

Name : Dr. J. MADHAVAN

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ACADEMIC/RESEARCH PROFILE

At Present	Associate Professor Dept. of Chemistry, Thiruvalluvar University, Vellore-632 115	Highly Commended	
Postdoctoral Fellow	School of Chemistry, University of Melbourne Parkville Campus, Australia		
Ph. D. Chemistry	Department of Energy, University of Madras, Chennai-600036, India <u>Thesis Title:</u> Advanced Oxidation Processes (Heterogeneous and homogeneous photocatalytic degradation of textile dyes). Supervisor: Prof. P. Maruthamuthu		
M.Sc. 1997-1999	General Chemistry Department of Chemistry, Presidency College, Chennai, India – 600 005		First Class
B.Sc. General Chemistry 1994-1997	Department of Chemistry, Pachaiyappa's college for Men, Kanchipuram, India – 631 503.		First Class

RESEARCH AREA/SPECIALIZATION(S):

- Synthesis of semiconductor nanomaterials in dye sensitized solar cells by sonochemical, sol-gel, hydrothermal processes.
- Nanomaterials for Hydrogen evolution and bio/chemical sensor applications

- Polymer electrolytes for dye sensitized solar cells.
- Degradation of aqueous organic pollutants using heterogeneous photocatalysts.
- Fenton, photo-Fenton reactions and modified photo-Fenton reagents for advanced oxidative treatment of organic pollutants.
- Sonophotocatalytic degradation of aqueous organic pollutants such as dyes, drugs, pesticides, etc.

AWARDS AND GRANTS

1. CSIR, India (Senior Research Fellowship), May 2005.
2. DST-Young Scientist award (Registration No: CS 154-2011 dated December 27, 2011).
3. Highly cited author award from Royal Society of Chemistry, London for the article published in *Physical Chemistry Chemical Physics*.
Paper title "*Highly active MoS₂/Carbon electrocatalysts for the hydrogen evolution reaction-Insight into the effect of the internal resistance and roughness factor on the Tafel slope*".
4. Certificate of Appreciation awarded as one of the top 5% of highly cited authors in Royal Society of Chemistry journals, 2019.
5. Guest editor for the Special Issue: Surface tuning and Interface Engineering of Advanced Materials for Detection and Removal of Toxic Pollutants from Environments - to the prestigious journal "Environmental Research" (IF 5.715, Elsevier).
6. Listed in the Top 2 % Scientists list under "**Energy**" category released by Stanford University.

PATENT

1. P. Maruthamuthu, B. Muthuraaman, S. Ganesan, S. Anandan, S. Murugesan, **J. Madhavan**, S. Austin Suthanthiraraj. "*An improved solid-state polymer composition, a process for its preparation and an improved dye-sensitized solar cell*" Patent No. 266300 (2728/CHE/2007) dated 22.01.2007 Granted on dated 23.04.2015.

PROJECTS SACNTIONED/SUBMITTED

S.No.	Title of the project	Funding agency	Amount sanctioned	Status
1.	Solid-state dye sensitized solar cells: Fabrication, characterization and photoelectrochemical studies of nanocrystalline dye sensitized solar cells using polymer electrolytes.	DST-SERB Fast track proposal for Young Scientists. (Order no. SR/FT/CS-142/2011 dated 01.08.2012). (PI)	25.55 Lakhs.	Completed
2.	Solar energy conversion into electricity using blended polymer electrolytes for nanocrystalline dye-sensitized solar cells.	DAE-BRNS project BRNS (Order No. 2013/37P/1/BRNS/10 dated 01/04/2013). (PI)	20.12 Lakhs	Completed
3.	Biological synthesis and development of nano gold PTP1B inhibitors	BT/508/NE/TBP/2013 Dated 12/12/2014 (Co-PI)	56.40 Lakhs	Completed
4.	Sensing of Toxic ions in Aqueous media by Active Fluorescent Probes for Chemosensor Applications	PDF/2017/001478 dated 08-11-2017 (Mentor for NPDF) 2017-19	19.20 lakhs	Completed

MEMBERSHIP(S) IN PROFESSIONAL BODIES

Life Member in Indian Society for Radiation and Photochemical Sciences (ISRAPS), BARC, Mumbai.

PROJECT CONSULTANCY

- 1. International project Consultant** for the project entitled “Designining, evaluating and improving solar cells based on conjugated polymer, perovskite organo-metal trihalide” sanctioned for King Saud University, Saudi Arabia.

STUDENTS GUIDED

Degree	Completed	On Going
Ph.D	6	On-going-4
M.Phil	14	-
M.Sc	14+3	-

GOOGLE SCHOLAR CITATION INDEX

Citations	6233
h-index	46
i10-index	107

Ph.D Students Details

S. No	Name of the candidate	Title	Year of completion	Present Position
1.	Dr. R.A. Senthil	Optimization of the performance characteristics of organic plasticizer doped polymer electrolytes for nanocrystalline dye sensitized solar cells	20 th Mar 2017	Postdoctoral fellow, Beijing University of Chemical Technology (BUCT), China
2.	Dr. J. Theerthagiri	Synthesis, characterization and application of platinum free counter electrode materials for dye-sensitized solar cells	24 th Mar 2017	Scientist-C, Sathyabama University, Chennai
3.	Dr. A. Malathi	Synthesis, characterization of visible light active photocatalysts and their application in water treatment	17 th Sep 2018	Postdoctoral fellow, Chulalongkorn Univerrsiy, Thailand
4.	K. Thiagarajan	Synthesis and characterization of electrode materials for Supercapacitor applications	19 th July 2019	Guest Lecturer, Govt. Thirumagal Mills College, Gudiyattam.
5.	A. Priya	Synthesis, characterization and application of photocatalysts for water treatment (photocatalytic degradation of pollutants)	14 th Oct 2019	Assistant Professor DLR College, Arani.
6.	K. Premnath	Synthesis, characterization and application of platinum free electrocatalysts for hydrogen evolution reaction	19 th April 2021	Postdoctoral fellow, Chulalongkorn Univerrsiy, Thailand

