Conference organized (as Convener/organizing committee member)

1. **Convener:** International conference on Climate Change and Developing Countries, Feb.19-22, 2010
2. **Convener:** International Conference on Advanced Oxidation Processes, Sept.18-21, 2010, Kottayam
3. **Convener:** International Conference on Membranes: Environmental and Biological Applications, Sept.16-19, 2011, Kottayam;
4. **Convener,** Second International Conference on Membranes (ICM - 2013) Oct.3-6, 2013, Kottayam, Kerala
5. **Organising Committee member,** International conference on Frontiers of Mass spectrometry (ICMS 2013) Sep. 6-9, 2013, Kottayam, Kerala
6. **Organising Committee member,** Third International Conference on Advanced Oxidation Processes (AOP 2014) Sep 2014, Munnar, Kerala
7. **Convener:** International conference on water: From pollution to purification, 23 - 26 January 2015, Kottayam, Kerala
8. **Convener,** Third International Conference on Membranes (ICM2015), Aug.21-23, 2015 (www.ceetindia.org/icm2015)
9. **Convener,** Forth International Conference on Membranes (ICM2017), Sept.30- Oct.3, 2017, Alappuzha
10. **Coordinator:** International Conference on Water: From Pollution to Purification, Dec.7-10, 2018, Kottayam
11. **Coordinator:** International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam
12. **Coordinator:** 4th International Conference on Frontiers of Mass Spectrometry(ICMS), December 04-07, 2019, Kottayam
13. **Coordinator:** International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam
14. **Convener:** Indo-Israel workshop on Membranes in Water Treatment: Opportunities and Challenges, Nov 5-6, 2020

Convener--Short term training programmes in Analytical Instrumentation-

1. Short term training programmes in Analytical Instrumentation-chromatographic techniques (Ion Chromatography, High pressure liquid chromatography and Gas chromatography). 25-17, April 2011
2. Short term training programmes in Analytical Instrumentation- chromatographic and microscopic techniques (High pressure liquid chromatography, Gas chromatography and Scanning electron microscopy). 1-3, Dec., 2012.
3. Fourier Transform Infrared microscopy, High Pressure Liquid chromatography, and Trace metal analyzer, - 12-14, Sept. 2012

Instrumental Experience: Membrane filtration equipments, UV, IR, IC, TGA-DSC, HPLC, GC, ICP-AAS, SAX, WAXD, Ellipsometer, Contact angle, Microscopies (SEM and AFM), Confocal Raman spectroscopy, FTIR-ATR etc.

Languages Known: Malayalam, Hindi and English

Conference attended

1. International Conference on Photo-irradiation and adsorption based Novel Innovations for Water Treatment (PANI-WATER), March 3-4, 2020, Goa, India
2. International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam
3. 4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam
4. International Conference on Water: From Pollution to Purification, Dec.7-10, 2018, Kottayam
5. Water DTU 3rd Partner Seminar, Technical University of Denmark, Copenhagen, May 23-24, 2017
6. International Conference on Frontiers of Mass Spectrometry, Dec.12-15, 2017, Kottayam
7. International Conference on Photochemistry and Its Applications, Nov.11-14, 2017, Kottayam
8. International Conference on Membranes, Sept.30-Oct.3, 2017, Alleppy
9. International Conference on Water: From Pollution to Purification, Dec.12-15, 2016
10. OSI workshop on “Membrane technology” MGU- Duke University, USA, August 2015
11. Third International Conference on Membranes (ICM2015), Aug.21-23, 2015
(www.ceetindia.org/icm2015)

12. International conference on water: From pollution to purification, 23 - 26 January 2015, Kottayam, Kerala
13. Third International Conference on Advanced Oxidation Processes (AOP 2014) Sep 2014, Munnar, Kerala
14. Second International Conference on Membranes (ICM - 2013) Oct.3-6, 2013, Kottayam, Kerala
15. International conference on Frontiers of Mass spectrometry (ICMS 2013) Sep. 6-9, 2013, Kottayam, Kerala
16. International Conference on Advanced Oxidation Processes, Oct.5-8, 2012, Kottayam
17. International Conference on Membranes: Environmental and Biological Applications, Sept.16-19, 2011, Kottayam
18. International Conference on Advanced Oxidation Processes, Sept. 18-21, 2010, Kottayam
19. International Conference on Climate change and Developing Countries, Feb. 19-22, 2010, Kottayam
20. International Conference on Nanomaterials: Synthesis, Characterization and Applications, Kottayam, April 27-29, 2010
21. International Symposium on Nano Material, Kottayam, April 2009
22. International Conference on Polymer Blends and Composite, Sept. 2009
23. International Conference on Frontiers of Radiation and Photochemistry, Kottayam, Feb.8-11, 2007
24. International symposium on advances in organic chemistry, Kottayam, Jan. 2006.
25. International conference on advances in polymer blends ,composites, IPNS and gels:macro to nano composites, Kottayam, March 2005
26. XIII National Space Science Symposium (NSSS-2004), Kottayam, India, Feb 2004
27. Lunteren meeting on Coating 12-13, 2001, The Netherlands
28. "Material research" May 8-9, 2001, Veldhoven, Netherlands.
29. Fourth annual coating symposium, May 11, 2001 , Eindhoven, The Netherlands
30. Fifth annual coating symposium, May 17, 2002, Eindhoven, The Netherlands
31. Materials research, 27 th May , 2002 Veldhoven, Netherlands.

Recent Invited Talks

- 1) Emerging Pollutants and their Challenges on Earth Ecosystem” , FDP, 16th-20th November, 2020 , Centarl University of Kerala
- 2) International Conference on Photo-irradiation and adsorption based Novel Innovations for Water Treatment (PANI-WATER), March 3-4, 2020, Goa, India
- 3) National Seminar on Air quality monitoring, Kottayam, Sept.2-3, 2019
- 4) Research and funding opportunities, at Bharatmata College, Thrikkakara, Feb.7th ,2020
- 5) Nanomembranes in water purification, Water DTU 3rd Partner Seminar, Technical University of Denmark, Copenhagen, May 23-24, 2017
- 6) International Conference on Membranes, Sept.30-Oct.3, 2017, Alleppy
- 7) OSI workshop on “Membrane technology” MGU- Duke University, USA, in Kottayam, August 2015
- 8) Third International Conference on Membranes (ICM2015), Aug.21-23, 2015 (www.ceetindia.org/icm2015)
- 9) Third International Conference on Advanced Oxidation Processes (AOP 2014) Sep 2014, Munnar, Kerala
- 10) Second International Conference on Membranes (ICM - 2013) Oct.3-6, 2013,Kottayam, Kerala
- 11) *Persistent organic pollutants in plantation*; National seminar on Green chemistry – the ultimate tool for pollution control, Feb 2012, Assumption College, Changanacherry, kottayam, kerala

Ongoing Research Collaborations

1. Department of Civil and Environmental Engineering, Duke University, USA
2. Department of Environmental Engineering, California Institute of Technology, USA
3. Department of Desalination and Water Treatment, Zuckerberg Institute for Water Research, Ben-Gurion University of the Negev, Israel
4. Technical University of Denmark, Roskilde, Denmark
5. Department of Mechanical Engineering, IIT, Jodhpur, India
6. Tashkent state technical university, (Islam Karimov) Uzbekistan
7. University of Maribor, Slovenia
8. Norwegian University
9. IICT, Hyderabad
10. Central University of Kerala
11. Mahatma Gandhi university, Kottayam
12. St Petersburg University, Russia
13. The University of Sheffield
14. Geomaterials Department, University of Paris-Est-Marne-la-Vallee (UPEM), Campus-Sur-Marne, France
15. University Leicester, UK

Membership in professional bodies

1. Member, Board of Studies, CUSAT
2. Adjunct Faculty, Advanced centre of Environmental Studies and Sustainable Development (ACCESSD), M. G. University
3. Coordinator, Virtual centre for Basic Sciences, CUSAT
4. Life member, Centre for Environment Education and Technology (CEET), Kottayam
5. Life member and Treasurer, Society of Environmental Chemistry and Allied Sciences (SECAS), Kottayam
6. Life Member , Indian Membrane Society
7. Cusat Alumni Association CUSAT Excecutive member
8. Facility Management committee-SAIF -CUSAT CUSAT Member
9. Facility Management committee-SAIF -MGU DST Member
10. Zero waste campus initiative CUSAT coordinator

References:

Prof. Mark Wiesner

Director, Center for Environmental Implications of Nanotechnology, Department of Civil and Environmental Engineering, Duke University, Durham, USA E-mail: wiesner@duke.edu

Prof. Yoram Oren ,

Department of Desalination and Water Treatment, Zuckerman Institute for Water Research, Blaustein Institutes for Desert research, Ben-Gurion University of the Negev , PO Box 653, Beer-Sheva 84109, Israel E-mail: yoramo@bgu.ac.il

Prof. Michael Hoffmann Environmental Engineering

California Institute of Technology (Caltech), Pasadena, USA E-mail: mrh@caltech.edu

Prof. RAMARAJ, Ramasamy

School of Chemistry, Director, Centre for Photoelectro- Chemistry, Madurai Kamaraj University,
Madurai – 625021 Email: ramaraj.ram@gmail.com

Prof. Dr. B.S.M. Rao IISER, Pune

Pune 411008, Maharashtra, bsmr@hotmail.com

Research Publications

Book Chapter

1. R. K. Satankar, A. Kaurwar, S. Gupta, K. Usha, S T. Azeko, W. O. Soboyejo, A. B.O. Soboyejo and A Plappally, Role of Equine Ordure in Enhancing Physical and Mechanical Properties of Natural Bio-active Composites, in *Advanced Polymeric Materials For Sustainability And Innovations*, Editor(S): D. Rouxel, Sajith T.A, S. Thomas, N. Kalarikkal, 2017, Apple Academic Press, NY.
2. Jeeva M. Philip, Usha K. Aravind, C. T. Aravindakumar “Use of Antibiotics in Animals and Its Possible Impacts in the Environment” (pages 77- 91), in the “Handbook of Research on Social Marketing and Its Influence on Animal Origin Food Product Consumption” Edited by Diana Bogueva, Dora Marinova, and Talia Raphaely (Editors), IGA Global (Idea Group, USA), 2018, ISBN13: 9781522547570
3. Usha K. Aravind, Subha Sasi, Mary Lidiya Mathew, C. T. Aravindakumar, Layer by layer (LbL) coated multilayer membranes in dye house effluent treatment (Chapter 22) in “Membrane Technology: Sustainable Solutions in Water, Health, Energy and Environmental Sectors” Edited by S. Sridhar, CRC Press 2018

Reviews

4. Manoj P. Rayaroth, Usha K. Aravind, Charuvila T. Aravindakumar , Degradation of pharmaceutically active compounds by ultrasound based advanced oxidation process: A review, *Env. Chem. Lett.*, **2016**, *14*, 259-290
5. Jeeva M. Philip, Usha K. Aravind and C.T. Aravindakumar, Emerging Contaminants in Indian

Environmental Matrices – A Review, *Chemosphere*, **2018**,Jan;190:307-326. doi: 10.1016

Editorial as Guest Editor

6. *Environ. Chem.*,**2019** (*in press*)(Special Issue), *Foreword to the Special Issue on the International Conference on Water: From Pollution to Purification*, C. T. Aravindakumar, Usha K. Aravind and Roland Kallenborn
7. *Env Sci Pollut. Res.*, **2018**, 25:20281–20282 (Special Issue), Water: From Pollution to Purification
C. T. Aravindakumar, Mehmet Oturan and Usha Aravind

