Dr. M. SUNDRARAJAN
Assistant Professor

Contact

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Academic Qualifications: M.Sc., Ph.D

Teaching Experience: 11 Years 6 months

Research Experience: 18 Years 6 months

Additional Responsibilities

1. Ragging Contact Person
2. Research Collogium coordinator

Areas of Research

1. **Organic Chemistry**
2. **Textile Chemistry**
3. **Green & Environmental Chemistry**
4. **Nano-materials Chemistry**

Research Supervision / Guidance

Program of Study		Completed	Ongoing
Research	Ph.D.	08	07
	M.Phil.	11	01
Project	PG	37	04
	UG	06	00

Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters / Monographs / Manuals
61	40	4	74	9 Chapters

Cumulative Impact Factor (as per JCR) : 92.398
h-index : 12
i10 index : 16
Total Citations : 590

Funded Research Projects

Completed Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	AURF	06.11.2009	05.11.2010	Studies on the effect of eco-friendly materials in textile	0.64
2	AURF	13.04.2010	12.10.2010	Physico-chemical studies on borewells water in Tirupur District	0.20
3	DST - SERC	18.01.2010	17.01.2013	Source reduction of pollutants from textile effluent by Greener route	19.33
4	UGC	01.02.2010	28.02.2013	Effective minimization of Pollution load in reactive dye bath using eco-friendly salt and ozonation	4.33

Patents

1. Granted: **Korean Patent**
   Inventors: Hong Sun Lg, J. Suresh, R. Yuvakumar, J. Nathanael, M. Sundrarajan
   Patent Number: 10-1617994
2. Published**: Indian Patent**
   Inventors: M. Sundrarajan, Hong Sun Lg, J. Suresh, R. Yuvakumar, R. Rajiv Gandhi
   Application Number; 3557/CHE/2014 A
   Publication Date: 01/07/2016

Distinctive Achievements / Awards

1. DST – FAST track Y**oung scientist award** in year 2009
2. **Alagappa Excellence Award for Research** – 2016 given by AURF, Alagappa University, Karaikudi.
3. The research paper entitled "Studies on the effect of Ionic liquid in synthesis of ZnO nanostructure using plant extract and their performance in antibacterial activity" has won the **Best Paper Award** in New opportunities and challenges in chemical research (NOCCR – 2014), A.V.V.M. Sri Pushpam Colege, Poondi, Thanjavur Dt.
4. The research paper entitled "Structural synthesis of fluorapatite nanocrystals using different imidazolium based ionic liquid: A green process" has won the **Best Paper Award** in National conference on Biomaterials in Medicinal Chemistry, Madurai Kamaraj University, Madurai.
5. **Best Article Award** form Chinese Society of Metals for article entitled "Ionic Liquids Assisted Synthesis of ZnO Nanostructures: Controlled Size, Morphology and Antibacterial Properties" , Journal of Materials Science and Technology.

Events organized in leading roles

Number of Seminars / Conferences / Workshops / Events organized: 3

1. National Seminar on Recent Advances in Textile and Electrochemical Science (RATES 2008); Department of Industrial Chemistry, Alagappa University, Karaikudi; December 19-20th 2008 - **Co-convener.**

2. National Conference on Recent Trends in Green Synthesis (RTGS-2011); Department of Industrial Chemistry, Alagappa University, Karaikudi; 5-6th August 2011 – **Convener.**

3. UGC Sponsored Workshop on "Chemistry – Our Environment, Our Life and Our Future" Department of Industrial Chemistry, Alagappa University, Karaikudi; 22-23rd December 2011- **Organizing Secretary**.