M.Phil Students Details

S.No	Name of the candidate	Title	Year of completion
1.	Ms.T.Rekha	A studies on effect of plasticizer addition to polyvinylene difluoride copolymer electrolyte	2013
2.	Mrs.N.Kavitha	Synthesis, characterization of visible light active photocatalyst and its application in water treatment	2013
3.	Mrs.A.Shoba	Preparation and Characterization of phenothiazinedoped blended polymer electrolytes	2013
4.	Mr.V.Elumalai	Synthesis and characterization of PANI-CoS counter electrode for solar cell applications	2014
5.	Mrs.R.Kavitha	Preparation, characterization and optimization of phenothiazine doped poly(vinylidene fluoride) polymer electrolytes	2014
6.	Mrs.E.Rekalakshmi	Synthesis, characterization of visible light active CuS doped WO ₃ photocatalyst and its application in water treatment	2014
7.	Ms.D. Pushparani	Synthesis, optical properties of Cd _{1-x} Zn _x S quantum dots and its photocatalytic activity	2015
8.	Mrs. L.S. Amudha	Synthesis and characterization of α -Fe ₂ O ₃ / rased e oxide nanocomposites for electrochemical sensor applications	2016
9.	Ms. R. Sudha	Growth of FeSe ₂ nanorods on grapheme oxide nanosheets as advanced electrocatalyst for hydrogen evolution reactions	2016
10.	N. Madhu	Synthesis and Characterization of amino acids stabilized gold nanoparticles and its colorimetric detection of heavy metal ions	2017
11.	S. Sathyaprabha	Preparation and characterization of rased e oxide incorporated polyethylene oxide based polymer gel electrolytes	2018
12.	K. Balaji	Synthesis, characterization and application of FeNiSe ₂ /MWCNTs electrocatalysts for hydrogen evolution reaction	2019
13.	J. Lekha	Synthesis of Ni ₃ V ₂ O ₈ /SWCNT nanocomposite as an efficient electrode material for Supercapacitor applications	2020
14.	S. Jeba Shajin	Synthesis, Characterization and application of Ni ₃ S ₂ /N-doped carbon Electrocatalyst for hydrogen evolution reaction in acidic Medium	2020

TECHNICAL SKILLS

Transmission Electron Microscope (TEM), Scanning Electron Microscopy (SEM), High Performance Liquid Chromatography (HPLC), HPLC-Mass Spectrometry (HPLC-MS), TOC analyzer, Thermogravimetric analysis (TGA), UV-vis spectrophotometer, FT-IR spectrophotometer.

STAFF DEVELOPMENT PROGRAMMES

1. Attended the staff development programme for the “**Early Carrier Researchers**” organized by the University of Melbourne Research Office, during 22-24 September 2008.
2. Completed the course on the “**Workplace Discrimination and Harassment-Legal Compliance**” conducted by the Human resources office, University of Melbourne.
3. Attended the HPLC/MS training organized by Agilent technologies Inc.
4. Attended the Orientation course conducted by the UGC-Academic Staff College, University of Madras during 22.05.2013 to 18.06.2013.
5. Attended the Refresher course conducted by the UGC-Academic Staff College, University of Madras during 04.09.2014 to 24.09.2014.
6. Attended the SAKSHAM-IT Champion Training Program organized by MICROSOFT during 5-10, Feb 2015 held at Thiruvalluvar University, Vellore.
7. Attended the UGC-Refresher course conducted in “Material Science” conducted Bharathidasan University, Tiruchirapalli during 02.11.2016 to 22.11.2016.
8. Attended a 5 day Faculty Development Programme conducted by Thiruvalluvar University in rasad erizat with Mahathma Gandhi Nathional Council of Rural Education, Hyderabad during 29.07.2019 to 02.08.2019.
9. Attended a MHRD sponsored two weeks Faculty Development Programme on “Managing online courses and co-creating MOOCs:2.0” conducted by the Teaching and Learning Centre, Ramanujan College, University of Delhi, during 18.05.2020 to 03.06.2020.
10. Attended a 5 day online Faculty Development Programme on “Emerging Pollutants and their Challenges on Earth Ecosystem” Organized by the Department of Environmental Science, Central University of Kerala, Kasaragod, Kerala during 16th -20th November 2020.
11. Attended the Online Refresher course conducted by the UGC-Academic Staff College, Madurai Kamaraj University during 09.12.2020 to 22.12.2020.
12. Resource person for the UGC sponsored Online Refresher Course on “Design, Synthesis and Applications of Organic compounds” conducted by UGC-Academic Staff College, University of Madras on 29.01.2021.

ADDITIONAL RESPONSIBILITIES

1. Member Syndicate, Thiruvalluvar University from 23.11.2021 onwards.
2. Academic council member 04-12-2012 to 03.12.2015.
3. Coordinator for International Relations Cell, Thiruvalluvar University.
4. Member on patent cell in Thiruvalluvar University, Vellore (14.08.2014).

5. Member of Broad of Studies in Chemistry for Department of Chemistry, Thiruvalluvar University, Vellore (10.02.2014 onwards)
6. Member in Entrepreneurship development & Intellectual Property Rights (IPR) cell in Thiruvalluvar University, Vellore from 27.06.2018 onwards.
7. Member of Solar Cell Committee in Thiruvalluvar University, Vellore.
8. Member of Rural Society for the Advancement of Chemistry (RUSAC).
9. Associate Member, Centre for Ionics University of Malaya (CIUM), University of Malaya, Kulalumpur 50603, Malaysia.
10. Member of Entrepreneurship Development (EDC) & Intellectual Property Rights Cell.
11. Deputy Coordinator for NAAC Cell of Thiruvalluvar University, 23.07.2019 onwards.
12. Member, PhD Thesis Scrutiny Committee, 30.08.2019 onwards.
13. Member, Plagiarism committee from 18.07.2019 onwards.
14. Co-opt member, BOS in Material Science 28.06.2019.
15. Checker, UGC Fellowship Section 27.11.2018 onwards.
16. Member of Innovation Hub, Thiruvalluvar University 17.06.2020 onwards.

TEACHING EXPERIENCE

1. Worked as a Guest Lecturer in the Department of Chemistry, Dr. Ambedkar Govt. Arts College, Chennai, during September 1999 to December 1999. Taught Industrial chemistry for final year B.Sc students and also handled Allied Chemistry for B.Sc students.
2. Working as a Assistant professor in the Department of Chemistry, Thiruvalluvar University, Vellore since March 2011. Teaching PG and M.Phil students.