In International Journals

1. John, R., Aravindakumar, C. T., & Aravind, U. K. Delineating the Cascade of Molecular Events in Protein Aggregation Triggered by Glyphosate, Aminomethylphosphonic Acid, and Roundup in Serum Albumins. *Aminomethylphosphonic Acid, and Roundup in Serum Albumins*.
2. Rayaroth, M. P., Boczkaj, G., Aubry, O., Aravind, U. K., & Aravindakumar, C. T. (2023). Advanced Oxidation Processes for Degradation of Water Pollutants—Ambivalent Impact of Carbonate Species: A Review. *Water*, 15(8), 1615.
3. Reyaroth, M., Aravind, U., Boczkaj, G., & Aravindakumar, C. T. (2023). Nonphotochemical generation of Singlet oxygen in pollutant remediation: A mini-review on the degradation pathway based on mass spectrometry and DFT calculations.
4. Gopalakrishnan, A., Mathew, J., Thomas, J. M., Thankachan, G., Aravindakumar, C. T., & Aravind, U. K. (2023). Spectro-kinetic investigations on the release mechanism of lysozyme from layer-by-layer reservoirs. *Colloids and Surfaces B: Biointerfaces*, 222, 113135.
5. Menacherry, S. P. M., Aravind, U. K., & Aravindakumar, C. T. (2022). Transformation Mechanism of Organic CECs by Photochemical Oxidation Processes: Insights from Mass Spectrometry. In *Photo-and Electrochemical Water Treatment* (pp. 34-59).
6. Bakyt, S., Aravindkumar, C. T., & Aravind, U. K. (2022). INVESTIGATION OF THE MECHANISM OF SELECTIVE EXTRACTION OF IONS OF VARIOUS SALTS FROM WATER, USING POLYAMIDE MEMBRANES. *Chemical Journal of Kazakhstan*, (4).
7. Naduvilpurakkal, S. B., Menacherry, S. P. M., Nair, S. R., Nguyen, T. P., Nair, P. G., Aravind, U. K., & Aravindakumar, C. T. (2022). Exploring the oxidation chemistry of hydroxy naphthoic acid: An experimental and theoretical study. *Journal of Physical Organic Chemistry*, 35(12), e4416.
8. Moorchildot, V. S., Aravind, U. K., Menacherry, S. P. M., & Aravindakumar, C. T. (2022). Single-Particle Analysis of Atmospheric Aerosols: Applications of Raman Spectroscopy. *Atmosphere*, 13(11), 1779.
9. Menacherry, S. P. M., Aravind, U. K., & Aravindakumar, C. T. (2022). Critical review on the role of mass spectrometry in the AOP based degradation of contaminants of emerging concern (CECs) in water. *Journal of Environmental Chemical Engineering*, 10(4), 108155.
10. Sreejith, V. M., Thomas, J. R., Khalid, N. K., Varghese, A., Aravind, U. K., & Aravindakumar, C. T. (2022). Implosion–demolitions: impact on the local environment in a tropical humid Ramsar site

- located in southwestern India. *Air Quality, Atmosphere & Health*, 15(7), 1243-1261.
11. Philip, J. M., Koshy, C. M., Aravind, U. K., & Aravindakumar, C. T. (2022). Sonochemical degradation of DEET in aqueous medium: Complex by-products from synergistic effect of sono-Fenton–New insights from a HRMS study. *Journal of Environmental Chemical Engineering*, 10(3), 107509.
 12. Sreedharan Nair, S., Unni, K. K., Sasidharanpillai, S., Kumar, S., Aravindakumar, C. T., & Aravind, U. K. (2022). Bio-physical and computational studies on serum albumin/target protein binding of a potential anti-cancer agent. *European Journal of Pharmaceutical Sciences*, 172, 106141.
 13. Khalid, N. K., Reyaroth, M. P., Devadasan, D., Aravind, U. K., & Aravindakumar, C. T. (2022). Sonochemical Degradation Studies of Isoniazid in Aqueous Medium. *Water, Air, & Soil Pollution*, 233(3), 1-13.
 14. Nair, S. R., Menacherry, S. P. M., Renjith, S., Manoj kumar, T. K., Aravind, U. K., & Aravindakumar, C. T. (2022). Oxidation reactions of carbaryl in aqueous solutions. *Chemical Physics*, 554, 111427.
 15. Sreejith, V. M., Thomas, J. R., Khalid, N. K., Varghese, A., Aravind, U. K., & Aravindakumar, C. T. (2022). Implosion–demolitions: impact on the local environment in a tropical humid Ramsar site located in southwestern India. *Air Quality, Atmosphere & Health*, 1-19.
 16. Thomas, J. R., Sreejith, M. V., Aravind, U. K., Sahu, S. K., Shetty, P. G., Swarnakar, M., ... & Aravindakumar, C. T. (2022). Outdoor and indoor natural background gamma radiation across Kerala, India. *Environmental Science: Atmospheres*.
 17. John, R., Mathew, J., Mathew, A., Aravindakumar, C. T., & Aravind, U. K. (2021). Probing the Role of Cu (II) Ions on Protein Aggregation Using Two Model Proteins. *ACS omega*.
 18. Nejumal, K. K., Sreejith, M. V., Dineep, D., Aravind, U. K., & Aravindakumar, C. T. (2021). Identification and Ecological Hazard Analysis of Contaminants of Emerging Concerns (CECs) in Water Bodies Located in a Coastal Metropolitan Environment. *Water, Air, & Soil Pollution*, 232(10), 1-14.
 19. Sreejith, M. V., Aradhana, K. S., Varsha, M., Cyrus, M. K., Aravindakumar, C. T., & Aravind, U. K. (2021). ATR-FTIR and LC-Q-ToF-MS analysis of indoor dust from different micro-environments

- located in a tropical metropolitan area. *Science of The Total Environment*, 783, 147066.
20. Athullya, M. K., Dineep, D., Mathew, M. L., Aravindakumar, C. T., & Aravind, U. K. (2021). Identification of micropollutants from graywater of different complexity and remediation using multilayered membranes. *Environmental Science and Pollution Research*, 1-13.
 21. Shalumon, C. S., Sanu, K. S., Thomas, J. R., Aravind, U. K., Radhakrishnan, S., Sahoo, S. K., ... & Aravindakumar, C. T. (2021). Analysis of uranium and other water quality parameters in drinking water sources of 5 districts of Kerala in southern India and potability estimation using water quality indexing method. *HydroResearch*.
 22. CS, S., CT, A., & K. Aravind, U. (2021). Detection of bromate in packaged drinking water and its removal using polyelectrolyte multilayer membranes. *Environmental Quality Management*, 30(4), 101-112.
 23. Sasi, S., Rayaroth, M. P., Aravindakumar, C. T., & Aravind, U. K. (2021). Alcohol ethoxysulfates (AES) in environmental matrices. *Environmental Science and Pollution Research*, 1-20.
 24. M. Mathew, C. T. Aravindakumar, Usha K. Aravind, Potential involvement of environmental triggers in protein aggregation with mercuric chloride as a model, *International Journal of Biomacromolecules*, 2021 (in press)
 25. Subha Sasi, Manoj P. Rayaroth, C. T. Aravindakumar and Usha K. Aravind, Occurrence, Distribution and Removal of organic micro-pollutants in a low saline water body, *Science of the Total Environment*, 2020, 749, 141319
 26. M. Mathew, C. T. Aravindakumar, Usha K. Aravind, Unravelling the fibrillation mechanism of ovalbumin in the presence of mercury at its isoelectric pH, *RSC Advances*, 2020 (in press)
 27. S. Thomas, M.P. Rayaroth, S. P. M. Menacherry, Usha K. Aravind, C. T. Aravindakumar, Sonochemical Degradation of Benzenesulfonic Acid in Aqueous Medium, *Chemosphere*, 2020, 252, 126485
 28. K.K Nejumal, P.R Manoj, D. Dineep, Usha K. Aravind and C.T. Aravindakumar, Photochemical Oxidative Degradation Studies of Isoniazid in Aqueous Medium, *Materials Today: Proceedings*, 2020 (in press)
 29. Naveen S. Lal, John Richard Thomas, Sumith Satheendran, Abin Varghese, Usha K. Aravind, C. T. Aravindakumar, Air Quality Disturbance Zone mapping in Greater Cochin Region of Kerala State,

India using Geoinformatics, *Spatial Information Research* **2020**, <https://doi.org/10.1007/s41324-020-00329-7>

30. S. Sreedhanya, S. Ammu, C. T. Aravindakumar and Usha K. Aravind, Spectroscopic and theoretical methods to probe protein-ligand binding, *Materials Today: Proceedings*, **2020** (in press)
31. Jain Maria Thomas, C.T. Aravindakumar and Usha K Aravind, Removal of Beta Blockers using Polyelectrolyte Monolayered Membrane and its Antifouling Performance, *Journal of Industrial and Engineering Chemistry*, **2020** , 87, 222-233
32. M. Vishnu Sreejith, John Richard Thomas, C.T. Aravindakumar and Usha K. Aravind, Characterisation of atmospheric particulate matter over a site in southern Kerala, India - using ATR-FTIR and Confocal micro-Raman Spectroscopy, *Materials Today: Proceedings*, **2020** (in press)
33. Kishore Kumar Nair, Bennie Viljoen; C T Aravindakumar; H C Swart; Richard A Harris; Usha K Aravind, Synthesis of silver incorporated lithium doped zinc oxide nanocomposites for in-vitro biorational evaluation of Candidiasis and Cryptococcosis, *Applied Surface Science* , **2020**, 506, 144800
34. Jain Maria Thomas, C.T. Aravindakumar and Usha K Aravind, Protein loading studies using polyelectrolyte microcapsules *International Journal of Polymeric Materials and Polymeric Biomaterial*, **2019**, DOI:10.1080/00914037.2019.1667803
35. V.Vijayan, S. Yesodharan, C.T. Aravindakumar, Usha K. Aravind, V.J. Koshy and E.P. Yesodharan, Role of electrodes and electrolytes on the efficiency of electrolytic decontamination of water from indigo carmine dye pollutant. *Indian Journal of Applied Research* **2019**, 9(11) ISSN No. 2249 - 555X | DOI : 10.36106/ijar
36. Jisha Chandran, U. K. Aravind, P. T. Nguyen, C. T. Aravindakumar, Solvent dependent ESI-collisionally induced dissociation of protonated nitenpyram, *Int. J. Mass Spectrometry*, **2019**, 445, 116207
37. C.S. Shalumon, C.T. Aravindakumar and Usha K. Aravind, A multilayered surface for the interactive separation of perchlorate from aqueous medium, *Environmental Chemistry*, **2019**, 16(8) 587-598
38. Jisha Chandran, Vishnu N. R., Usha K. Aravind and C. T. Aravindakumar, ESI- MSMS characterization and differentiation of the cross links of thymine from one electron oxidation with

SO₄^{•-}, *Int. J. Mass Spectrometry*, **2019**, 443, 53-60

39. Mary Lidiya Mathew, G. Akhil, C.T. Aravindakumar and U.K. Aravind, Low - cost multilayered green fiber for the treatment of textile industry waste water, *Journal of Hazardous Materials* **2019**, 365, 297-305
40. M. T. Elias, J. Chandran, Usha K. Aravind, C. T. Aravindakumar Oxidative Degradation of Ranitidine Induced by UV and Ultrasound: Identification of Transformation Products using LC-Q-ToF-MS, *Environmental Chemistry*, **2018**16(1), 41-54
41. Sunil Paul M.Menachery, T. P.Nguyen, G. Pramod, Usha K.Aravind , C. T. Aravindakumar, Exploring the Mechanism of Diphenylmethanol Oxidation: A Combined Experimental and Theoretical Approach, *Chemical Physics*, **2018**, 513, 201-208
42. Manoj P. Rayaroth, Usha K. Aravind, and C. T. Aravindakumar, Effect of inorganic ions on the ultrasound initiated degradation and product formation of Triphenylmethane dyes, *Ultrasonic Sonochemistry*, **2018**, 48, 482-491
43. K.K. Nejumal, D. Dineep, Mahesh Mohan, K.P. Krishnan, U.K. Aravind, C.T. Aravindakumar, Presence of Bisphenol S and Surfactants in the Sediments of Kongsfjorden: A Negative Impact of Human Activities in Arctic?, *Environmental Monitoring and Assessment*, **2018**, 190, 22
44. Subha Sasi, P.R. Manoj, C.T. Aravindakumar and U.K. Aravind, Identification of surfactants and its correlation with physico-chemical parameters at the confluence region of Vembanad Lake in India, *Env Sci Pollut. Res.*, **2018** , 25(21):20527- 20539. doi: 10.1007/s11356-017-0563-4
45. P.R. Manoj, Usha.K. Aravind and C.T. Aravindakumar, Photocatalytic Degradation of Lignocaine in Aqueous Suspension of TiO₂ Nanoparticles: Mechanism of Degradation and Mineralization, *Journal of Environmental Chemical Engineering*,**2018** (6), 3556-3564
46. K.K. Nejumal, D. Dineep, Mahesh Mohan, K.P. Krishnan, U.K. Aravind, C.T. Aravindakumar, Presence of Bisphenol S and Surfactants in the Sediments of Kongsfjorden: A Negative Impact of Human Activities in Arctic?, *Environmental Monitoring and Assessment*, **2018**, 190, 22
47. Subha Sasi, P.R. Manoj, C.T. Aravindakumar and U.K. Aravind, Identification of surfactants and its correlation with physico-chemical parameters at the confluence region of Vembanad Lake in India, *Env Sci Pollut. Res.*, **2018** Jul;25(21):20527-20539. doi: 10.1007/s11356-017-0563-4