4. National Seminar on Recent Advances in Textile and Electrochemical Science (RATES 2012); Department of Industrial Chemistry, Alagappa University, Karaikudi; March 22-23rd 2012 - **Member.**

5. International Conference on Recent Advances in Textile and Electrochemical Science (RATES 2013); Department of Industrial Chemistry, Alagappa University, Karaikudi; March 21-23rd 2013 - **Member.**

6. International Workshop on Frontier Areas in Chemical Technologies by Department of Industrial Chemistry, Alagappa University, Karaikudi; February 21-22nd 2014 – **Member.**

7. National seminar on Frontier Areas in Chemical Technologies by Department of Industrial Chemistry, Alagappa University, Karaikudi; March 6- 7th 2015 – **Member.**

8. International conferecce on Frontier Areas in Chemical Technologies by Department of Industrial Chemistry, Alagappa University, Karaikudi; March 21-23rd 2016 – **Member.**

Events Participated

Conferences / Seminars / Workshops: 03

1. Two days national confercence on Advances in chemicals for textile polymers-Application and quality Assurance (ACTPAQ 2011) organised by Department of chemistry, PSG college of Technology, coimbatore on17-18th February 2011
2. Two days national confercence on Structure solving by Powder X Ray Diffration organised by Department of Physices, Alagappa University, Karaikudi on26- 27th July 2011.
3. Three days IndoUkworkshop for Current Development of wastewater treatment in india organised by Department of chemical Engineering, NIIT,Trichy on29-31st August 2011.
4. One day National Seminar attended at Tirupur- Textile Testing Methods By SDL ATLAS & Premier Color Scan Ltd., Mumbai on 7th September 2011.
5. One day International Workshop attended at Tirupur- Weathering & Light Fastness Testing of Textiles By Q Lab, USA on 7th December 2011.
6. Two daysnational workshop on Expansion and Enrichment of Distance Learning organised by Directorate of Distance Education, Alagappa University, Karaikudi on 27-28th March 2012.
7. One day orientation programme on preparation forCmpetitive examination and capacity building conducted by attended at Alagappa university study circle on 28th September 2015.
8. Two days national workshop on Digitalization of Information sources in libraries using open source software in Academic institutions., by Central Library , Alagappa University, Karaikudi on15-16th December 2016.

Other Training Programs

1. Orientation course attended at UGC-Academic Staff College, Pondicherry University, Pondicherry – 19.8.2010-15.9.2010.
2. Referesher course attended at UGC-Academic Staff College, Madurai kamaraj University, Madurai – 12.07.2012-01.08.2012
3. Referesher course attended at UGC-Academic Staff College, Madurai kamaraj University, Madurai – 23. 12.2014 - 12.01.2015

Membership in

Professional Bodies

1. Life Member: The Indian Science Congress Association, Kolkata – 700 017
2. Asian Journal of Chemistry, India – Life Member

Academic Bodies (such as Board of Studies etc.,)

1. Special Invitee in the Board of studies in M. Sc Chemistry, Alagappa University
2. Guide cum – convener in Ph.D Doctoral Committee for 8 students in year 2008 to 2012

Others

1. External examiner for the evaluation of 2 M.Phil Dissertation and viva-voce during the year 2008 and 2011.
2. Journal Reviewer in 5 International Journals from 2008 to till datexxx
3. Study material prepared for M.Sc Chemistry DDE - 9 Units (Organic chemistry, Instrumental Methods of Analysis, Applied Chemistry and Nano science)
4. Member in M.Phil DDE viva –voce committee, Alagappa University
5. Member in Ph.D scholar selection committee in chemistry, Alagappa University
6. Judge in Inspire Award Science Expo organised by Department of Science and Technology, New Delhi on 22nd August 2014.
7. **i. Reviewer for** Elsevier (Hazardous Materials) the manuscript titled "Decolorization of C.I.Reactive Red 2 by catalytic Ozonation processes".
   ii. Reviewer for Elsevier (Desalination) the manuscript titled" Textile wastewater reuse as an alternative water source for dyeing and finishing processes: A case study.
   iii. **Reviewer for** Elsevier (Natural Products Research) The he manuscript of title " Silk fabric dyed with estract of sophora flower bud".

Number of Books written

For DDE: Organic chemistry : 2 units
Instrumental methods of analysis : 5 units
Applied chemistry : 2 units

Resource persons in various capacities

Number of Invited / Special Lectures delivered: **01**

Adverse effect of textile dye effluents in environment and treatment methods: an overview	National seminar on textile dye effluents and its health impacts-A biomedical approach	K.S.Rangasamy College of Arts and Sciences, Tiruchengode	National

Others

1. No. of PhD Public Viva Voce Examination conducted : 08

Recent Publications

1. M. Sundrarajan and S. Gowri, (2011), "Green synthesis of titanium dioxide nanoparticles by nyctanthes arbor-tristis leaves extract", Chalcogenide letters, American Scientific publishers, Vol. 8, 447-451. (IF: 0.676).