ORGANIZING THE CONFERENCE/WORKSHOP

1. Organising committee member of “*International Workshop on Sonochemistry and Photocatalysis for Environmental Remediation (IWSPER)*” held on University of Melbourne, during 26-28, November 2008.
2. Organizing committee member of “National conference on Emerging Trends in Chemistry and Materials (ETCM)” held at Department of Chemistry, Thiruvalluvar University, Vellore, Tamil Nadu during 9 & 10 April 2015.
3. Organizing committee member for the South Zone Inter University Women Football Tournament at Neyveli from 03.01.2015 to 06.01.2015.
4. Appointment as the International Advisory Board Member for 6th International Conference on Functional Materials and Devices, 2017 (ICFMD-2017) held Melaka, Malaysia from 15-18 August 2017.
5. **Organizing Secretary** for the Faculty Development Program (FDP) on “Young Supervisor (M.Phil./PhD)-Plagiarism-Free Research Report Writing” organized by Thiruvalluvar University on 10.02.2020 at Thiruvalluvar University campus.
6. **Convenor** for A Three Day International Webinar on “Emerging Trends in Energy and Environmental Chemistry” organized by the Department of Chemistry, Thiruvalluvar University in collaboration with Marudhar Kesari Jain College for Women, Vniyambadi during 25th-27th June 2020.
7. **Organizing Secretary** for the “*National Webinar on Integrative approach on the management of non-communicable diseases*” (online mode) organized by the

Thriuvalluvar University in collaboration with National Institute of Unani Medicine on 24.02.2021 at Thiruvalluvar University campus.

8. **Organizing Secretary** for the International Virtual Conference on Energy and Environment (IVCEE-2021) organized by the Department of Chemistry, Thriuvalluvar University on 01.03.2021 at Thiruvalluvar University campus.
9. **Organizing Secretary** for the Organic Agile Research Culture (OARD) to initiate International Virtual Conference on Energy and Environment (IVCEE-2021) organized by the Department of Chemistry, Thriuvalluvar University on 01.03.2021 at Thiruvalluvar University campus.

COUNTRIES VISITED

1. **Sri Lanka** for participating “Asian conference on Solar Energy Materials and Solar Cells” Kandy, Sri Lanka, during 12-16 June 2006.
2. **Australia** for working as “Postdoctoral Research Fellow” at School of Chemistry, University of Melbourne, Australia, during 04.02.2008 to 30.07.2010.
3. **Australia** for presenting a research paper in “Australian Colloid and Interface Symposium (ACIS-2009)”, held at Stamford Grand, Adelaide, organized by particulate fluids processing centre (PFPC), University of Melbourne, during 1-5 February 2009.
4. **Malaysia** for delivering an invited lecture at the “5th International Conference on Functional Materials and Devices 2015 (ICFMD 2015), Centre for Ionics University Malaya, Department of Physics, University of Malaya, Kuala Lumpur 50603, Malaysia during 4-6th August 2015.
5. **PR China** for delivering an invited talk entitled “Application of Nanomaterials for Sonophotocatalytic Degradation of Organic Pollutants” in the 4th Asia-Oceania Sonochemical Society Conference (AOSS-4) held at Nanjing University, Nanjing, China during 19 – 21 September 2019.
6. **PR China** for delivering an invited talk entitled “Nanostructured photocatalyst materials for the Degradation of Organic Pollutants” in the State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing-100029, China on 23 September 2019.

BOOK CHAPTER(S)

1. S. Anandan, **J. Madhavan** and M. Ashokkumar. “The Contribution of Nanotechnology to Hydrogen Production” *Chapter 5, Nanotechnology for Energy Challenge, Garcia-Martinez (Ed.), Wiley-VCH Verlag, GmbH, (2009), pp.111-136. ISBN-978-3-527-32401-9.*
2. J. Theerthagiri, R.A. Senthil, D. Thirumalai, **J. Madhavan***. “Handbook of Ultrasonics and Sonochemistry” *Chapter title: Sonophotocatalytic degradation of organic pollutants using nanomaterials*, Springer (2016) DOI: 10.1007/978-981-287-470-2_50-12015, pp.1-34. **ISBN-978-981-287-470-2.**
3. J. Theerthagiri, **J. Madhavan***. “Rational design of solar cells for efficient solar energy conversion”. Edited by Dr Alagarsamy Pandikumar and Dr. Ramasamy Ramaraj. Chapter title: Chapter 7: Design and fabrication of carbon-based nanostructured counter electrode materials for Dye-Sensitized Solar Cells. Sep. 2018 **ISBN No. 978-1-119-43740-6.** Wiley.
4. J. Theerthagiri, **J. Madhavan***. “Counter Electrode Materials for Dye Sensitized and Perovskite Solar Cells”. Chapter 2 Pt Electro-catalysts for I-mediated Dye-

- Sensitized Solar Cells Editors: Prof. Sining Yun & Prof. Anders Hagfeldt. Oct. 2018. ISBN: 978 3 527 41367 6. Wiley
5. C. Santhosh, A. Malathi[†], E. Dhaneshvar, A. Bhatnagar, A. Nirmala Grace, **J. Madhavan**. “Iron oxide nanomaterials. For water purification”. Nanoscale Materials in Water Purification. Editors: Sabu Thomas Daniel Pasquini Shao-Yuan Leu Deepu Gopakumar. 2018. <https://doi.org/10.1016/B978-0-12-813926-4.00022-7>. November 2018 ISBN: 9780128139271. Elsevier
 6. J. Theerthagiri ^a, K. Duraimurugan ^b, **J. Madhavan***. “Photocatalytic Functional Materials for Environmental Remediation”. Edited by Dr Alagarsamy Pandikumar and Dr. Ramasamy Ramaraj. Chapter title: Chapter 10: Graphitic carbon nitride-based nanostructured materials for photocatalytic applications. July 2019 ISBN: 978-1-119-52984-2 Wiley.
 7. J. Theerthagiri, Sunitha Salla, Gilberto Maia, **J. Madhavan**, Hyun-Seok Kim. New generation counter electrode materials for high performance dye-sensitized solar cells” which will be published in Cambridge Scholars Publishing, UK. Transition Metal Carbides as Counter Electrode for Dye-Sensitized Solar Cells. Jenny Standfor Publishing, Singapore (Accepted)
 8. Saranya S, Selvi A, Babujanathanam R, Rajasekar A, and **Madhavan J*** (2019) Book Title: Model organisms to study biological activities and toxicity of nanoparticles. Chap title: Insecticidal activity of nanoparticles and mechanism of action, Editor: Siddhardha B, Madhu D and Kaviyarasu K Publishers: Springer Nature Singapore Pte Ltd., 152, Singapore 189721, Singapore. (Accepted).
 9. Nilanjana Das, Sanjeeb Kumar Mandal, Devlina Das, Jagannathan Madhavan and Adikesavan Selvi Rhizomicrobiome Dynamics in Bioremediation CHAPTER TITLE: Recent Updates on the Role of Biosurfactants for Remediation of Various Pollutants. Chapter 9, pp- 180-197, CRC Press. Taylor & Francis Group, LLC, 6000 Broken Sound Parkway NW, Suite 300, Boca Raton, FL 33487,U.S.A.
 10. D. Balaji, K. Premnath and **J. Madhavan***. CHAPTER TITLE: Highly active transition metal based oxide free material to excellent future prospect for HER application. Chapter 18. Oxide free nanomaterials for Energy Storage and Conversion Applications. (Elsevier-Accepted).
 11. T. Bavani and **J. Madhavan***. The Recent Developments on Bismuth Oxyhalides (BiOX; X = Cl, Br, and I) Based Nanocomposite Materials for Environmental Remediation. **Book Title**: Nanomaterials for Energy Conversion, Biomedical and Environmental Applications. ISBN978-981-19-2638-9 (Springer Nature – Accepted).