48. P.R. Manoj, U.K. Aravind and C.T. Aravindakumar, Photocatalytic Degradation of Lignocaine in Aqueous Suspension of TiO₂ Nanoparticles: Mechanism of Degradation and Mineralization, *Journal of Environmental Chemical Engineering*, **2018** (6), 3556-3564
49. Jain Thomas, R. Vishnu, C.T. Aravindakumar, and Usha K. Aravind, Polyelectrolyte Functional Bilayers for the Removal of Model Emerging Contaminants, *Industrial Engineering Chemistry Research*, **2017**, 56 (46), 13874–13884
50. Amrita Kaurwar, Raj Satankar, Sandeep Gupta, Usha. K. Aravind, Kuldeep Kothari, Alfred Soboyejo and Anand Plappally, 2017, Functional Demarcation of Traditional Off-White Colored Water Pots Manufactured from Rajasthan Clayey Soils and Red Colored Water Pots from Gujarat Clayey Soils using Spectrographic, Cooling and Strength Studies -- a Case Study from Jodhpur, Rajasthan, India, *MRS Advances*, **2017**, Vol. 2, Issue 37-38 (Materials Issues in Art and Archaeology XI), 2027-2032
51. Jisha Chandran, Usha K. Aravind, and C. T. Aravindakumar, Mass spectrometric characterization of sonochemical transformation products of 2'-deoxycytidine under aerated conditions: Direct observation of hydroxyhydroperoxide and glycol, *Chemistry Select*, **2017**, 2(32), 10329-10335
52. S. Thomas, S.V. Abraham, U. K. Aravind and C. T. Aravindakumar, Enhanced degradation of acid red 1 dye using a coupled system of zero valent iron nanoparticles and sonolysis, *Environ Sci. Pollut. Res.*, **2017**, 24(31), 24533-24544
53. Manoj P. Rayaroth , Usha K. Aravind, and C. T. Aravindakumar, Role of in-situ nitrite ion formation on the sonochemical transformation of para-aminosalicylic acid, *Ultrasonic Sonochemistry*, **2017**, 40, 213-220
54. Manoj P. Rayaroth , Chung-Seop Lee, Usha K. Aravind, Charuvila T. Aravindakumar, Yoon-Seok Chang, Oxidative degradation of benzoic acid using Fe⁰- and sulfidized Fe⁰-activated persulfate: A comparative study", *Chem. Eng. J.*, **2017** , 315, 426-436
55. V.A. Sijumon, U.K. Aravind and C.T. Aravindakumar, Degradation studies of amaranth dye using Zero Valent Iron Nanoparticles: Optimal conditions and analysis of intermediate products by LC-Q-ToF-MS, *Environmental Engineering Science*, **2017**, 34(5), 376-383
56. Jissy Mathew, G. Akhil, C.T. Aravindakumar, U.K. Aravind Transport properties and morphology of CHI/PSS multilayered microfiltration membranes for the low pressure filtration of amino acids" *J. Chem. Tech. Biotech.*, **2016**, 92, 834–844

57. M. P. Rayaroth, U. K. Aravind, C. T. Aravindakumar , Ultrasound based AOP for emerging pollutants: From degradation to mechanism, *Environ. Sci. Pollut. Res.* **2016** Doi:10.1007/s11356-016-6606-4
58. Sunil Paul M. Menachery, Sreekanth R. Nair, Pramod Gopinathan, Usha K. Aravind, and C. T. Aravindakumar, Transformation Reactions of Radicals from the Oxidation of Diphenhydramine: Pulse Radiolysis and Mass Spectrometric Studies, *Chemistry Select*, **2016** *1* (5), 924-933
59. Subha Sasi, M. P. Rayaroth, D. Devadasan, Usha K. Aravind and C. T. Aravindakumar, Influence of inorganic ions and selected emerging contaminants on the degradation of Methylparaben: A sonochemical approach, *Journal of Hazardous Materials*, **2015**, *300*, 202-209
60. Jisha Chandran, U.K. Aravind, C.T. Aravindakumar, Sonochemical transformation of thymidine: A mass spectrometric study, *Ultrasonics Sonochemistry*, **2015**, *27*, 178-186
61. S. P. M. Menachery, Olivier Lapr evote, Thao P. Nguyen, Usha K. Aravind, G. Pramod and C.T. Aravindakumar, Identification of Position Isomers by Energy- Resolved Mass Spectrometry, *Journal of Mass Spectrometry* , **2015**, *50*, 944–950
62. M.P. Rayaroth, K.K. Nejumal, Subha Sasi, Usha K. Aravind, and C. T. Aravindakumar, Identification of chlorophene in a backwater stream in Kerala (India) and its sonochemical degradation studies, *Clean - Soil, Air, Water*, **2015**, *43*, 1338-1343
63. J. John, A. Reghuwanshi, U. K Aravind, C.T. Aravindakumar, Development and validation of a high-performance thin layer chromatography method for the determination of cholesterol concentration, *Journal of Food and Drug Analysis*, **2015**, *23*(2):219-224
64. Manoj P. Rayaroth, Usha K. Aravind and C.T. Aravindakumar, Sonochemical Degradation of Coomassie Brilliant Blue: Effect of frequency, power density, pH and various additives, *Chemosphere*, **2015**, *119*, 848-855
65. Akhil Gopalakrishnan, Mary Lidiya Mathew, Jisha Chandran, Appala Raju Badireddy, Judith Winglee, Mark Wiesner, C. T. Aravindakumar and Usha K. Aravind, Sustainable Polyelectrolyte Multilayer Surfaces: Possible Matrix for Salt/dye Separation, *ACS Appl. Mater. Interfaces*, **2015**, *7*, 3699-3707

66. M. M. Sunil Paul, U. K. Aravind, G. Pramod, A. Saha, and C. T. Aravindakumar, *Hydroxyl Radical Induced Oxidation of Theophylline in Water: A Kinetic and Mechanistic Study*, **Org. Biomol Chem.** **2014**, **12** (30), 5611 - 5620
67. M. Mathew, S. Sreedhanya, P. Manoj, C. T. Aravindakumar and Usha K. Aravind *Exploring the interaction of bisphenol-S with serum albumins: A better or worse alternative for bisphenol-A?*, **J. Phys. Chem. B.**, **2014**, 118 (14), 3832–3843
68. R. Sreekanth, Sunil Paul M. M, Usha K. Aravind, J.L.Marignier, J.Belloni· C. T. Aravindakumar, *Oxidation reactions of hydroxy naphthoquinones: Mechanistic investigation by LC-Q-TOF-MS Analysis*, **Int. J. Radiat. Biol.**, **2014**, 90(6), 495- 502.
69. N.B. Shibin, R. Sreekanth, Usha K. Aravind, K.M. Afsal Mohammed, N.V. Chandrashekhar, Jayan Joseph, S. K. Sarkar, D.B. Naik and C.T. Aravindakumar, *Radical chemistry of glucosamine naphthalene acetic acid and naphthaleneacetic acid: A pulse radiolysis study*, **J.Phys.Org. Chem.**, **2014**, 27(6),478–483
70. Shoniya Thomas, R. Sreekanth, V.A. Sijumon, Usha K Aravind and C.T. Aravindakumar, *Oxidative Degradation of Acid Red 1 in Aqueous Medium*, **Chem. Eng. J.**, 2014, 244, 473–482
71. K.K.Nejumal, P.R. Manoj, Usha K. Aravind, C.T. Aravindakumar, *Sonochemical Degradation of a Pharmaceutical Waste, Atenolol, in Aqueous Medium*, **Environ. Sci. Pollut. Res.**, **2014**, 21, 4297-4308
72. R. Sreekanth, K.P. Prasanthkumar, M.M. Sunil Paul, Usha K. Aravind,, C.T. Aravindakumar, *Oxidation Reactions of 1- and 2-naphthols: An Experimental and Theoretical Study*, **J. Phys. Chem. A.**, **2013**,117, 11261–11270
73. T. V. Divyalakshmi, S. Sreedhanya^a, G. Akhil, C. T. Aravindakumar and Usha K. Aravind, *Sub-picomolar sensing of hydrogen peroxide with ovalbumin embedded CHI/PSS multilayer membrane*, **Analytical Biochemistry**, **2013**, 440, 49-55
74. S. Venu, D.B. Naik, S.K. Sarkar, Usha K. Aravind A.Nijamudheen, C.T.Aravindakumar, *Oxidation Reactions of Thymol: A Pulse Radiolysis and Theoretical Study*, **J. Phys. Chem. A.**, **2013**, 117, 291–299
75. M.M. Sunil Paul, Usha K. Aravind, G. Pramod, C.T. Aravindakumar, *Oxidative Degradation of Fensulfothion by Hydroxyl Radical in Aqueous Medium*, **Chemosphere**, **2013**, 91, 295–301
76. V. J. Disha, C. T. Aravindakumar, Usha K. Aravind, *Phosphate recovery by high flux low pressure multilayer membranes*, **Langmuir** **2012**, 28, 12744-12752
77. Jissy Mathew, S. Sreedhanya, M. S. Baburaj, C. T. Aravindakumar, U. K. Aravind, *Fabrication of*

- switchable protein resistant and adhesive multilayer membranes, *Colloids and Surfaces B: Biointerfaces*, **2012**, 94, 118-124
78. M. S. Baburaj, C.T. Aravindakumar, S. Sreedhanya, A.P. Thomas, Usha K. Aravind, Treatment of model textile effluents with PAA/CHI and PAA/PEI composite membranes *Desalination* **2012**, 288, 72–79
79. V.M. Manoj, Usha K. Aravind, Hari Mohan, C. T. Aravindakumar, Reaction of hydroxyl radicals with S-nitrosothiols: Formation of thiyl radical (RS•) as the intermediate, *Res. Chem. Intermed.* **2011**, 37, 1113-1122
80. U. K. Aravind , B. George , M. S. Baburaj , S. Thomas , A. P. Thomas and C. T. Aravindakumar. Treatment of industrial effluents using polyelectrolyte membranes, *Desalination* **2010**, 252 27-32
81. V. M. Manoj, Usha K. Aravind and C. T. Aravindakumar, Degradation Decomposition of S-nitrosothiols induced by UV and sunlight, *Advances in Physical Chemistry* **2009**, 890346
82. Jissy Mathew, C. T. Aravindakumar and Usha K. Aravind, Effect of ionic strength and protein concentration on the transport of proteins through chitosan/polystyrene sulfonate multilayer membrane, *Journal of Membrane Science* **2008**, 325, 625-632
83. P. Manoj, V. M. Manoj, K. P. Prasanthkumar, T. K. Manoj, Usha K. Aravind and C. T. Aravindakumar, Reaction of Sulphate Radical Anion (SO₄^{•-}) With triazine derivatives: A laser flash photolysis study, *J. Phys. Org. Chem.* **2007**, 20, 122-129
84. Rani Varghese, Usha K. Aravind and Charuvila T. Aravindakumar, Fenton-Enhanced - Radiolysis of Cyanuric acid, *J. Hazardous Materials* **2007**, 142, 555-558
85. Usha K. Aravind, Jissy Mathew and C. T. Aravindakumar, Transport Studies of BSA, Lysozyme and Ovalbumin through Chitosan/ Polystyrene Sulfonate Multilayer Membrane. *Journal of Membrane Science*. 299, 146-155, **2007**
86. Rani Varghese, Hari Mohan, P. Manoj, V. M. Manoj, Usha K. Aravind, K. Vandana and C. T. Aravindakumar, On the Reactions of Hydrated Electrons with Triazine Derivatives in Aqueous Medium, *J. Agric. Food Chem.*, **2006**, 54 (21), 8171 -8176
87. V. M. Manoj, H. Mohan, U. K. Aravind and C. T. Aravindakumar, One-Electron Reduction of S-Nitrosothiols in Aqueous Medium, *Free Rad. Biol. Med.* **2006**, 41, 1240-1246
88. J. M. Joseph, T. L. Luke, Usha K. Aravind and C. T. Aravindakumar, Photochemical production of hydroxyl radical from aqueous Fe(III)-hydroxy complex: Determination of its reaction rate constants with some substituted benzenes using TBA assay method, *Water Environmental Research* **2001**, 73, 243

89. R. Mendez, K. Usha, K. K. M. Yusuf and V. N. S. Pillai, Studies on metal complexes of SMH resin, *European Polymer Journal*, **1996**, 32(4), 551-521
90. K. Usha and V. N. S. Pillai, Preparation, characterization and alkali metal permeation through Nylon-666-g-Maleic acid membrane, *Polymer International*, **1995**, 38, 263-268.

