

## Faculty Profile

Name : Dr. M.N. Arumugham

Designation : Associate Professor

Specialization : Inorganic Chemistry



## Contact

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## Membership

The Society of Technical Education

## Projects (Total : 2)

### Co-Investigator

Title : Meso Heteroaromatic Porphyring: Synthesis and  
Physicochemical, Non-Linear Optical and Biological Studies.

Ref. No. : ERIP/ER/0403465/M/803 Dated 23.08.2005

### Principal Investigator

Title : Phthalocyanines and Metallophthalocyanines Synthesis,  
Physicochemical, Non Linear Optics, Sensor and Solar Studies

Duration : Three Years (On going)

Funding Agency : DRDO

Amount Sanctioned : 16.356 lakhs

Ref. No. : ERIP/ER/0804439/M/01/1222 Dated 21<sup>st</sup> April 2010.

## Publications

### Journals (Total : 16)

Title : Synthesis, Characterization of Copper (II) complex with mixed ligands of 1,10-phenanthroline, L-phenylalanine and ethylamine: Studies on DNA binding, Nuclease and Biological Activities,  
Author Name : P. Santhakumar and **M.N. Arumugham**  
Volume : 3  
Year : 2012  
Pages : 459-466

Title : Micellization of Metallosurfactant N-dodecyl/ Hdexadecyl/ Octadecyl Salicylaldimine Cobalt(III) Complexes in Non-aqueous Media.  
Author Name : S. Caleb Nobel Chandar, D. Sangeetha and **M.N. Arumugham**  
Volume : 40  
Year : 2011  
Pages : 841-848

Title : Synthesis, Structure, CMC values, Thermodynamics of Micellization, Steady-state Photolysis and Biological Activities of hexadecylamine Cobalt(III) dimethyl glyoximato Complexes  
Author Name : S. Caleb Nobel Chandar, D. Sangeetha and **M.N. Arumugham**  
Volume : 36  
Year : 2011  
Pages : 211-216

Title : Metallosurfactant Schiff base Cobalt(III) Coordination Complexes. Synthesis, Characterization, Determination of CMC values and Biological Activities.  
Author Name : S. Caleb Nobel Chandar, K.Santhakumar and **M.N. Arumugham**  
Volume : 34  
Year : 2009  
Pages : 841-848

Title : Thermodynamics and Micellar Properties of Some Surfaceactive Cobalt(III) Metallosurfactants in Non aqueous medium  
Author : K. Santhakumar, N. Kumaraguru, **M.N. Arumugham** and S. Arunachalam  
Name : International Journal of Chemical Kinetics  
Year : 2007  
Pages : 22

Title : Synthesis, Characterization and Micellization behavior of some surface active mixed – ligand complexes of Cobalt(III)  
Authors : N. Kumaraguru, K. Santhakumar, S. Arunachalam and **M.N. Arumugham**  
Name : Polyhedron  
Volume : 25  
Year : 2006  
Pages : 3253-3260

Title : Kinetics and the mechanism of Iron(II) reduction of *cis*-halogeno(cetylamine)(triethylenetetramine) cobalt(III) Complex ion in Aqueous acid medium\  
Authors : K. Santhakumar, N. Kumaraguru, S. Arunachalam and **M.N. Arumugham**  
Name : Transition Metal Chemistry  
Volume : 31  
Year : 2006  
Pages : 475-481

Title : Metallosurfactants of Chromium(III) Coordination Complexes. Synthesis, Characterization and Determination of CMC values  
Authors : N. Kumaraguru, S. Arunachalam, **M.N. Arumugham** and K. Santhakumar  
Name : Transition Metal Chemistry  
Volume : 31  
Year : 2006  
Pages : 250-255

Title : Studies on Cobalt(III) Metallosurfactants, Kinetics and mechanism of reduction of Cobalt(III) by Iron(II) in aqueous acid medium.  
Authors : K. Santhakumar, N. Kumaraguru, S. Arunachalam and **M.N. Arumugham**  
Name : Transition Metal Chemistry

Volume : 31  
Year : 2006  
Pages : 62-70

Title : Metallomicelles of Cobalt(III) coordination complexes.  
Synthesis, Characterization and Determination of CMC values.  
Authors : K. Santhakumar, N. Kumaraguru, **M.N. Arumugham**  
and S. Arunachalam