REFEREES FOR FOLLOWING SCI JOURNALS

Journal of Physical Chemistry C, Journal of Materials Chemistry A, RSC Advances Research on Chemical Intermediates, Ionics, Ultrasonics Sonochemistry, ChemElectroChem, Chemical Physics Letters, Applied Catalysis A, Applied Catalysis B: Environmental, Applied Surface Science, Current Applied Physics, Catalysis Communications, Chemical Engineering Journal, Ceramics International, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Chemical Physics Letters, Journal

of Crystal Growth, Diamond and Related Materials, Ecotoxicology and Environmental Safety, Electrochemistry Communications, Electrochimica Acta, Journal of Hazardous Materials, International Journal of Hydrogen Energy, Journal of Alloys and Compounds Journal of Catalysis, Journal of Colloid and Interface Science, Journal of Environmental Chemical Engineering, Journal of Saudi Chemical Society, Journal of the Taiwan Institute of Chemical Engineers, , Materials Letters, Materials Research Bulletin, Materials Science and Engineering B, Materials Science in Semiconductor Processing, Nano Energy, Journal of Non-Crystalline Solids, Optical Materials, Organic Electronics, Journal of Physics and Chemistry of Solids, Physica B, Journal of Power Sources, Renewable & Sustainable Energy Reviews, Solar Energy, Superlattices and Microstructures, Solar Energy Materials and Solar Cells, Solid State Ionics, Solid State Sciences, Thin Solid Films, Journal of Solid State Chemistry, Journal of Material Science: Materials in Electronics

LIST OF PUBLISHED RESEARCH ARTICLES

S. No	Author(s)	Title of the paper, Journals Name, Vol. (no.), pages	Year	Impact Factor
1.	Anandan S, Madhavan J , Maruthamuthu P, Raghukumar V, Ramakrishnan VT	Synthesis and characterization of Naphthyridine and acridinedione ligands coordinated Ruthenium (II) complexes and their applications in dye sensitized solar cells. <i>Solar Energy Materials and Solar Cells</i> , 81 (2004) 419-428.	2004	6.98
2.	Anandan S, Latha S, Murugesan S, Madhavan J , Muthuraaman B, Maruthamuthu P	Synthesis, characterization and fabrication of solar cells making use of [Ru(dcbpy)(tptz)X]X (where X = Cl ⁻ , SCN ⁻ , CN ⁻). <i>Solar Energy</i> , 79 (2005) 440-448	2005	4.60
3.	Madhavan J , Muthuraaman B, Murugesan S, Anandan S, Maruthamuthu P	Peroxomonosulphate, an efficient oxidant for the photocatalysed degradation of a textile dye, acid red 88. <i>Solar Energy Materials and Solar Cells</i> 90 (2006) 1875-1887.	2006	6.98
4.	Latha S, Madhavan J , Muthuraaman B, Anandan S, Chitra Devi R, Maruthamuthu P	Direct Conversion of Solar radiation to electricity by fabricated solar cells using Ruthenium polypyridyl complexes. <i>Ceylon Journal of Science: Physical Sciences</i> , 12 (2007) 25-31	2007	-
5.	Anandan S, Sathish Kumar P, Pugazhenthiran N, Madhavan J , Maruthamuthu P	Effect of loaded silver nanoparticles on TiO ₂ for photocatalytic degradation of textile dye (Acid Red 88). <i>Solar Energy Materials and Solar Cells</i> , 92 (2008) 929-937.	2008	6.98
6.	Dhanalakshmi KB, Anandan S, Madhavan J ,	Photocatalytic degradation of phenol over TiO ₂ powder: The influence of peroxomonosulphate and peroxodisulphate	2008	6.98

	Maruthamuthu P	on the reaction rate. <i>Solar Energy Materials and Solar Cells</i> , 92 (2008) 457-463.		
7.	Ganesan S, Muthuraaman B, Mathew V, Madhavan J , Maruthamuthu P, Suthanthiraraj SA	Performance of a new polymer electrolyte incorporated with diphenylamine in nanocrystalline dye-sensitized solar cell. <i>Solar Energy Materials and Solar Cells</i> , 92(2008) 1718-1722.	2008	6.98
8.	Ganesan S, Muthuraaman B, Madhavan J , Mathew V, Maruthamuthu P, Suthanthiraraj SA	The use of 2, 6-bis (N-pyrazolyl) pyridine as an efficient dopant in conjugation poly (ethylene oxide) for nanocrystalline dye-sensitized solar cells. <i>Electrochim. Acta</i> , 53 (2008) 7903-7907.	2008	6.21
9.	Muthuraaman B, Murugesan S, Mathew V, Ganesan S, Joseph Paul B, Madhavan J , Maruthamuthu P, Austin Suthanthiraraj S	An Investigation on the Performance of a Silver Ionic Solid Electrolyte System for a New Detergent-based Nanocrystalline Dye-sensitized solar cell. <i>Solar Energy Materials and Solar Cells</i> , 92 (2008) 1712-1717	2008	6.98
10.	Sathish Kumar P, Sivakumar R, Anandan S, Madhavan J , Maruthamuthu P, Ashokkumar M	Photocatalytic degradation of Acid Red 88 using Au-TiO ₂ nanoparticles in aqueous solutions. <i>Water Research</i> , 42 (2008) 4878-4884.	2008	9.13
11.	Madhavan J , Murugesan S, Maruthamuthu P, Anandan S	Advanced Oxidation Process-Photocatalyzed degradation of a textile dye using titanium dioxide. <i>Environmental Science-An Indian Journal</i> , 3 (2008) 80-83	2008	2.54
12.	Madhavan J , Maruthamuthu P, Murugesan S, Anandan.	Kinetic studies on visible light assisted degradation of acid red 88 in presence of metal ion coupled oxone reagent. <i>Applied Catalysis B: Environmental</i> , 83 (2008) 8-14	2008	16.68
13.	Madhavan J , Greiser F, Ashokkumar M	Degradation of Orange G by sonophoto Fenton process. <i>Water Sciece and Technology</i> , 60 (2008) 2195-2202.	2009	1.63
14.	Madhavan J , Maruthamuthu P, Ashokkumar M, Murugesan S	Kinetics of degradation of acid red 88 in presence of Co ²⁺ -ion/peroxomonosulfate reagent. <i>Applied Catalyst A: General</i> , 368 (2009) 35-39	2009	5.0
15.	Madhavan J , Greiser F, Ashokkumar M	Degradation of Orange G by advanced oxidation processes. <i>Ultrasonics Sonochemistry</i> , 17 (2010) 338-343	2010	6.51