Papers Presented / published in Conference Proceedings

1. John Richard Thomas, M. Vishnu Sreejith, Mahesh Mohan, Usha K. Aravind and C.T Aravindakumar, Polar and tropical precipitation analysis for heavy metal contamination: A comparison, *International Conference on Frontiers in Marine Science Challenges and Prospects (MARICON), December 16-20, 2019, Kochi*
2. Jain Maria Thomas, C.T Aravindakumar and Usha K. Aravind, Polystyrene sulfonate (PSS) functional layer membrane for the removal of pharmaceutical drugs from water under low pressure conditions, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
3. C.S. Shalumon, C.T Aravindakumar and Usha K. Aravind, Fabrication of polyelectrolyte multilayers membranes and its application in separation of ionic pollutants from drinking water sources, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
4. Mary Lidiya Mathew, SubhaSasi, C.T Aravindakumar and Usha K. Aravind, CHI/PAA nanoskinned membranes for the treatment and reuse of local textile mill effluents, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
5. V.J. Disha, C.T Aravindakumar and Usha K. Aravind, Phosphorus separation characteristics of multilayer membranes: A comparative study, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
6. P. Nikhil Chandra, C.T Aravindakumar and Usha K. Aravind, Tailors made polyelectrolyte multilayers for the removal of obidoxime from water, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
7. Susanna Kurian, C.T Aravindakumar and Usha K. Aravind, Surface modification of polymer membranes by LBL for antibacterial, antiadhesive and antifouling applications, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
8. Jain Maria Thomas, C.T Aravindakumar and Usha K. Aravind, CHI/PSS functional layers for the

- removal of model emerging contaminants, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
9. Sajana Peter, K.K Nejumal, Usha K. Aravind and C.T Aravindakumar, Photo transformation studies of pharmaceutical compound under natural condition, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 10. M.S. Arya, C.T Aravindakumar and Usha K. Aravind, Interaction of mycotoxins with ultrafiltration membranes during water treatment, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 11. Anjali Venukumar, Valsamma J. Koshy, C.T Aravindakumar and Usha K. Aravind, determination of inorganic anions and cations in Meenachil River by ion chromatography, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 12. G. Akhil, C.T Aravindakumar and Usha K. Aravind, Periodic alternate deposition of polyelectrolyte multilayers for surface patterning, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 13. G. Akhil, C.T Aravindakumar and Usha K. Aravind, Polyelectrolyte multilayer templates for human serum albumin conformal coatings, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 14. Amrutha Asokan, Usha K. Aravind and C.T Aravindakumar, Polyelectrolyte (PEI/PSS) coated membrane for the enrichment of phosphate by crossflow filtration, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 15. M.K. Athullya, Shanthi Prabha, ValsammaKoshi, C.T Aravindakumar and Usha K. Aravind, Preliminary analysis on the potential of rice husk derived biochar for the removal of non-ionic surfactant from aqueous medium, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 16. K.K. Nejumal, Usha K. Aravind and C.T Aravindakumar, Investigation of photochemical degradation of Isoniazid in aqueous medium using HPLC and LC-Q-ToF, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 17. Bastin K. Jose, Usha K. Aravind and C.T Aravindakumar, identification and quantification of contaminants of emerging concern in Vembanad lake (Kerala) sediments using Ultra-fast liquid chromatography coupled with triple quadrupole mass spectrometer, *International Conference on Separation Science and Technology (ICST), December 13-16, 2019, Kottayam*
 18. K.K. Nejumal, Usha K. Aravind and C.T Aravindakumar, Occurrence of contaminants of emerging concern in Periyar Rive, Kerala: Identification and quantification by LC-Q-ToF-MS, *Proc-4th*

International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam

19. Jeeva M. Philip, Usha K. Aravind and C.T Aravindakumar, Screening of contaminants of emerging concern (CECs) in drinking water samples: A high resolution mass spectrometric study, *Proc-4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam*
20. Reshmi John, M.K. Cyrus, M.S. Arya, K.J. Bastin, K.K. Nejumal, Usha K. Aravind and C.T Aravindakumar, Comparative degradation studies of the Beta Blockers, propranolol and timolol in water by Sonochemical/ sonocatalytic process and characterization of sono transformation products by LC-Q-ToF-MS, *Proc-4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam*
21. BastinK.Jose, Usha K. Aravind and C.T Aravindakumar, Identification and quantification contaminants of emerging concern in Vembanad lake (Kerala) using ultra-fast liquid-fast liquid chromatography coupled with triple quadrupole mass spectrometer, *Proc-4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam*
22. Misha T. Elias, C. Jisha, C.T Aravindakumar and Usha K. Aravind, UV Photolysis of ranitidine and identification of major transformation products by LC-Q-ToF-MS, *Proc-4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam*
23. Sajana Peter, K.K Nejumal, Usha K. Aravind and C.T Aravindakumar, Sunlight induced transformation of the beta blocker, propranolol under natural environmental condition, *Proc-4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam*
24. Jeeva M. Philip, Usha K. Aravind and C.T Aravindakumar, Identification of the Sonochemical degradation products of DEET using LC-Q-ToF-MS, *Proc-4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam*
25. M.K. Athullya, D. Dineep, Mary Lidiya Mathew, Usha K. Aravind and C.T Aravindakumar, Identification of surfactants from gray water using LC-Q-ToF-MS, *Proc-4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam*
26. C.M. Vandhana, John Richard Thomas, Vishnu Sreejith, Usha K. Aravind and C.T Aravindakumar, Indoor dust analysis of some selected households in Kerala using LC-MS/MS, *Proc-4th International Conference on Frontiers of Mass Spectrometry (ICMS), December 04-07, 2019, Kottayam*
27. S.Sreedhanya, S. Ammu, C.T. Aravindakumar and Usha K. Aravind, Spectroscopic and theoretical

- methods to probe protein-ligand binding, *Proceedings of International conferences on photochemistry and sustainable energy (ICPSE), October 16-19, 2019, Alappuzha*
28. K.K Nejumal, Usha K. Aravind and C.T Aravindakumar, Photochemical degradation of pyrazinecarboxamide, *Proceedings of International conferences on photochemistry and sustainable energy (ICPSE), October 16-19, 2019, Alappuzha*
 29. Sajana Peter, K.K Nejumal, Usha K. Aravind and C.T Aravindakumar, Sunlight induced transformation of propranolol under natural environmental condition, *Proceedings of International conferences on photochemistry and sustainable energy (ICPSE), October 16-19, 2019, Alappuzha*
 30. M. Vishnu Sreejith, John Richard Thomas, Usha K. Aravind and C.T Aravindakumar, Application of confocal micro-Raman spectroscopy for identification of soot in airborne particulate matter, *Proceedings of International conferences on photochemistry and sustainable energy (ICPSE), October 16-19, 2019, Alappuzha*
 31. Reshmi John, T.A. Aparna, Jissy Mathew, C.T Aravindakumar and Usha K. Aravind, Binding of Cu (II) with serum albumins: spectroscopic insights, *Proceedings of International conferences on photochemistry and sustainable energy (ICPSE), October 16-19, 2019, Alappuzha*
 32. Shalumon C S, C.T. Aravindakumar, Usha K. "Remediation of rocket fuel contaminated ground water using polyelectrolyte multilayer membranes" in Proceedings of 8th International Groundwater Conference - Sustainable Management of Soil- Water Resources (IGWC-2019), October 21-24, 2019, Roorkee, Uttarakhand
 33. C.S. Shalumon , C. T. Aravindakumar, and Usha K. Aravind, Nanoskinned low pressure membranes for the removal of perchlorates from stimulated and natural well water samples, *Proc-Kerala Science congress ,Thalassery, 28-30, 2018*
 34. C.T. Aravindakumar, Redox degradation of emerging pollutants by photocatalysts and nanoparticles, *Proc-International Conference on Frontiers in Advanced Materials and their Applications, Jan.9, 2018, Trichy*
 35. M.T. Elias, C.Jisha, U.K. Aravind and C.T.Aravindakumar, Degradation of Ranitidine under UV-Photolysis, Sonolysis and UV-PDS and identification of its Transformation products, *Proc-. Third National Seminar on Advanced Oxidation Processes, Dec.17-19, 2017, Trichy*
 36. K.K. Nejumal, D. Dineep, U.K. Aravind and C.T. Aravindakumar, Sonochemical degradation of Bisphenol S in the presence of Persulfate in aqueous medium: Effect of operating parameters, *Proc-. Third National Seminar on Advanced Oxidation Processes, Dec.17-19, 2017, Trichy*
 37. Veena Vijayan, Suguna Yesodharan, C.T. Aravindakumar and U.K. Aravind, Sonochemical

Degradation of a Dye, Indigo carmine: Influence of various reaction parameters, *Proc.- Third National Seminar on Advanced Oxidation Processes*, Dec.17-19, 2017, Trichy

38. C.T. Aravindakumar, Green Chemistry and its Applications, National Seminar on Modern Trends in Chemistry, Dec.20, 2017, Mannargudi, Thanjavur
39. N. B. Shibin., Sunil Paul Mathew, G. Pramod, Usha K. Aravind and C. T. Aravindakumar, UV/H₂O₂ Oxidation of 6-Chloropurine, *Proc.- International Conference on Photochemistry and its Applications (ICPA 2017)*, Nov. 10-13, 2017, Kottayam, Kerala.
40. Shibin. N. B., Sunil Paul Mathew, G. Pramod, Usha K. Aravind and C. T. Aravindakumar, UV/H₂O₂ Oxidation of Hydroxynaphthoic Acids, *Proc.- International Conference on Photochemistry and its Applications (ICPA 2017)*, Nov. 10-13, 2017, Kottayam, Kerala.
41. Veena Vijayan, Suguna Yesodharan, C. T. Aravindakumar, Usha K. Aravind, E. P. Yesodharan, Photocatalytic Degradation of Indigo Carmine in Water Using ZnO, *Proc.- International Conference on Photochemistry and its Applications (ICPA 2017)*, Nov. 10-13, 2017, Kottayam, Kerala.
42. Shoniya Thomas, Manoj P. R., Sunil Paul Mathew, Usha K. Aravind and C. T. Aravindakumar, Oxidative Degradation of Benzenesulfonic Acid by Hydroxyl Radical: A Sonochemical and Pulse Radiolysis Study, *Proc.- International Conference on Photochemistry and its Applications (ICPA 2017)*, Nov. 10-13, 2017, Kottayam, Kerala.
43. D. Dineep, Usha K. Aravind, C.T. Aravindakumar, Photodepletion of Labetalol Induced by Sunlight, *Proc.- International Conference on Photochemistry and its Applications (ICPA 2017)*, Nov. 10-13, 2017, Kottayam, Kerala.
44. Misha T. Elias, Jisha C., Usha K. Aravind and C. T. Aravindakumar, UV-C Induced Degradation of Ranitidine and Structural Characterization of Transformation Products Using LC-Q-ToF-M