2. M. Sundrarajan, S. Selvam, R. Rajiv Gandhi and J. Suresh, (2011), "Effectively utilize the natural resources as mordants and dyes for dyeing of cotton", International journal of current research, American Scientific publishers, Vol. 3, 363-367. (IF: Nil).

3. M. Sundrarajan and A. Rukmani, (2011), "Inclusion of antibacterial agent thymol on β-cyclodextrin-grafted organic cotton", Journal of industrial textiles, SAGE Publishers, Vol. 44 ,1-13. (IF: 1.120) .

4. S. Selvam and M. Sundrarajan, (2012), "Functionalization of cotton fabric with PVP/ZnO nanoparticles for improved reactive dyeability and antibacterial activity", Carbohydrate polymers, Elsevier, Vol. 87, 1419-1424. IF: (4.568).

5. S. Gowri, M. Sundrarajan, S. Selvam, R. Rajiv Gandhi and J. Suresh, (2012), "Antibacterial effect of nyctanthes arbor-tristis extract and biosynthesized TiO2 nanoparticles coated cotton fabric", Advanced science, engineering and medicine, American Scientific publishers, Vol. 4, 55-61. (IF: Nil).

6. J. Suresh, R. Rajiv Gandhi and M. Sundrarajan, (2012), "Enhanced dyeability on modified organic cotton using nanochitosan derived from crab shells", Advanced science, engineering and medicine, American Scientific publishers, Vol. 4, 1-5. (IF: Nil).

7. M. Sundrarajan, R. Rajiv Gandhi, J. Suresh, S. Selvam and S. Gowri, (2012), "Sol-gel synthesis of MgO nanoparticles using ionic liquid - [BMIM]BF4- as capping agent", Nanoscience and Nanotechnology letters, American Scientific publishers, Vol. 4, 100-104. (IF: 1.338).

8. M. Sundrarajan, R. Rajiv Gandhi, J. Suresh, S. Gowri and S. Selvam, (2012), "Natural dying of silk fabric using eco- friendly mordants", Asian journal of chemistry, American Scientific publishers, Vol. 24, 3109-3112. (IF: 0.33).

9. M. Sundrarajan and M. Ramalakshmi, (2012), "Novel cubic magnetite nanoparticle synthesis using room temperature ionic liquid", E-Journal of chemistry, Vol. 9(3), 1070-1076. (IF: 0.716).

10. M. Sundrarajan, A. Rukmani, R. Rajiv Gandhi and S. Vigneshwaran, (2012), "Eco friendly modification of cotton using enzyme and chitosan for enhanced dyeability of curcuma longa", Journal of chemical and pharmaceutical research, Vol. 4(3), 1654-1660. (IF: Nil).

11. J. Suresh, R. Rajiv Gandhi, S. Gowri, S. Selvam and M. Sundrarajan, (2012), "Preparation and characterization of nano-size poly reactive blue MXR", E-Journal of chemistry, Vol. 9(3), 1336-1341. (IF: 0.716).

12. M. Sundrarajan and A. Rukmani, (2012), "Durable antibacterial finishing on organic cotton by inclusion of thymol into cyclodextrin derivative", E-Journal of chemistry, Vol. 9(3), 1511-1517. (IF: 0.716) .

13. S. Selvam, R. Rajiv Gandhi, J. Suresh, S. Gowri, S. Ravikumar and M. Sundrarajan, (2012), "Antibacterial effect of novel synthesized sulfated β-cyclodextrin crosslinked cotton fabric and its improved antibacterial activities with ZnO, TiO2 and Ag nanoparticles coating", International journal of pharmaceutics, Vol. 434, 366-374. (IF: 3.994).

14. R. Rajiv Gandhi, J. Suresh and M. Sundrarajan, (2012), "Effect of calcination temperature on surface morphology of ionic liquid assisted MgO nanoparticles by sol-gel method", Advanced science letters, Vol. 5, 1-5. IF: (1.253) .