16.	Madhavan J , Greiser F, Ashokkumar M	Combined Advanced Oxidation Processes for the Synergistic Degradation of Ibuprofen in Aqueous Environment. <i>Journal of Hazardous Material</i> , 178 (2010) 202–208.	2010	9.0
17.	Madhavan J , Sathis Kumar P, Grieser F, Ashokkumar M, Anandan S	Sonophotocatalytic degradation of monocrotophos using TiO ₂ and Fe ³⁺ . <i>Journal of Hazardous Materials</i> , 177 (2010) 944–949	2010	9.0
18.	Madhavan J , Sathish Kumar P, Grieser F, Ashokkumar M, Anandan S	Sonophotocatalytic degradation of diclofenac using doped and undoped semiconductor nanopartilces. <i>Chemosphere</i> , 80 (2010) 747-752	2010	5.77
19.	Madhavan J , Grieser F, Ashokkumar M	Sonophotocatalytic degradation of Formetanate hydrochloride using homogeneous and heterogenous photocatalysts. <i>Separation and Purification Technology</i> , 73 (2010) 409-414.	2010	5.77
20.	Madhavan J , Sathish Kumar P, Anandan S, Grieser F, Ashokkumar M	Degradation of acid red 88 by the combination of sonolysis and photocatalysis. <i>Separation and Purification Technolog</i> , 74 (2010) 336–341	2010	5.77
21.	Madhavan J* , Grieser F, Ashokkumar M	Sonophotocatalytic degradation of paracetamol using TiO ₂ and Fe ³⁺ . <i>Separation and Purification Technology</i> , 103(2013) 114-118	2013	5.77
22.	Theerthagiri J, Senthil RA, Priya A, Madhavan J* , Michael RJV, Ashokkumar M	Photocatalytic and photoelectrochemical studies of Visible-light active α -Fe ₂ O ₃ -g-C ₃ N ₄ nanocomposites. <i>RSC Advanc</i> , 4(2014) 38222-38229.	2014	3.11
23.	Senthil RA, Theerthagiri J, Madhavan J*	Optimization of performance characteristics of 2-mercaptopyridine doped polyvinylidene fluoride (PVDF) polymer electrolytes for dye sensitized solar cells. <i>Journal of Non-Crystalline Solids</i> , 406(2014) 133-138	2014	2.90
24.	Theerthagiri J, Senthil RA, Madhavan J* , Neppolian B	A comparative study on the role of precursors of graphitic carbon nitrides for the photocatalytic degradation of direct red 81. <i>Materials Science Forum</i> , 807 (2015) 101-113	2015	0.36

25.	Theerthagiri J, Senthil RA, Priya A, Madhavan J* , Ashokkumar. M	Synthesis of a visible-light active V ₂ O ₅ -g-C ₃ N ₄ heterojunction as an efficient photocatalytic and photoelectrochemical material. <i>New Journal of Chemistry</i> , 39 (2015) 1367-1374.	2015	3.20
26.	Michael RJV, Theerthagiri J, Madhavan J , Umapaty MJ, Mantoharan PT	Cu ₂ S-incorporated ZnS nanocomposites for photocatalytic hydrogen evolution. <i>RSC Advance</i> , 5(2015) 30175-30186	2015	3.11
27.	Theerthagiri J, Senthil RA, Madhavan J* , Maiyalagan T	Review on recent progress in non platinum counter electrode materials for Dye-sensitized solar cells. <i>ChemElectroChem</i> , 2 (2015)928–945.	2015	4.44
28.	Theerthagiri J, Senthil RA, Buraidah MH, Madhavan J* , Arof AK	Studies of solvent effect on the conductivity of 2-mercaptopyridine doped solid polymer blend electrolytes and its application in dye-sensitized solar cells. <i>Journal of Applied Polymer Science</i> , 132 (2015)42489.	2015	2.50
29.	Theerthagiri J, Senthil RA, Buraidah MH, Madhavan J* , Arof AK	Effect of tetrabutylammonium iodide content on PVDF-PMMA polymer blend electrolytes for dye-sensitized solar cells. <i>Ionics</i> , 21(2015)2889-2896	2015	2.34
30.	Theerthagiri J, Senthil RA, Malathi A, Selvi A, Madhavan J* , Ashokkumar M	Synthesis and characterization of CuS-WO ₃ composite photocatayst for enhanced visible light photocatalytic activity. <i>RSC Advance</i> , 5 (2015) 52718-52725.	2015	3.11
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	Dhandapani Balaji, Sunitha Salla, *, Muthupandian Ashokkumar	Authors:. <i>Molecules</i> 2019, 24(18), 3341.		
113.	Priya A; Malathi A; Prabhakarn Arunachalam; J. Madhavan, J. Theerthagiri, Abdullah M Al-Mayouf; Myong Yong Choi	Fabrication of visible light active BiFeWO ₆ /ZnO nanocomposites with enhanced photocatalytic activity <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> 586, (2020) 124294.	2020	3.99
114.	Theerthagiri Jayaraman, Madhavan Jagan, Seung Jun Lee, Muthupandian Ashokkumar, Bruno Pollet, Myong Yong Choi.	Sonoelectrochemistry for Energy and Environmental Applications. <i>Ultrasonics Sonochemistry</i> 63 (2020) 104960.	2020	6.51
115.	T. Arunkumar, R. Karthikeyan, R. Ram Subramani, M. Anish, J. Theerthagiri, Rajender Boddula, J. Madhavan.	Effect of MWCNTs on Improvement of Fracture Toughness of Spark Plasma Sintered SiC Nano-Composites. <i>Current Analytical Chemistry</i> 16 (2020) 1-8.	2020	1.36
116.	Theerthagiri. J, M. Arun Prasad, J. Madhavan, MY Choi	Fundamental Aspects and Recent Advances in Transition Metal Nitrides as Electrocatalysts for Hydrogen Evolution Reaction: A Review. <i>Current Opinion in Solid State and Materials Science</i> 24 (2020) 100805.	2020	9.57
117.	Kannadasan Thiagarajan, T. Bavani, Prabhakarn Arunachalam, Seung Jun Lee, Jayaraman Theerthagiri, Jaganathan Madhavan, Bruno Pollet, Myong Yong Choi.	Nanofiber NiMoO ₄ /g-C ₃ N ₄ Composite Electrode Materials for Redox Supercapacitor Applications. <i>Nanomaterials</i> 10(2) (2020) 392	2020	4.32
118	Balaji Dhandapani Madhavan Jagannathan Mohamad S.AlSalhib Mamduh J.Aljaafreh SaradhPrasad	N-doped carbon embedded Ni ₃ S ₂ electrocatalyst material towards efficient hydrogen evolution reaction in broad pH range. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 603, 2020, 125194	2020	3.99
119.	Kannadasan Thiagarajan, Dhandapani Balaji, Jagannathan Madhavan*,	Cost-Effective Synthesis of Efficient CoWO ₄ /Ni Nanocomposite Electrode	2020	4.32