- Proc.- International Conference on Photochemistry and its Applications (ICPA 2017), Nov. 10-13, 2017, Kottayam, Kerala.
45. V. A. Sijumon, Usha K. Aravind and C. T. Aravindakumar, Enhanced Degradation of Metoprolol Using a Coupled System of Zero Valent Iron Nanoparticles and UV light, Proc.- International Conference on Photochemistry and its Applications (ICPA 2017), Nov. 10-13, 2017, Kottayam, Kerala.
 46. Manjumol Mathew, C. T. Aravindakumar and Usha K. Aravind, Multi-spectroscopic Analysis of Interaction of Bisphenol S (BPS) with Serum Albumin, Proc.- International Conference on Photochemistry and its Applications (ICPA 2017), Nov. 10-13, 2017, Kottayam, Kerala.
 47. Manjumol Mathew, C. T. Aravindakumar and Usha K. Aravind, The Interaction of Bisphenol F (BPF) with Proteins and its Effect on the Conformation, Proc.- International Conference on Photochemistry and its Applications (ICPA 2017), Nov. 10-13, 2017, Kottayam, Kerala.
 48. Manjumol Mathew, C. T. Aravindakumar and Usha K. Aravind, Protein Defolding in the Presence of Pharmaceuticals and its Metabolite: Fluorescence Studies, Proc.- International Conference on Photochemistry and its Applications (ICPA 2017), Nov. 10-13, 2017, Kottayam, Kerala.
 49. K. S. Sanu, C. S. Shalumon, Usha K. Aravind and C. T. Aravindakumar, Analysis on Spatial and Temporal Variation in Uranium Concentration in Drinking Water of Central Kerala by Using Laser Fluorimetry Technique, Proc.- International Conference on Photochemistry and its Applications (ICPA 2017), Nov. 10-13, 2017, Kottayam
 50. Jisha Chandran, Usha K. Aravind, Zhaoyu Zheng, Athula Attygalle, C. T. Aravindakumar, Investigation on the N- and O- protomer of p-amino salicylic acid using ion mobility and high resolution mass spectrometry: Revisiting the solvent effect in ESI, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
 51. Misha T. Elias, Jisha C, Usha K. Aravind, C. T. Aravindakumar, High resolution mass spectrometric identification of the transformation products formed by UV-photolysis and sonolysis of ranitidine, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
 52. Jisha Chandran, Usha K. Aravind, P. T. Nguyen, C. T. Aravindakumar, The solvent dependent ESI-collisionally induced dissociation of protonated nitenpyram, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
 53. D. Dineep, Usha K. Aravind, C. T. Aravindakumar, Mass spectrometric study of the environmental fate of labetalol under natural conditions, *Proc- Third International Conference on Frontiers of*

Mass Spectrometry (ICMS 2017), Dec. 11-14, Kottayam, Kerala.

54. K. K. Nejumal, D. Dineep, Usha K. Aravind, C. T. Aravindakumar, Determination of emerging contaminants in coastal areas of Ernakulam district using ultra performance liquid chromatography coupled with quadrupole time-of-flight mass spectrometry (LC-Q-ToF-MS), *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11- 14, Kottayam, Kerala.
55. V. A. Sijumon, Usha K. Aravind, C. T. Aravindakumar, Characterization of intermediates of atenolol after the combined treatment of zero valent iron nanoparticles and UV light by LC-Q- ToF mass spectrometry, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
56. V. A. Sijumon, Usha K. Aravind, C. T. Aravindakumar, LC-Q-ToF mass spectrometry for the characterization of degradation products of timolol after the combined treatment of zero valent iron nanoparticles and UV light, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
57. Jeeva M. Philip, Dineep, Usha K. Aravind, C. T. Aravindakumar, Screening of contaminants of emerging concern in source and treated drinking water of central Kerala: A high resolution mass spectrometric study, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
58. Shibin. N. B., Sunil Paul Mathew, G. Pramod, Usha K. Aravind, C. T. Aravindakumar, Mass spectrometric analysis of •OH induced oxidation products of 6CIP, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
59. Shibin. N. B., Sunil Paul Mathew, G. Pramod, Usha K. Aravind, C. T. Aravindakumar, Identification of preliminary products of •OH induced oxidation of hydroxynaphthoic acids: Mass spectrometric study, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
60. S. ReshmaRaveendran, D. Dineep, K. Sreedharan, Usha K. Aravind, C. T. Aravindakumar, Non-target analysis of emerging contaminants in Vembanadu lake using high resolution mass spectrometry, *Proc- Third International Conference on Frontiers of Mass Spectrometry (ICMS 2017)*, Dec. 11-14, Kottayam, Kerala.
61. Shoniya Thomas, Manoj P. Rayaroth, Sunil Paul M. M.,Usha K. Aravind, C. T. Aravindakumar, Identification of the intermediate products from the sonochemical degradation of benzenesulfonic acid by hydroxyl radical using LC-Q-ToF-MS, *Proc- Third International Conference on Frontiers*

of Mass Spectrometry (ICMS 2017), Dec. 11-14, Kottayam, Kerala.

62. Akhil Gopalakrishnan, Charuvila T. Aravindakumar, Usha K. Aravind, Periodic alternated deposition of weak/strong polyelectrolyte multilayers for surface nanoscale patterning, *Proc.- Fourth International Conference on Membranes (ICM 2017)*, Sep 30-Oct 3, Alppuzha
63. Jisha C., C. T. Aravindakumar, Usha K. Aravind, Internal Structure and Permeability of CHI/PSS Multilayers: An Investigation Using Lysine as a Probe Molecule, *Proc.- Fourth International Conference on Membranes (ICM 2017)*, Sep 30-Oct 3, Alppuzha
64. P. Nikhil Chandra, Charuvilla T. Aravindakumar, U. K. Aravind, Performance comparison of macromolecular assisted and immobilized low pressure membranes in the removal of toxic metals, *Proc.- Fourth International Conference on Membranes (ICM 2017)*, Sep 30-Oct 3, Alppuzha
65. C.S. Shalumon, C.T. Aravindakumar, U. K. Aravind, Transport studies of perchlorate through PEI/PSS multilayered membranes, *Proc.- Fourth International Conference on Membranes (ICM 2017)*, Sep 30-Oct 3, Alppuzha
66. Jain Maria Thomas, C. T. Aravindakumar, Usha K. Aravind, Monolayered polyelectrolyte membrane for the removal of beta blockers, *Proc.- Fourth International Conference on Membranes (ICM 2017)*, Sep 30-Oct 3, Alppuzha
67. Mary Lidiya Mathew, Soorya Balan, C.T. Aravindakumar , U. K. Aravind, CHI/PAA nanomembranes for the removal of textile dyes, *Proc.- Fourth International Conference on Membranes (ICM 2017)*, Sep 30-Oct 3, Alppuzha
68. Jain Maria Thomas, VishnuN.R., C. T. Aravindakumar, and Usha K. Aravind, CRM and XRPD Analysis of Ibuprofen Filtered Membrane Surface, *Proc.- Fourth International Conference on Membranes (ICM 2017)*, Sep 30-Oct 3, Alppuzha
69. Sreejith P.N., C.T. Aravindakumar, U. K. Aravind, Protein transport properties of three polyelectrolyte multilayer system, *Proc.- Fourth International Conference on Membranes (ICM 2017)*, Sep 30-Oct 3, Alppuzha
70. Manoj P. Rayaroth, Usha K. Aravind, C.T. Aravindakumar, *Photocatalytic Degradation of Lignocaine in Aqueous Suspension of TiO₂ Nanoparticle: Mechanism of Degradation and Mineralization*, *Proc.- Fourth International Conference on Advanced Oxidation Processes (AOP 2016)*, Dec. 17-20, 2016, Goa
71. D. Dineep, K.K. Nejumal, U.K. Aravind, C.T. Aravindakumar, *Photo-transformation of mefenamic acid in natural water: A Mass Spectrometric Study*, *Proc.- Fourth International Conference on Advanced Oxidation Processes (AOP 2016)*, Dec. 17-20, 2016, Goa

72. K.K. Nejumal, D. Dineep, P.R. Manoj, U.K. Aravind, C.T. Aravindakumar, *Sono and photochemical transformation of isoniazid in aqueous medium: Effect of inorganic and organic ions on degradation*, Proc.- Fourth International Conference on Advanced Oxidation Processes (AOP 2016), Dec. 17-20, 2016, Goa
73. K.K. Nejumal, D. Dineep, S. Ajai, U.K. Aravind, C.T. Aravindakumar, *Degradation of the beta blockers, propranolol by Ultrasound*, Proc.- Fourth International Conference on Advanced Oxidation Processes (AOP 2016), Dec. 17-20, 2016, Goa
74. Manoj P. Rayaroth, Usha K. Aravind, C.T. Aravindakumar, *Effect of Inorganic ions on the Sonochemical Degradation of Triphenylmethane Dyes*, Proc.- Fourth International Conference on Advanced Oxidation Processes (AOP 2016), Dec. 17-20, 2016, Goa
75. P.R. Manoj, Usha K. Aravind, C.T. Aravindakumar, *Impact of Inorganic Ions on the Sonochemical Degradation of Triphenylmethane Dyes*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
76. Jain Maria Thomas, N.R. Vishnu, C.T. Aravindakumar, Usha K. Aravind, *Polyelectrolyte Functional Bilayers for the Removal of Model Emerging Contaminants*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
77. M.K. Athullya, D. Dineep, Mary Lidiya Mathew, C.T. Aravindakumar, Usha K. Aravind, *Identification and Removal of Surfactants from Grey Water*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
78. D. Dineep, Usha K. Aravind, C.T. Aravindakumar, *Sunlight Induced Photo Transformation of Labetalol in Natural Conditions*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
79. K.K. Nejumal, D. Dineep, P.R. Manoj, Usha K. Aravind, C.T. Aravindakumar, *Sonochemical Degradation of Bisphenol S in Aqueous Medium*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
80. K.K. Nejumal, D. Dineep, Aneesh Danam, C.T. Aravindakumar, Usha K. Aravind, *Screening of Glyphosate and its Metabolite in Sediment Samples of a Selected Backwater Canal of Kottayam District, Kerala, Using UPLC-Q-ToF-MS*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
81. P.R. Manoj, Usha K. Aravind, C.T. Aravindakumar, *Effect of Ligands on the Activity of nFe/Fes- Activated Persulfate for the Oxidative Degradation of Water Pollutants*, Proc.- International

Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam

82. Jeeva M. Philip, D. Dineep, Usha K. Aravind, C.T Aravindakumar, *Occurrence of Emerging Contaminants in a Conventional Drinking Water Plan*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
83. C.S. Shalumon, Usha K. Aravind, C.T Aravindakumar, *Spatial Distribution and Toxicological profile of Uranium (U) in Drinking Water Sources of 4 Different Districts of Kerala, India*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
84. John Richard Thomas, Usha K. Aravind, C.T Aravindakumar, *Seasonal Variation of Chemical Composition of Rain Water in a Rural Location in Kerala, India*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
85. C.Jisha, Usha K. Aravind, P.T. Nguyen, C.T Aravindakumar, *Mass Spectrometric Fragmentation of Nitenpyram: The Complete Gas Phase Ion Chemistry and an Illustration of Solvent Effect on the ESI-MS*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
86. Misha T. Elias, C. Jisha, C.T Aravindakumar, Usha K. Aravind, *Multi Stage Mass Spectrometric Analysis of Histamine H2 receptor Antagonist, Cimetidine*, Proc.- International Conference on Water: From Pollution to Purification (ICW 2016), Dec.12-15, 2016, Kottayam
87. P. Nikhil Chandra, C. T Aravindakumar, Usha K. Aravind, *Design, Development, Characterisation and Application of Multilayered Biopolymer for Water Purification*, Proc.- National Seminar on Modern Trends in Chemistry and Polymer Chemistry, Nov. 24-26, 2016, Attingal
88. G. Akhil, C. T Aravindakumar, Usha K. A, *Effect of External Dopant in Controlling the Morphologies of CHI/PAA Multilayer*, Proc.- International Conference on Materials for the Millennium (MATCON), Jan.14-16, 2016, Kochi