15. J. Suresh, R. Rajiv Gandhi, S. Gowri, S. Selvam and M. Sundrarajan, (2012), "Surface modification and antibacterial behavior of bio-synthesized MgO nanoparticles coated cotton fabric", Journal of biobased materials and bioenergy, Vol. 6, 1-7. IF: (0.635).

16. R. Rajiv Gandhi, S. Gowri, J. Suresh, S. Selvam and M. Sundrarajan, (2012), "Biosynthesis of tin oxide nanoparticles using corolla tube of nyctanthes arbor-tristis flower extract", Journal of biobased materials and bioenergy, Vol. 6, 1-5. (IF: 0.635).

17. M. Sundrarajan, S. Selvam and K. Ramanujam, (2012), "Synthesis of sulfated β-cyclodextrin/cotton/ZnO nano composite for improve the antibacterial activity and dyeability with azadirachta indica", Journal of applied polymer science, Vol. 128, 108-114. (IF: 1.886) .

18. M. Sundrarajan and A. Rukmani, (2012), "Bio polishing and cyclodextrin derivative grafting on cellulosic fabric for incorporation of antibacterial agent thymol", Journal of the textile institute, Vol. 104, 1-9. (IF: 1.128).

19. M. Sundrarajan, R. Rajiv Gandhi, A. Rukmani, S. Selvam, J. Suresh and S. Gowri, (2012), "Chitosan and cyclodextrin modification on cellulosic fabric for enhanced natural dyeing", Chemical science transactions, Vol. 2. (IF: 0.855).

20. M. Sundrarajan, J. Suresh and R. Rajiv Gandhi, (2012), "A comparative study on antibacterial properties of MgO nanoparticles prepared under different calcination temperature", Digest journal of nanomaterials and biostructures, Vol. 7, 983-989. (IF: 0.756).

21. J. Suresh, R. Rajiv Gandhi, S. Gowri, S. Selvam and M. Sundrarajan, (2012), "Antibacterial activity of magnesium (II) ions loated cyclodextrin-grafted-cotton fabric", Asian journal of chemistry, Vol. 24, 5629-5631. (IF: 0.333).
22. R. Rajiv Gandhi, S. Gowri, J. Suresh and M. Sundrarajan, (2012), "Ionic liquid assisted synthesis of ZnO nanoparticles: Growth mechamism under different calcination temperature" Journal of nanoelectronics and optoelectronics, Vol. 8, 1-4. (IF: 0.675).

23. R. Rajiv Gandhi, J. Suresh, S. Gowri and M. Sundrarajan, (2012), "Facile and green synthesis of ZnO nanostructures using Ionic liquid assisted banana stem extract route", Advanced science letters, Vol. 18, 234-240. IF: (1.253).

24. R. Rajiv Gandhi, S. Gowri, J. Suresh and M. Sundrarajan, (2012), "Ionic liquid assisted synthesis of ZnO nanostructures: controlled size, morphology and antibacterial properties", Journal of material science and technology, 1-6. (IF: 2.26).

25. R. Rajiv Gandhi, J. Suresh, S. Gowri, S. Selvam and M. Sundrarajan, (2013), "Ultrasonic dyeing of enzyme treated organic cotton using nyctanthes arbor-tristis", Chemical science transactions, Vol. 2, 642-648 (IF: 0.855).

26. M. Ramalakshmi and M. Sundrarajan, (2013), "Ionic liquid-assisted synthesis of nickel oxide magnetic nanoparticles", Asian journal of chemistry, Vol. 25, 3081-3083. (IF: 0.333) .

27. M. Sundrarajan and A. Rukmani, (2013), "Durable antibacterial finishing on cotton by impregnation of limonene microcapsules", Advanced chemical letters, Vol. 1, 40-43. (IF: Nil).

28. J. Suresh, R. Rajiv Gandhi, S. Selvam and M. Sundrarajan, (2013), "Synthesis of magnesium oxide nanoparticles by wet chemical method and it's antibacterial activity", Advanced materials research, Vol. 678, 297-300. (IF: Nil).

29. M. Ramalakshmi and M. Sundrarajan, (2013), "[BMIM][TfO] ionic liquid-assisted oriended growth of Co3O4 nanowarms materials", Materials research bulletin, Vol. 48, 618-623. (IF: 2.43) .