	Jayaraman Theerthagiri, Ki-Young Kwon, Myong Yong Choi	Material for Supercapacitor Applications. Nanomaterials 10(11) (2020) 2195		
120.	Premnath kumar, Arun rasad Murthy, Leticia S. Bezerra, Bibiana K. Martini, Gilberto Maia, and Jagannathan Madhavan	Carbon supported nickel phosphide as efficient electrocatalyst for hydrogen and oxygen evolution reactions, International Journal of Hydrogen Energy 46 (2021) 622-632.	2021	4.93
121.	P. Annie Vinosha, A. Manikandan, R. Ragu, A. Dinesh , P. Paulraj, Y. Slimani, M.A. Almessiere, A. Baykal, J. Madhavan, B. Xavier, G. Francisco Nirmala	Exploring the influence of varying pH on structural, electro-optical, magnetic and photo-Fenton properties of mesoporous ZnFe ₂ O ₄ nanocrystals. Environmental Pollution 272, (2021) 115983	2021	6.792
122.	Thirugnanam Bavani, Jagannathan Madhavan*, Saradh Prasad, Mohamad S. AlSalhi, and Mamduh ALJaffreh.	A straightforward synthesis of visible light driven BiFeO ₃ /AgVO ₃ nanocomposites with improved photocatalytic activity- A plausible degradation mechanism Environmental Pollution (Accepted)	2021	6.792
123.	Kumaraguru Duraimurugan, Muniyasamy Harikrishnan, Jagannathan Madhavan, Ayyanar Siva, Seung Jun Lee, Jayaraman Theerthagiri, Myong Yong Choi	Anthracene-Based Fluorescent Probe: Synthesis, Characterization, Aggregation-Induced Emission, Mechanochromism, and Sensing of Nitroaromatics in Aqueous Media. Environmental Research (Accepted)	2021	5.71
124.	Myong Yong Choi, Seung Jun Lee, Theerthagiri Jayaraman, Palaniyandy Nithyadharseni, Prabhakarn Arunachalam, Dhandapani Balaji, Arumugam Madankumar, Ph.D.; Jagannathan Madhavan, Vikas Mittal.	Heteroatom-Doped Graphene-Based Materials for Sustainable Energy Applications: A Review. Renewable and Sustainable Energy Reviews (Accepted)	2021	12.11
125	Bavani Thirugnanam, Jagannathan Madhavan,	Fabrication of novel AgVO ₃ /BiOI nano composite photocatalyst with	2021	6.49

	Saradh Prasad, AlSalhi Mohamad S., ALJaffreh Mamduh and Vijay Anand Selvaraj	photoelectrochemical activity towards the degradation of Rhodamine B under visible light irradiation. Environmental Research (Accepted)		
126	Dhandapani Balaji Madhavan Jagannathan, Mohamad S. Alsalhi, Mohamad j. Aljaafreh, Saradh Prasad and Pau Loke Show.	Carbon supported Ni ₃ N/Ni heterostructure for hydrogen evolution reaction in both acid and alkaline media. International Journal of Hydrogen Energy (Accepted)	2021	5.816
127.	Annie vinosha, Annie Vinsla J V, Madhavan J, Sandhanasamy Devanesan, Mohamad S AlSalhi, Marcello Nicoletti, Belina Xavier	Impact of dysprosium Doped (Dy) Zinc Ferrite (ZnFe ₂ O ₄) Nanocrystals in Photo-Fenton Exclusion of Recalcitrant Organic Pollutant Environmental Research 203 (2022) 111913	2021	6.49
128.	Kumar Premnath Madhavan Jagannathan, Mohamad S. Alsalhi, Mohamad j. Aljaafreh, Saradh Prasad and Pau Loke Show.	Ultra efficient, Low-Cost and carbon-supported Transition Metal Sulphide as a Platinum Free Electrocatalyst towards Hydrogen Evolution Reaction at alkaline medium International Journal of Hydrogen Energy (Accepted)	2021	5.816
129.	Neppolian Bernaurdshaw, Kavitha Pandi; Preeyanga Mani; V. Vinesh; J. Madhavan.	Complete photocatalytic degradation of Tetracycline by carbon doped TiO ₂ supported with stable metal nitrate hydroxide Environmental Research 207 (2022) 112188	2021	6.49
130.	A. Sathiya Priya · D. Geetha · J. Madhavan	Synthesis and Structural, Dielectric and Photocatalytic Properties of (Ti, La)-co-Doped Calcium Ferrite Ceramic Powders Arabian Journal for Science and Engineering (Accepted)	2022	2.234
131.	S.Ibrahim R. Sanmugapriya, J. Arockia Selvi, T. Pushpamalini, P. Kamaraj, P.A. Vivekanand, G. Periyasami, A. Aldalbaji, K. Perumal, J. Madhavan, K. Santhosh	Effect of 3-Nitroacetophenone on Corrosion Inhibition of Mild Steel in Acidic Medium. International Journal of Photoenergy (Accepted)	2022	2.113
132.	Bavani Thirugnanam, Selvi, S. Vijayanand,	One-pot synthesis of bismuth yttrium tungstate nanosheet decorated 3D-BiOBr	2022	7.086