89. C. Jisha, M. Muneer, C. T Aravindakumar, Usha K. A, *Confining Different Pressure Driven Separation Aspects into Single CHI/PSS Multilayered Membranes*, Proc.- International Conference on Materials for the Millennium (MATCON), Jan.14-16, 2016, Kochi
90. M. Manju, C. T Aravindakumar, Usha K. A, *Probing the Binding of Cytochrome C with Ovalbumin in Solution and in Immobilized State*, Proc.- International Conference on Materials for the Millennium (MATCON), Jan.14-16, 2016, Kochi
91. Jisha Chandran, Usha K. Aravind and C. T. Aravindakumar, *Probing the stable and intermediate free radical induced transformation products of pyrimidine nucleosides using LC- Q-ToF-MS: Direct observation of some missing links*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
92. Ashalakshmi C N, Jisha Chandran, Usha K Aravind, A.P. Thomas, C.T. Aravindakumar, *Evaluation of a method to determine pesticide residues from earthworms sub-lethally exposed to ethion using LC-Q-ToF-MS*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
93. Ashalakshmi C N, Jisha Chandran, Usha K Aravind^c, A.P. Thomas^c, C.T. Aravindakumar *Metabolite profiling of earthworm perionyx ceylanensis using HILIC-MS technique*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
94. D. Dineep, K.K. Nejumal, C. Jisha, U.K. Aravind, C.T. Aravindakumar, *Identification of Stable Photo Product in the Sunlight Induced Photolysis of Mefenamic acid in river water: A Mass Spectrometric Study*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
95. Jeeva M Philip, Mahsoona K.N., Dineep D., Usha K. Aravind, C.T. Aravindakumar, *A Preliminary Study on the Occurrence and Analysis of Emerging Contaminants in a Water Supply System in Central Kerala*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
96. Jisha Chandran, Vishnu N. R., Usha K. Aravind and C. T. Aravindakumar *ESI-MS/MS characterization and differentiation of the cross links of thymine formed by one electron oxidation with SO₄^{•-}*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
97. Jisha Chandran, Usha K. Aravind and C. T. Aravindakumar, *Biotransformation of BPS and BP3 in HepG2 cell line: A LC-Q-ToF –MS study*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam

98. P.R. Manoj, Usha K. Aravind and C.T. Aravindakumar, *Degradation Pathway of Lignocaine in Aqueous Medium by Photocatalysis: A Mass Spectrometric Analysis*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
99. P.R. Manoj, Usha K. Aravind and C.T. Aravindakumar, *Identification of various isomers formed during the oxidative degradation of benzenesulfonic acid by Energy Resolved Mass Spectrometry (ERMS)*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
100. K.K. Nejumal, Mahesh Mohan, K.P. Krishnan, D. Dineep, U.K. Aravind, C.T. Aravindakumar, *Non target analysis of Micro pollutants in the sediments of Kongsfjorden (Arctic) Using High Resolution Mass Spectrometry*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
101. K.K. Nejumal, D. Dineep, U.K. Aravind, C.T. Aravindakumar, *Scanning of Pharmaceutical Waste in Periyar River in Ernakulam Region Kerala by Using UPLC-Q-ToF-MS*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
102. V.A. Sijumon, U.K. Aravind and C.T. Aravindakumar, *Enhanced degradation of atenolol by the combined treatment of zero valent iron nano particle and UV light: Probing the mechanism by HRMS*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam
103. Subha Sasi, Dineep, Manoj P.R., Usha K. Aravind and C.T. Aravindakumar, *Identification and Quantification of Emerging Pollutants in a Backwater Stream in Kerala*, International Conference on Frontiers of Mass Spectrometry (ICMS2015), Dec.11-14, 2015, Kottayam

104. G. Akhil, C. T. Aravindakumar, and U. K. Aravind, Effect of buildup pH and salt concentration on PEI/PSS multilayers as proton exchange membranes, *Proc-International Conference on Membranes (ICM 2015), August 21-24, 2015, Kochi, p-38. (OP)*
106. Jain Maria Thomas, C.T. Aravindakumar, U. K. Aravind, Layer by layer assembled polyelectrolyte multilayer membranes for the removal of pharmaceuticals from water, *Proc- International Conference on Membranes (ICM 2015), August 21-24, 2015, Kochi, p-66*
107. Mary Lidiya Mathew, C.T. Aravindakumar, U. K. Aravind, Effect of pH and Deposition Salt on Transport Properties and Morphology of CHI/PAA Multilayer in Low Pressure Dye Filtration, *Proc-International Conference on Membranes (ICM 2015), August 21-24, 2015, Kochi, p-67*
108. Manjumol Mathew, Mary Lidiya Mathew, C.T. Aravindakumar, U. K. Aravind, Probing the Binding of Cytochrome C with Ovalbumin in Solution and Immobilized State, *Proc-International Conference on Membranes (ICM 2015), August 21-24, 2015, Kochi, p-70*
109. SubhaSasi, C.T. Aravindakumar, U. K. Aravind, Efficiency of polyamide membrane for the removal of an emerging contaminant- Chlorophene, *Proc-International Conference on Membranes (ICM 2015), August 21-24, 2015, Kochi, p-72*
110. Jisha C., Muneer Muhammed, C. T. Aravindakumar, and Usha K. Aravind, Transport studies of lysine through CHI/PSS multilayers: Influence of feed and deposition variables, *Proc- International Conference on Membranes (ICM 2015), August 21-24, 2015, Kochi, p-75.*
111. Shalumon C. S., Dineep D., C.T. Aravindakumar, U. K. Aravind, Perchlorate removal by multilayered QCS/ALG, *Proc-International Conference on Membranes (ICM 2015), August 21- 24, 2015, Kochi, p-77.*
112. V. J. Disha, G. Akhil, C. T. Aravindakumar, and Usha K. Aravind, pH Switchable Driving Forces on Polyelectrolyte Multilayer Buildup, *Proc-International Conference on Membranes (ICM 2015), August 21-24, 2015, Kochi, p-79.*
113. G. Akhil, T. R. Sreelakshmi, C. T. Aravindakumar and U. K. Aravind, PEI/PSS Multilayers with Wide-Range of Tunable Wettability, *Proc-International Conference on Membranes (ICM 2015), August 21-24, 2015, Kochi, p-80.*
114. M. S. Baburaj, U. K. Aravind, C. T. Aravindakumar, Treatment of textiles effluents using self-assembled multilayer membranes, *Proc- International Conference on Water: From Pollution to Purification, Jan.23-26, 2015, Kottayam, p-32*
115. P. R. Manoj, S. Subha, C. T. Aravindakumar, U. K. Aravind, Sonochemical degradation of Methylparaben, *Proc- International Conference on Water: From Pollution to Purification, Jan.23-*

26, 2015, Kottayam, p-52

116. G. Akhil, M.M. Lidiya, C. Jisha, W. Judith, W. Mark, C. T. Aravindakumar, U. K. Aravind, Sustainable polyelectrolyte multilayer membrane for the treatment of textile effluents, *Proc- International Conference on Water: From Pollution to Purification*, Jan.23-26, 2015, Kottayam, p-60
117. V. J. Disha, C. T. Aravindakumar, U. K. Aravind, Enrichment of sulphate and phosphate from laundry waste water using low pressure multilayer membranes, *Proc- International Conference on Water: From Pollution to Purification*, Jan.23-26, 2015, Kottayam, p-68
118. M. M. Lidiya, G. Akhil, C. Jisha, W. Judith, W. Mark, C. T. Aravindakumar, U. K. Aravind, Removal of reactive dyes from dye-salt solution using Chitosan nano-membranes, *Proc- International Conference on Water: From Pollution to Purification*, Jan.23-26, 2015, Kottayam, p-70
119. M.T. Jain, C. T. Aravindakumar, U. K. Aravind, Effect of PSS monolayer on removal of a model beta blocker from water, *Proc- International Conference on Water: From Pollution to Purification*, Jan.23-26, 2015, Kottayam, p-74
120. S. Subha, P.R. Manoj, K.K. Nejumal, U. K. Aravind, Y. Oren, C. T. Aravindakumar, Screening of an Emerging contaminant (Chlorophene) in a backwater stream in Kerala (India) and its treatment – a sonochemical approach, *Proc- International Conference on Water: From Pollution to Purification*, Jan.23-26, 2015, Kottayam, p-81
121. K. K. Nejumal, D. Dineep, U. K. Aravind, C. T. Aravindakumar, Identification of emerging pollutants in Periyar River in Kerala, *Proc- International Conference on Water: From Pollution to Purification*, Jan.23-26, 2015, Kottayam, p-91

122. N. B. Shibin, R. Sreekanth, G. Pramod, U. K. Aravind, C. T. Aravindakumar, Oxidation reaction of hydroxy naphthoic acids in aqueous medium, *Proc- International Conference on Water: From Pollution to Purification*, Jan.23-26, 2015, Kottayam, p-111
123. P. R. Manoj, U. K. Aravind, C. T. Aravindakumar, Photocatalytic degradation of Lignocaine in aqueous suspension of TiO₂, *Proc- International Conference on Water: From Pollution to Purification*, Jan.23-26, 2015, Kottayam, p-125
124. .G. Akhil, M.M. Lidiya, C. T. Aravindakumar, U. K. Aravind, High performance Chitosan/poly(acrylic acid) polyelectrolyte multilayer membrane for the treatment of textile effluents, *Proc- International conference on membrane based separations*, March 21-23, 2015, Baroda, p-93
125. C. Jisha, M. Muneer, U. K. Aravind, C. T. Aravindakumar, Transport studies of Lysine through CHI/PSS multilayers: Influence of feed and deposition variables, *Proc- International conference on membrane based separations*, March 21-23, 2015, Baroda, p-94
126. .M. S. Baburaj, C. T. Aravindakumar, U. K. Aravind, CHI/PSS multilayer membrane matrix for the delivery of Riboflavin, *Proc- International conference on membrane based separations*, March 21-23, 2015, Baroda, p-96
127. R. Sreekanth, M. M. Sunil paul, T. K. Manoj kumar, U. K. Aravind, C. T. Aravindakumar, Oxidative degradation of carbaryl in aqueous solutions, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-45
128. .K. K. Nejumal, P. R. Manoj, and Usha K. Aravind and C.T. Aravindakumar, Sonochemical Degradation of Para-Aminosalicylic acid in Aqueous Medium, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-62
129. .K. K. Nejumal, P. R. Manoj, and Usha K. Aravind and C.T. Aravindakumar, Oxidative Degradation of Para-aminosalicylic acid in Aqueous Medium, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-62
130. K. K. Nejumal, P.R. Manoj, and Usha K. Aravind and C.T. Aravindakumar, Sono and Photochemical Degradation Studies of Isoniazid in aqueous medium, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-63
131. Sijumon V. A., Usha K. Aravind and C.T.Aravindakumar, Degradation of beta blockers by Fenton like reaction initiated by zero valent iron nano particle and UV-C light, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-72
132. Sunil Paul M. Menachery, Usha K. Aravind, Gopinathan Pramod, Abhijit Saha, and Charuvila T. Aravindakumar, Hydroxyl Radical Induced Oxidation of Theophylline in Water: A Kinetic and