30. S. Gowri and M. Sundrarajan, (2013), "Green synthesis of tin oxide nanoparticles by aloe vera: Structural, optical and antibacterial properties, Journal of nanoelectronics and optoelectronics", Vol. 8, 1-10. (IF: 0.675).

31. S. Gowri, R. Rajiv gandhij and M. Sundrarajan, (2013), "Structural, optical, antibacterial and antifungal properties of zirconia nanoparticles by biobased protocol", Journal of material science and technology, Vol. 30, 782-790. (IF: 2.26).

32. R. Yuvakumar, J. Suresh, A. Joseph Nathanael, M. Sundrarajan and S.I. Hong, (2014), "A comparative study on antibacterial and wash durability behavior of ZnO and CuO nanoparticles treated cotton fabric using sodium alginate as cross linker", Applied mechanics and materials, Trans Tech Publication, Vol. 508, 44-47. (IF: Nil).

33. J. Suresh, R. Yuvakumar, A. Joseph Nathanael, M. Sundrarajan and S.I. Hong, (2014), Antibacterial and wash durability properties of untreated and treated cotton fabric using MgO and NiO nanoparticles, Applied mechanics and materials, Trans Tech Publication, Vol. 508, 48-51. (IF: Nil).

34. K. Ramanujam and M. Sundrarajan, (2014), "Grafting of cellulosic fabric using PVP with MgO nanoparticles for improve performance of bacterial and fungal pathogens", World journal of pharmacy and pharmaceutical sciences, Vol. 3, 1989-2004. (IF: Nil).

35. S. Ambika and M. Sundrarajan, (2014) "Synthesis of β- Cyclodextrin/ZnO nanocomposites and its improved antibacterial activity on cotton fabric", World journal of pharmacy and pharmaceutical sciences, Vol. 3, 751-761. (IF: Nil).

36. R. Yuvakumar, J. Suresh, A. Joseph Nathanael, M. Sundrarajan and S.I. Hong, (2014), "Rambutan (Nephelium lappaceum L.) peel extract as synthesis of nickel oxide nanocrystals", Journal of materials letters, Vol. 128, 170-174. (IF: 2.466) .

37. R. Yuvakumar, J. Suresh, A. Joseph Nathanael, M. Sundrarajan and S.I. Hong, (2014), "Synthetic strategy to prepare ZnO nanocrystals using rambutan (Nephelium lappaceum L.) peel extract and its antibacterial applications", Journal of material science and engineering C, Vol. 41, 17-27. (IF: 3.23).

38. M. Ramalakshmi, P. Shakthivel and M. Sundrarajan, (2014), "Novel method of room temperature ionic liquid assisted Fe3O4 nanocubes and nanoflakes synthesis", Materials research bulletin,Vol. 48, 2758-2765. (IF: 2.43).

39. S. K. Kannan and M. Sundrarajan, (2014), "A Green approach for the synthesis of a cerium oxide nanoparticle: Characterization and antibacterial activity", International journal of nanoscience, Vol. 13, 1-7. (IF: Nil).

40. R. Rajiv Gandhi, S. Senthil, R. Rajappan, K. Ramesh, and M. Sundrarajan, (2014), "[BMIM] BF4, [EMIM] BF4 and [BMIM] PF6 Ionic liquids assisted synthesis of MgO

nanoparticles: Controlled size, much morphology and antibacterial properties", Journal of bionanoscience, American Scientific publishers, Vol. 8, 1-7. (IF: Nil).

41. K. Ramanujam and M. Sundrarajan, (2014), "Antibacterial effects of biosynthesiszed MgO nanoparticles using ethanolic fruit extract of Emblica Officinalis", Journal of photochemistry and photobiology B: biology, Vol. 141, 296-300. (IF: 3.03).

42. S. Jegatheeswaran and M. Sundrarajan, (2014), "PEGylation of novel hydroxyapatite/PEG/Ag nanocomposite particles to improve its antibacterial efficacy", Materials science and engineering C, Vol. 51, 174-181. IF: (3.23).