	Selvaraj, S. Murugesan and Jagannathan Madhavan	nanoflower heterostructure with enhanced visible light photocatalytic activity. <i>Chemosphere</i> (Accepted)		
133.	Myong YongChoi, JayaramanTheerthagiri, Madhavan Jagannathan, GilbertoMaia	Surface tuning and interface engineering of advanced materials for detection and removal of toxic pollutants from industrial wastewater <i>Environmental Ressearch</i> 210 (2022) 112950.	2022	6.489
134.	S.Shafi, J, Madhavan, K. Murugan	Synthesis of new series of quinoline derivatives with insecticidal effects on larval vectors of malaria and dengue disease. <i>Scientific Reports</i> (Accepted)	2022	4.38
135.	D. Balaji, Preeyangaa, B. Neppolian, M.Selvaraj, S. Murugesan and J.Madhavan	Phosphorus co-doped reduced graphene oxide embedded flower- like CoS/CoS ₂ heterostructure as an efficient electrocatalyst for hydrogen evolution reaction in acidic media <i>Journal of Alloys and Compounds</i> (Accepted)	2022	5.316
136.	Bavani Thirugnanam, Vinesh, B. Neppolian, M. Selvaraj, S. Murugesan and J.Madhavan	One-step synthesis of rod-on-plate like 1D/2D-NiMoO ₄ /BiOI nanocomposite for an efficient visible light driven photocatalyst for pollutant degradation. <i>Environmental Science and Pollution Research</i> (Accepted)	2022	4.223

INVITED LECTURE(S):

1. Presented an invited lecture at the State level seminar on modern trends in chemistry organized by the Department of Chemistry, Sun arts and science college, Tiruvannamalai on 7th February 2014. **Title:** *Electrochemical Cells*.
2. Presented an invited lecture at the National level conference on Recent advances in nanosciences organized by the Department of Chemistry, Auxilium college, Katadi, Vellore during 21&22nd November 2014. **Title:** *Nanomaterials in energy and environmental remediation*.
3. Presented an invited lecture at the 5th International Conference on Functional Materials and Devices 2015 (ICFMD 2015), Centre for Ionics University Malaya, Department of Physics, University of Malaya, Kualalumpur 50603, Malaysia during 4-6th August 2015. **Title :** *Photoelectro active nanomaterials for energy and environmental applications*.
4. Acted as a **judge** for the technical section at the National level conference on Recent advances in nanosciences organized by the Department of Chemistry, Auxilium college, Katadi, Vellore during 21&22nd November 2014.
5. Acted as a **judge** & chirperson for the technical section at the 5th International Conference on Functional Materials and Devices 2015 (ICFMD 2015), Centre for Ionics

- University Malaya, Department of Physics, University of Malaya, Kuala Lumpur 50603, Malaysia during 4-6th August 2015.
6. Acted as a chair the session for oral presentation at the “State Level Seminar on Recent Advances in Nanotechnology (CHEMFEST-16)” organized by Shanmuga Industries Arts & Science College, Tiruvannamalai during 21th September 2016.
 7. Presented a Guest Lecture at School of Advanced Sciences, VIT University, Vellore on 28 September 2016 Title : *Solar Cells: Principles, Materials & Design*.
 8. Acted as resource person for the project “Lecture Demonstrations for Popularisation of Science” funded by NCSTC, DST, Govt. of India and organized by Stella Maris College (Autonomous), Chennai.
 9. Presented a Guest Lecture at Department of Chemistry, School of Advanced Sciences, VIT University, Vellore on 15 March 2017 Title : *An Overview on Recent Developments in Solar Cell Design*.
 10. Acted as **resource person** for the FDP program in VIT, Academic Staff College on 24.04.2018. “Nanostructured materials for Energy and Environmental Applications”.
 11. Presented in “National Symposium on Sustainable Energy Conversion & Storage Materials (NSSECSM - 2018) organized by the Centre of Excellence for Energy Research, Sathyabama University, Chennai during April 26-27, 2018. ISBN No: 978-93-83409-45-7. Development of Novel Platinum Free Electrocatalysts for the Applications in Dye-Sensitized Solar Cells and Hydrogen Evolution Reactions
 12. Presented an invited talk at the National Conference on Energy Materials-2018 conducted by Dept. of Physics, Manonmaniam Sundaranar University, Tirunelveli, June 28-29, 2018. Title: Recent developments on platinum free electrocatalysts for energy applications.
 13. Presented an invited lecture at “Seminar on Orientation to Research” organized by Thiruvalluvar University, Vellore on 10.08.2019. Topic: Writing Research/Review articles for Communication-A Guide”.
 14. Delivered an invited talk entitled “Application of Nanomaterials for Sonophotocatalytic Degradation of Organic Pollutants” in the 4th Asia-Oceania Sonochemical Society Conference (AOSS-4) held at Nanjing University, Nanjing, China during 19 – 21 September 2019.
 15. Delivered an invited talk entitled “Nanostructured photocatalyst materials for the Degradation of Organic Pollutants” in the State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, Beijing-100029, China on 23 September 2019.
 16. Presented a **Guest Lecture** at Department of Chemistry, Kamban College of Arts and Science, Tiruvannamalai, on 15 October 2019. Title : *Nanocatalysis-An effective approach for Sustainable Energy and Environment*.
 17. **Resource person** for the National Conference on “Teaching, Learning and Evaluation: Changes and Challenges” organized by IQAC, Auxillium College, Katpadi on 30 and 31 January 2020.
 18. **Resource person** for the National Conference on Emerging Trends on Materials Science organized by the Department of Chemistry and Physics, Thiru Vi. Ka. Govt. Arts College, Thiruvarur on 14.02.2020.
 19. **Resource person** for the National Level seminar on (CHEM-PECANE-2020) organized by the Department of Chemistry, Aruna Vidhya Arts & Science College, Tiruvannamalai on 20.02.2020.