- Mechanistic Study, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-98.
133. P. R. Manoj, Usha K. Aravind, C.T. Aravindakumar, Photocatalytic Degradation of Lignocainein Aqueous Suspension of TiO₂, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-102
134. P. R. Manoj, V. Vidyanand, Usha K. Aravind, C.T. Aravindakumar, Ultrasound Assisted Mineralization of Cyanuric acid in Aqueous Medium: Combined Effect of [•]OH and Super Critical Water, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-102
135. P. R. Manoj, Usha K. Aravind, C.T. Aravindakumar, Sonochemical Degradation of Benzenesulfonic Acid, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-103
136. N. B. Shibin, R. Sreekanth, G. Pramod, Usha K. Aravind, and C. T. Aravindakumar Reaction of Hydroxyl and Sulphate Radicals with Hydroxy Naphthoic Acids, *Proc- Third International Conference on Advanced Oxidation Processes*, Sept.25-28, 2014, Munnar, p-111.
137. Akhil G., Jissy Mathew, Aravindakumar C. T., Aravind U. K.; Fabrication of Nano-Multilayer Matrix for Controlled Release of An Antimicrobial Protein, *Proceedings of the 23rd Swadeshi Science Congress (November 6-8, 2013), Kottayam*, p 474-477
138. Disha V. J., Aravindakumar C. T., Aravind U. K.; Recovery of phosphate from Laundry Waste Using polyelectrolyte Multilayer Membrane, *Proceedings of the 23rd Swadeshi Science Congress (November 6-8, 2013), Kottayam*, p 436-439
139. Disha V.J., Aravindakumar C. T., and Aravind U. K. : High flux low pressure multilayer membranes for selective phosphate recovery: *Proceedings of the second international conference on membranes* (October 3-6, 2013), Kottayam, p 92.
140. Disha V.J., Aravindakumar C. T., and Aravind U. K. : Interplay of feed and make up pH on the transport of Cl⁻/H₂PO₄⁻ through PEI/PSS multilayers.: *Proceedings of the second international conference on membranes* (October 3-6, 2013), Kottayam, p 93.
141. Disha V.J., Aravindakumar C. T., and Aravind U. K. : Phosphate recovery by high flux low pressure multilayer membranes: *Langmuir* (2012) 28, 12744- 1752.
142. Disha V.J., Aravindakumar C. T., and Aravind U. K. : Recovery of phosphate using multilayer Membranes: A path to green fertilizer: *Proceedings of the National seminar on sustainable development – resend trends in meeting the challenges*, (January 20-21, 2012) Kottayam.

143. Disha V.J., Aravindakumar C. T., and Aravind U. K. : Sustainable phosphorous initiative using nanomembranes: *Proceedings of the Second international conference on nanomaterials-synthesis, characterization and applications* (January12-15, 2012), Kottayam.
144. Disha V.J., Aravindakumar C. T., and Aravind U. K.: Recovery of phosphate using PDADMAC/PSS multilayer Membranes: A path to green fertilizer, *Proceedings of the National seminar on green chemistry- The ultimate tool for pollution control*, (February 14-15, 2012), Changanacherry.
145. Divyalakshmi T.V., Aravind U. K., and Aravindakumar C. T. : Lysosyme immobilized polyelectrolyte multilayer film : A Biosensor for Mercuric Chloride. *Proceedings of 24th Kerala Science Congress (January 29-31 2012)*, p 185.
146. Divyalakshmi T.V., Aravindakumar C. T., and Aravind U. K. : Hydrophilicity of CHI PSS nanolayers: An ATR-FTIR study. *Proceedings of the International conference on Nano materials, Synthesis, characterization and application* (2012), p165.
147. T.V., Aravindakumar C. T., and Aravind U. K. : Interaction of glucose with protein immobilized nanolayers: a fluorescence quenching study. *Proceedings of the second international conference on membranes (October 4-6,2013)*
148. Divyalakshmi T.V., Aravindakumar C. T., and Aravind U. K. : Protein immobilized polyelectrolyte multilayers : A spectroscopic study. *Second International conference on membranes (October 4-6,2013)*
149. Divyalakshmi T.V., Aravindakumar C. T., and Aravind U. K. : Spectroscopic investigation on the interaction of hydrogen peroxide with ovalbumin. *Proceedings of the second international conference on membranes (October 4-6,2013)*
150. Divyalakshmi T.V., Aravindakumar C. T., and Aravind U. K. : Development of new drug delivery vehicle using polyelectrolyte multilayered membranes. *Proceedings of National Seminar on Up trends in Chemistry, (March 15- 16, 2012), OP-5, page 33*
151. Jain Maria Thomas, Aravindakumar C. T., and Aravind U. K.; Lysozyme Loading Studies Using Different Polyelectrolyte Microcapsules, *Proceedings of the 23rd Swadeshi Science Congress (November 6-8, 2013), Kottayam*, p 255-259
152. Jain Maria Thomas, C. T. Aravindakumar, and U. K. Aravind: Lysozyme loaded CHI/PMA polyelectrolyte microcapsule:*Proceedings of the international conference on membranes - ICM 2013 (October 3-6, 2013), Kottayam*, p 94.
153. Jisha C, Usha K. Aravind, C. T Aravindakumar: Ultrasonically induced transformations of 2'-

- deoxythymidine in aqueous solution: a mass spectroscopic study: *Proceedings of International Conference on Frontiers of Mass Spectrometry* (September 6-9, 2013), Kottayam, p 89-90.
154. Jisha C., Aravind U. K., Aravindakumar C. T.; Ultrasound Induced Chemical Transformation of DNA Constituent, *Proceedings of the 23rd Swadeshi Science Congress (November 6-8, 2013)*, Kottayam, p 283-286
155. Jisha Chandran, Subha Sasi, Akhil G, U. K. Aravind, C. T. Aravindakumar: Different states of water in chitosan based polyelectrolyte multilayer membranes: *Proceedings of 2nd International Conference on Membranes* (October 3-6, 2013), Kottayam, p 98-99.
156. Manjumol Mathew, Aravindakumar C. T., Aravind U. K.; Possible Impacts of Interaction of Human Serum Albumin (HAS) with a Model pollutant, *Proceedings of the 23rd Swadeshi Science Congress (November 6-8, 2013)*, Kottayam, p 287-290
157. Manjumol Mathew, M. S. Baburaj, S. Sreedhanya, C. T. Aravindakumar, U. K. Aravind: Single step purification of riboflavin: *Proceedings of the Second International Conference on Membranes - ICM 2013* (October 3-6, 2013), Kottayam, p-104.
158. Mary L. M., Akhil G., Aravindakumar C. T., Aravind U. K.; Nanostructured Membranes for Dye/Salt Separation in Textile Effluent, *Proceedings of the 23rd Swadeshi Science Congress (November 6-8, 2013)*, Kottayam, p 389-392.
159. Shibin N. B., Sreekanth R., Usha .K. Aravind, Sarkar S.K. and C.T. Aravindakumar . Oxidation reactions of glucosamine naphthalene acetic acid and naphthalene acetic acid: A pulse radiolysis study, *Proc:-National Symposium on Radiation and Photochemistry (NSRP-2013)*, North Eastern Hill University, Shillong, March 20-22, 2013.
160. Shibin N.B., Aravind U.K., Pramod G. and C.T. Aravindakumar. Oxidation reaction of Glucosamine Naphthalene Acetic Acid by Pulse Radiolysis, *Proc:- National Seminar on Uptrends in Chemical Sciences and Technology (UPCHEM- 2012)*, NSS Hindu college, Changanssery, Kottayam, March 15-16, 2012, pp-3.
161. Shibin N.B., Sarkar S.K. and C.T. Aravindakumar. Pulse radiolysis study of glucosamine naphthalene acetic acid, *Proc:-Trombay Symposium on Radiation and Photochemistry (TSRP-2012)*, Bhabha Atomic Research Centre, Mumbai, January 4-7, 2012, pp-27.
162. Sijumon V. A., Aravind U. K., Aravindakumar C. T.; Photochemical Degradation of Lignin and Tannin and its Implications in Paper Mill Effluents, *Proceedings of the 23rd Swadeshi Science Congress (November 6-8, 2013)*, Kottayam, p 314-317
163. Sreedhanya S., Aravindakumar C. T., Aravind U. K.; Binding of a Diuretic Drug Triamterene to

Serum Albumin: A Multi Spectroscopic Study, *Proceedings of the 23rd Swadeshi Science Congress (November 6-8, 2013), Kottaya*, p 247-250

164. Sunil P. M. Mathew, Usha K Aravind, Pramod G. and Aravindakumar C. T., Oxidative Degradation of Fensulfothion by Hydroxyl Radical in Aqueous Medium, *Proc- International Conference on Advanced Oxidation Processes*, Oct.5-8, 2012, Kottayam, p-62
165. Sunil P. M. Mathew, C.T. Aravindakumar, Usha K Aravind, Oxidative Transformation of Theophylline by Hydroxyl Radical in Aqueous Medium: A Pulse Radiolysis Study, *Proc- International Conference on Advanced Oxidation Processes*, Oct.5-8, 2012, Kottayam, p-82
166. Rani Varghese, C .T. Aravindakumar, Usha K Aravind, Direct photolysis of phenol: A Comparison with its Photolytic Degradation using Ferric Perchlorate, *Proc- International Conference on Advanced Oxidation Processes*, Oct.5-8, 2012, Kottayam, p-105
167. Shoniya Thomas, C.T. Aravindakumar, Usha K Aravind, Oxidative degradation of Acid Red 1 by Hydroxyl Radicals, *Proc- International Conference on Advanced Oxidation Processes*, Oct.5-8, 2012, Kottayam, p-116
168. P. R. Manoj, C.T. Aravindakumar, Usha K Aravind, Sonochemical Degradation of Coomassie Brilliant Blue, *Proc- International Conference on Advanced Oxidation Processes*, Oct.5-8, 2012, Kottayam, p-122
169. Shoniya Thomas, C.T. Aravindakumar, Usha K Aravind, Combined effect of Zero valent Iron Nanoparticles with Sonolysis on Decolouration and mineralization of Acid Red 1, *Proc- International Conference on Advanced Oxidation Processes*, Oct.5-8, 2012, Kottayam, p-236
170. V. A Sijumon, C.T. Aravindakumar, Usha K Aravind, Photochemical and Fenton treatment of paper mill and Textile effluents for the removal of organic water pollutants, *Proc- International Conference on Advanced Oxidation Processes*, Oct.5-8, 2012, Kottayam, p-243
171. M. M. Sunil Paul, K. Usha and C. T. Aravindakumar; Photochemical degradation of fensulfothion in aqueous medium. *Proceedings of the Trombay Symposium on Radiation and Photochemistry* (January 5-8, 2012), Mumbai, p 289-290.
172. Sunil P. M. Mathew, Usha K. Aravind and C. T. Aravindakumar; Photochemical degradation of fensulfothion in aqueous medium. *Proceedings of the 24th Kerala Science Congress 2012* (January 29-31, 2012), Kottayam, p 521-523.