43. R. Rajiv Gandhi, S. Senthil, R. Rajappan, K. Ramesh, S. Gowri, J. Suresh and M. Sundrarajan, (2015), "Ionic liquids: A Green solvent for the biosynthesis of MgO nanoparticles using banana stem plant extract", Journal of nanoengineering and nanomanufacturing, Vol. 5, 1-7. (IF: Nil).

44. K. Ramanujam, and M. Sundrarajan, (2015), "Biocidal activities of monochloro triazine-β- cyclodextrin with MgO modified cellulosic fabric", The journal of the textile institute, Vol. 106,1147-1153. (IF: 1.128).

45. S. Ambika and M. Sundrarajan, (2015), "Antibacterial behavior of Vitex negundo extract assisted ZnO nanoparticles against pathogenic bacteria", Journal of photochemistry and photobiology B: biology, Vol. 146, 52-57. (IF: 3.03).

46. S.K. Kannan and M. Sundrarajan, (2015), "Biosynthesis of Yttrium oxide nanoparticles using Acalypha indica leaf extract", Bulletin of materials science, (IF: 0.895).

47. S. Ambika and M. Sundrarajan, (2015), "Green biosynthesis of ZnO nanoparticles using vitex negundo L.extract: Spectroscopic investigation of interaction between ZnO nanoparticles and human serum albumin", Journal of photochemistry and photobiology B: biology, vol. 149, 143-148. (IF: 3.03).

48. S. Ambika and M. Sundrarajan, (2015), "Plant-extract mediated synthesis of ZnO nanoparticles using Pongamia pinnata and their activity against pathogenic bacteria", Advanced powder technology, Vol. 26, 1294-1299. (IF: 2.478).

49. S.K. Kannan and M. Sundrarajan, (2015), "Green synthesis of ruthenium oxide nanoparticles: Characterization and its antibacterial activity", Advanced powder technology, Vol. 26, 1505-1511. (IF: 2.478).

50. M. Sundrarajan, S. Jegatheeswaran, S. Selvam, N. Sanjeevi and M. Balaji, (2015), "The ionic liquid assisted green synthesis of hydroxyapatite nanoplates by Moringa oleifera flower extract: A biomimetic approach", Materials and design, Vol. 88, 1183-1190. (IF: 3.9).

51. S. Jegatheeswaran, S. Selvam, V. Sri Ramkumar and M. Sundrarajan, (2016), " Facile green synthesis of silver doped fluor-hydroxyapatite/β-cyclodextrin nanocomposite in the dual acting fluorine-containing ionic liquid medium for bone substitute applications", Applied surface science, Vol. 371, 468-478. (IF: 3.1).

52. S. Jegatheeswaran, S. Selvam, V. Sri Ramkumar, and M. Sundrarajan, (2016), "Novel strategy for f-HAp/PVP/Ag nanocomposite synthesis from fluoro based ionic liquid assistance: Systematic investigations on its antibacterial and cytotoxicity behaviors", Materials science and engineering C, Vol. 67, 8-19. (IF: 3.23).

53. S. Ambika and M. Sundrarajan, (2016), "[EMIM] BF4 ionic liquid-mediated synthesis of TiO2 nanoparticles using Vitex negundo Linn extract and its antibacterial activity", Elsevier, Journal of molecular liquids, Vol. 221, 986-992. (IF: 2.740) .

54. K. Bama and M. Sundrarajan, (2016), "Facile Synthesis and antimicrobial activity of manganese oxide/bentonite nanocomposite", Research on chemical intermediates, Springer, DOI: 10.1007/s11164-016-2765-7. (IF: 1.833).

55. K. Bama and M. Sundrarajan, (2016), "Synthesis and characterization of Mn3O4/BC nanocomposite and its antimicrobial activity" Jounral of inorganic and organometallic polymers and materials, Springer, DOI: 10.1007/s10904-016-0470-z. (IF: 1.308).

56. S.Selvam, B.Balamuralitharan, S.Jegatheeswaran, Mi-Young Kim, S.N.Karthicka, J.Anandha Raj, P.Boomi, M.Sundrarajan, K.Prabakar, Hee-Je Kim, (2016) "Electrolyte imprinted graphene oxide-Chitosan chelate with copper crosslinked composite electrodes for intense cyclic stable flexible supercapacitors" Journal of Materials Chemistry A, (In Press)