20. **Resource person** for the invited lecture on “Fundamentals and applications of Electrochemistry” organized by the Department of Chemistry, Marudhar Kesari Jain College for Women, Vaniyambadi on 06.03.2020.
21. Acted as a **SESSION CHAIR** for the technical section for the “International e-conference on Advancements in Materials Science and Technology (iCAM 2020)” organized by Sathyabama Institute of Science and Technology in accocaition with Gyeongsang National University during 23&25 November 2020.
22. Delivered an **invited lecture** on Thermodynamics to PG students of the Dept. of Chemistry, Marudhar Kesari Jain College, Vaniyambadi on 18 January 2021.
23. Resource person for the UGC sponsored Online Refresher Course on “Design, Synthesis and Applications of Organic compounds” conducted by UGC-Academic Staff College, University of Madras on 29.01.2021.
24. Delivered an **invited lecture** (online) on “Advanced Funtional Materials for Energy and Environmental Applications” to students of the Dept. of Physics, Stelle Maris College, Chennai on 20 April 2021.
25. Delivered an **invited lecture** (online) on “Electrochemistry-Fundamentals and Applications” to MSc Chemistry students jointly organized by Academy of Sciences, Chennai, Dept. of Analytical Chemistry, University of Madras, and Dept. of Physical Chemistry, Madurai Kamaraj University on 29.7.21.
26. Delivered an **invited lecture** (online) on “Applications of nanoomaterialls in Energy and Environment” in the 5th International Conference on Rcent ds in Applied Science and Technology organized by Dept. of Physics, Manonmanium Sundaranaar University during 25.11.2021 to 28.11.2021.

CONFERENCES/WORKSHOPS PRESENTED/PARTICIPATED:

1. Participated in “Awareness Programme on Applications of Radioisotopes and Radiation Technology for Societal Development” Anna University, Chennai, India, during 13 & 14 July 2004.
2. Participated in “National conference on Pollution abatement through technology development” Anna University, Chennai, India, during 18 & 19 March 2005.
3. Participated in “Asian conference on Solar Energy Materials and Solar Cells” Kandy, Sri Lanka, during 12-16 June 2006.
4. Participaed in the International Conference on Nanoscience and Technology (ICNSNT 2006) organized by the Centre for Nanoscicen and Nanotechnology, University of Madras, Chennai during 26-28, August 2006.
5. Presented in “Envirotech 2006” J.B.A.S. College, Chennai, India.
Title: *Advanced Oxidation Processes: Photocatalysed degradation of textile dye using titanium dioxide.* **J. Madhavan**, R. Chitra Devi, S. Latha and P. Maruthamuthu.
6. Participated in “International conference on nanomaterial and its applications” held at National Institute of Technology, Trichy, India, during 4-6 February 2007.
7. Presented in “International workshop on Sonochemistry and Photocatalysis for Environmental remediation” held at University of Melbourne, Australia, during 26-28 November 2008.
Title: *Sonophotocatalytic degradation of Orage G using titanium dioxide.* (page 24) **J. Madhavan**, F. Greiser and M. Ashokkumar.

8. Presented in Australian Colloid and Interface Symposium (ACIS-2009), held at Stamford Grand, Adelaide, during 1-5 February 2009.
Title: *Sonophotocatalytic degradation of Orange G using titanium dioxide. (page 162)*
J. Madhavan, F. Greiser and M. Ashokkumar.
9. Presented in “International symposium on Environmental risk assessment” held at Bharathiar University, Coimbatore, Tamil Nadu, India, during 17-19 October 2011.
Title: *Sonophotocatalytic degradation of Paracetamol using titanium dioxide.*
J. Madhavan, F. Greiser and M. Ashokkumar.
10. Presented in “National conference on Advanced Nanomaterials (ANM-2012)” held at Periyar University, Selam, Tamil Nadu, India, during 6 & 7 February 2012.
Title: *Improved performance and enhanced conductivity of a dye-sensitized solar cell incorporating a pyrazole doped poly (ethylene oxide) based polymer electrolyte.*
J. Madhavan, S. Ganesan, P. Maruthamuthu and S. Austin Suthanthiraraj.
11. Presented in “Second International Conference on Advanced Oxidation Processes (AOP-2012) held at Mahatma Gandhi University, Kottayam, Kerala, India, during 5-8 October 2012.
Title: *Degradation of Paracetamol by sonophotochemical processes.* **J. Madhavan**, F. Greiser and M. Ashokkumar.
12. Presented in “Young Scientist Research Awardees’ Meet” held at BARC, Mumbai, India, during 26-28 November 2012.
Title: *Solar energy conversion into electricity using blended polymer electrolytes for nanocrystalline dye sensitized solar cells.* **J. Madhavan.**
13. Presented in “International conference on emerging trends in chemical sciences organized by the school of advanced sciences” held at VIT University, Vellore, Tamil Nadu, India, during 5-7 December 2013.
Title: *Effect of phenothiazine addition in polyvinylidene fluoride-co-hexafluoropropylene polymer electrolytes for device application.* J. Theerthagiri, R.A. Senthil, **J. Madhavan**, M. Kumaravadivel, S. Austin Suthanthiraraj, P. Maruthamuthu.
14. Presented in the National Conference on Ecotechnologies for Wastewater Treatment, organized by the Dept. of Environmental Sciences, Bharathiar University, Coimbatore, Tamil Nadu, India, during 21 & 22 January 2014.
Title: *Photodegradation of textile dye over $g-C_3N_4$ under visible light irradiation.* J. Theerthagiri, R.A. Senthil, **J. Madhavan.**
15. Participated in the International conference on Nanoscience and Nanotechnology, organized by VIT University, Vellore during 29 November to 01.12.19.
16. Participated in FDP programme on ‘Young Supervisor (M.Phil/PhD) on Plagiarism-free research report writing’ held in Thiruvalluvar University, Vellore on 04.01.2020.
17. Attended the Indo-Australia workshop on Nanomaterials for applications in Agriculture, Energy and Environment, held on 23.01.2020 at NIT, Trichy.
18. Participated in the International Virtual Seminar on “Advanced Materials for Energy Conversion and Storage” organized by Department of Chemistry, Sathyabama university, Chennai.