173. Disha V.J, C. T. Aravindakumar, and Usha K. Aravind (2012), Recovery of phosphate using PDADMAC/PSS multilayer Membranes: A path to green fertilizer, *Proc.-National seminar on green chemistry- The ultimate tool for pollution control, February 14-15*
174. Disha V.J, C. T. Aravindakumar, and Usha K. Aravind (2012), Sustainable phosphorous initiative using nanomembranes, *Proc.-Second international conference on nanomaterials-synthesis, characterization and applications. Jan 12-15*
175. Disha V.J, C. T. Aravindakumar, and Usha K. Aravind (2012), Recovery of phosphate using multilayer Membranes: A path to green fertilizer, *National seminar on sustainable development– recent trends in meeting the challenges, January 20-21*
176. Sunil P. M. Mathew, Usha K. Aravind, G. Pramod and C. T. Aravindakumar; Degradation of fensulfothion in aqueous medium by advanced oxidation processes. *Proceedings of The National Seminar on Uptrends in Chemistry* (March 15-16, 2012), Changanachery, p 91-93.
177. Siju Abraham, Usha K., C.T. Aravindakumar "Photochemical and Fenton treatment of paper mill effluent for the removal of organic water pollutants" *Proc.- National seminar on sustainable development: Recent trends in meeting the challenges (NSSD-2012)*, Kottayam, January 20-21, 2012.
178. S. Sreedhanya, Jissy Mathew, C. T. Aravindakumar, and Usha K. Aravind (2012), Surface modified Microfiltration membranes for the Separation of Amino Acids. *Proc- International conference on Nano materials, Synthesis, characterization and application, Kottayam*
179. Sreedhanya S., Usha K. Aravind and C. T. Aravindakumar (2012) Sulphasalazine binds Human Serum Albumin. *Proceedings of 24th Kerala Science Congress. 04-05, page 272*
- 180..S. Sreedhanyaa, Usha K. Aravind and C. T. Aravindakumar (2012), Monitoring Protein Conformational changes: A Spectroscopic Approach. *Proceedings of National Seminar on Uptrends in Chemistry, Changanassery, OP-9, page 53*
181. Sreedhanya S., Jissy Mathew, Usha K. Aravind and C. T. Aravindakumar (2012), Recovery of amino acids using polyelectrolyte multilayer membranes: A sustainable approach. *Proceedings of National Seminar on Green Chemistry-The Ultimate tool for pollution control Changanassery*
182. Siju Abraham, Usha K., C.T. Aravindakumar,"Paper Effluent: Photochemical and Fenton treatment

for the reduction of TOC and COD” Proc.- National seminar on green chemistry-The ultimate tool for pollution control, Changanacherry, February 14-15, 2012

- 183.**T.V. Divyalakshmi, C. T. Aravindakumar, and Usha K. Aravind (2012), Hydrophilicity of CHI PSS nanolayers: An ATR-FTIR study. Proc.- *International conference on Nano materials, Synthesis, characterization and application. Kottayam, Jan 12-15*
- 184.**T.V Divyalakshmi, Usha K. Aravind, C. T. Aravindakumar (2012),Lysosyme immobilized polyelectrolyte multilayer film : A Biosensor for Mercuric Chloride. *Proceedings of 24th Kerala Science Congress, 29-31 Jan 2012. 04-05, Kottayam, p-185*
- 185.**T.V Divyalakshmi, Usha K. Aravind , C. T. Aravindakumar (2012) Development of new drug delivery vehicle using polyelectrolyte multilayered membranes. *Proceedings of National Seminar on Uptrends in Chemistry, March 15-16, Changanasserry, p- 33*
- 186.**T.V Divyalakshmi, C.T. Aravinda Kumar, Usha. K.Aravind (2012), Hydrophilic CHI / PSS nanolayers: For Fuel Cell Applications. *Proceedings of National Seminar on Green Chemistry- The Ultimate tool for pollution control. February 14-15,Kottayam*
- 187.**M. S. Baburaj, Usha K Aravind and C. T. Aravindakumar, Interaction of Model Effluents with Selfassembled Mmembranes. *Proc.-International conference on membranes: Environmental and biological applications. 2011, P-35, Page 79.*
- 188.**M. S. Baburaj, Usha K Aravind and C. T. Aravindakumar, Transport of ions through CHI/PSS multilayers. *Proc.- International conference on membranes: Environmental and biological applications, 2011, P-36, Page 80.*
- 189.**Disha V. J, C. T. Aravindakumar, A.P. Thomas and Usha K.Aravind (2011), Transport properties of phosphate through PDADMAC/PSS multilayers, Proc.-*International conference on membranes: Environmental and biological applications -2011 Sep 16-19, p-57.*

- 190.** P. Nikhil Chandra, M. S. Baburaj, Usha K Aravind and C. T. Aravindakumar, Removal of herbicides from water by Humic acid-chitosan multilayer system. *Proc. International conference on membranes: Environmental and biological applications*, 2011, P-48, Page 87.
- 191.** T.V Divyalakshmi, M. S. Baburaj, Usha K Aravind and C. T. Aravindakumar, ATR-FTIR studies of CHI/PSS multilayer. *Proc.-International conference on membranes: Environmental and biological applications*, 2011, P-45, Page 85.
- 192.** M. S. Baburaj, Usha K Aravind and C. T. Aravindakumar, Riboflavin loaded CHI/PSS multilayers, its interaction with BSA and KI. *Proc.- International conference on membranes: Environmental and biological applications*, 2011, YI-4, Page 46.
- 193.** T.V Divyalakshmi, C. T. Aravindakumar and Usha K. Aravind (2011), FTIR and TGA studies of the dehydration of CHI/PSS multilayer. *International conference on membranes: Environmental and biological applications-2011 Sep 16-19, 2011, page 85*.
- 194.** T.V Divyalakshmi, C. T. Aravindakumar and Usha K. Aravind (2011), Lysozyme immobilized polyelectrolyte multilayered membrane : A Spectroscopic approach. *International conference on membranes: Environmental and biological applications -2011 Sep 16-19, 2011, page 86*
- 195.** T.V Divyalakshmi, U. K. Aravind, C. T. Aravindakumar (2011), Membranes: Science and Applications. *Proc.-National Seminar on New Frontiers in Chemical science and Technology, Mar18-19, 2011*
- 196.** Jissy Mathew, S. Sreedhanya, C. T. Aravindakumar and Usha K. Aravind (2011), Switchable BSA resistant and adhesive CHI/PSS multilayer membranes. *Proc.-International conference on membranes: Environmental and biological applications*, Sept. Kottayam,
- 197.** M. S. Baburaj, C. T. Aravindakumar and Usha K. Aravind, Treatment of Model Textile effluents with PAA/CHI and PAA/PEI Nanomembranes. *Proc.- International conference on Nanomaterials, Synthesis, characterization and application*, 2012, IL-16, Page 26.
- 198.** M. S. Baburaj, C.T. Aravindakumar and Usha K. Aravind, Water Softening applications of Chitosan based Nanomembranes. *Proc.- International conference on Nanomaterials Synthesis, characterization and application, 2012, P-56, Page 138*.
- 199.** Jissy Mathew, S. Sreedhanya, C. T. Aravindakumar and Usha K. Aravind (2011), Transport Studies of Amino Acids through Chitosan/ Polystyrene Sulfonate Multilayer Membrane. *Proc.- International conference on membranes: Environmental and biological applications*, Sept., Kottayam,
- 200.** S. Sreedhanya, U. K. Aravind and C. T. Aravindakumar (2010), Fluorescence Studies on the

Interaction of Ovalbumin and Sulphasalazine, *Proceedings of APSRC- Trombay Symposium on Radiation and Photochemistry 2010*, PC-139, p-440

- 201.**M.S. Baburaj, C.T. Aravindakumar, and U.K. Aravind, Treatment of textile effluents using composite membrane and free radicals, *Proceedings of the National Symposium on Radiation and Photochemistry Nainital* , March 12-14, 2009, p-RC-9
- 202.**S. Thomas, U.K. Aravind and C.T. Aravindakumar, Photo-Fenton degradation studies of orange G in aqueous solution and its loading in self-assembled polyelectrolytes membranes, *Proceedings of the National Symposium on Radiation and Photochemistry Nainital* , March 12-14, 2009, p- PC-32
- 203.**M.S. Baburaj, Usha.K. Aravind, and C.T. Aravindakumar, Removal of dye from textile effluents using composite membrane and free radicals, *Proceeding of the International Symposium on Nano Material*, Kottayam, April 2009, p-284
- 204.**T.V. Divyalekshmi, Usha K. Aravind, C.T. Aravindakumar, Sensing ability of ovalbumin immobilized CHI/TSS multi layer membranes, *Proc- International Symposium on Nano Material*, Kottayam, April 2009, p-285
- 205.**T.V Divyalakshmi, U. K. Aravind, C. T. Aravindakumar (2009), Protein immobilized multilayered membrane for sensing Applications. *Proc.-International conference on nanostructured materials and nonocomposites*
- 206.**M.S. Baburaj, Usha.K. Aravind, C.T. Aravindakumar, Treatment of textile effluents using composite membrane, *Proc- International Conference on Polymer Blends and Composite*, Sept. 2009, p-251

- 207.**Sreedhanya S. and C. T. Aravindakumar (2008), Photochemical Studies of 5,6-diamino-1,3-dimethyl uracil hydrate, *Proceeding of the National Seminar on Recent Trends in Chemistry 2008*, Kottayam, p – 51
- 208.**T.V Divyalakshmi, C.T.Aravindakumar (2008, Ovalbumin immobilized CHI/PSS multilayered membrane for sensing studies. *Proceeding of the National Seminar on Recent Trends in Chemistry 2008, Nov. 6-7, 2008, P-10*, p – 52.
- 209.**V.M. Manoj, H.Mohan, U.K. Aravind and C.T.Aravindakumar, Reduction Reactions of S-Nitrosothiols: Radiation chemical study, *Proc. International Conference on Frontiers of Radiation and Photochemistry (PHOTORADCHEM-2007)*, Kottayam, Feb.8-11, 2007, p-83
- 210.**P. Manoj, K. P. Prasanthkumar,V. M. Manoj, Usha K. Aravind,T. K. Manojkumar and C. T. Aravindakumar, Laser Flash Photolysis of Substituted Triazines in Aqueous Medium, *Proc. International Conference on Frontiers of Radiation and Photochemistry (PHOTORADCHEM-2007)*, Kottayam, Feb.8-11, 2007, p-171
- 211.**J. Mathew, U. K. Aravind and C.T. Aravindakumar, Ultrafiltration of Bovine Serum Albumin through Chitosan/ PSS Multilayer Membranes, *Proc. International symposium on advances in organic chemistry*, Kottayam, Jan. 2006, p-250
- 212.**M. S. Baburaj, C. T. Aravindakumar and U.K. Aravind, Development of Cation Selective Ultrathin Membranes Based on PEI/PMA, *Proc. International symposium on advances in organic chemistry*, Kottayam, Jan. 2006, p-249
- 213.**M.S.Baburaj, J. Mathew, U.K.Aravind and C.T.Aravindakumar, (2005): Polyelectrolyte multilayer membranes for selective ion transport. *Proceedings of the International conference on advances in polymer blends ,composites, IPNS and gels:macro to nano composites*, Kottayam, India March 2005, PA-3, p-142.
- 214.**U. K. Aravind, R. Vargheese, A.P.Thomas and C.T.Aravindakumar (2004): Photo-production of Hydroxyl radicals from hydrogen peroxide and Fe(III)-hydroxy complexes and their model reactions in clouds, fog and rain. *Proc. of the XIII National Space Science Symposium (NSSS- 2004)*, Kottayam, India, Feb 2004, p-60, TGC-37
- 215.**R. Vargheese,K. vandana, U. k Aravind and C.T.Aravindakumar (2004): Photo-Chemical degradation of phenol in presence of ferric perchlorate , A comparison with other photochemical methods. *Proc. of the TSRP, Jan 2004*), Trombay, Vol 2.
- 216.**J. Laven, Usha K. Aravind,and Van der Linde, The Chemical Drying Process in Alkyd Emulsion Paint Films *Proc. International Conference in organic Coatings*, July 2003, Athens, Greece.

217. Usha.k Aravind, Jozua Laven and Rob van der Linde, Transport Phenomena in Drying Alkyd Emulsion Paint , *Proc. Lunteren meeting* 12-13, 2001, The Netherlands
218. Film formation of coating from alkyd-emulsion based paint:cross-linking by and diffusion of oxygen, Usha k aravind, Jos Laven, and Rob van der Linde “Material research” May 8-9, 2001, Veldhoven, Netherlands.
219. Film formation of alkyd emulsion based paints Usha k aravind, Jos Laven, and Rob van der Linde, Fourth annual coating symposium, May 11, 2001 , Eindhoven, The Netherlands
220. Film formation of alkyd emulsion based paints Usha k aravind, Jos Laven, and Rob van der Linde, Fifth annual coating symposium, May 17, 2002, Eindhoven, The Netherlands
221. Chemical and Physical drying of alkyd emulsion films, Usha k aravind, Jos Laven, and Rob van der Linde , Materials research, 27 th May , 2002 Veldhoven, Netherlands.
222. AC conductivity and dielectric relaxation in Nylon-666-g-Maleic acid polyelectrolyte” K.Usha and V.N.S.Pillai, 10 th international conference on Solid State Ionics, 3-8 dec 1995, Singapore.