Name : Polyhedron  
Volume : 25  
Year : 2006  
Pages : 1507-1513

Title : Kinetics of Iron(II) Reduction of *cis*-halogeno(dodecylamine)  
bis(ethylenediamine) Cobalt(III) Complex ion in Aqueous  
Solutions

Authors : K. Santhakumar, N. Kumaraguru, S. Arunachalam  
and **M.N. Arumugham**

Name : International Journal of Chemical Kinetics  
Volume : 38  
Year : 2006  
Pages : 98-105

Title : Photochemical Oxygenation reactions of Cobalt(III) amine  
complexes in aqueous and non aqueous solvents: Formation of  $\mu$ -  
peroxodinuclear complex in Cobalt(II) system.

Authors : K. Santhakumar, N. Kumaraguru, **M.N. Arumugham** and S.  
Arunachalam

Name : Asian Journal of Chemistry  
Volume : 15  
Year : 2003  
Pages : 991-998

Title : Synthesis and Characterization of Cationic Surfactant Cobalt(III)  
Complexes containing 3,8-dimethyl-5,6-benzo-4,7-diazo-3,7-  
diene-2,9-dione dioxime

Authors : **M.N. Arumugham**, K. Santhakumar and S. Arunachalam

Name : Asian Journal of Chemistry  
Volume : 15  
Year : 2003  
Pages : 191-196

Title : *trans*-bis(dodecylamine) bis dimethylglyoximato)Cobalt(III) nitrite  
Authors : P. Lavanya, K. Pancanatheswaran, **M.N. Arumugham** and S. Arunachalam  
Name : Journal of Chemical Crystallography  
Volume : 28  
Year : 1997  
Pages : 83-86

Title : Synthesis and Characterization of Some neutral amphipathic cobaloxime complexes  
Authors : **M.N. Arumugham** and S. Arunachalam  
Name : Indian Journal of Chemistry  
Volume : 36A  
Year : 1997  
Pages : 315-316

Title : Synthesis and characterization of Some surfactant Cobalt(III) Complexes  
Authors : **M.N. Arumugham** and S. Arunachalam  
Name : Indian Journal of Chemistry  
Volume : 36A  
Year : 1997  
Pages : 84-87

### **Papers Presented in National level Conference**

1. Synthesis, Characterization, DNA binding and Cleavage Properties of Ternary Copper(II) Complex of 1,10-phenanthroline, L-threonine and Thiourea as ligands and their antimicrobial Activities. Recent Advances in Inorganic Chemistry, March 22-24, 2012  
**Organized By** Bharathidasan University, Trichy.
2. Synthesis, Characterization, DNA Binding and cleavage properties of Ternary Copper(II) Complex of 1,10-Phenanthroline, L-Threonine and Semicarbazide as ligands and their antimicrobial Activities. Chennai Chemistry Conference 2011, February 11-13, 2011.  
**Organized By** IIT Madras.
3. Synthesis, Characterization and DNA binding studies of copper (II) complexes with 1,10-phenanthroline, L-tyrosine and Ethylamine ligands. National Conference on Current Trends in Chemistry (NCCTC -10), 2-3<sup>rd</sup> December 2010.  
**Organized By** Bharathiar University, Coimbatore.

4. Synthesis, Characterization, DNA binding studies and biological and Nuclease activities of copper (II) complexes with 1,10-phenanthroline, L-Alanine, National Conference on Current Trends in Chemistry (NCCTC -10), 2-3<sup>rd</sup> December 2010,  
**Organized By** Bharathiar University, Coimbatore.
5. Synthesis, Characterization copper (II) complexe with 1,10-phenanthroline, L-Phenylalanine: Studies on DNA binding and nuclease activity, National Conference on Current Trends in Chemistry (NCCTC -10), 2-3<sup>rd</sup> December 2010.  
**Organized By** Bharathiar University, Coimbatore.
6. Synthesis, Characterization and DNA binding study of 1,10-phenanthroline Cobalt(III) complexes, National Conference on Current Trends in Chemistry (NCCTC -10), 2-3<sup>rd</sup> December 2010.  
**Organized By** Bharthiar University, Coimbatore.
7. Synthesis, Characterization, DNA binding and Cleavage properties of Ternary copper (II) complex of 1,10-phenanthroline, L-Threonine and Ethylamineas ligands and their Antimicrobial Activities, National Conference on Current Trends in Chemistry (NCCTC -10), 2-3<sup>rd</sup> December 2010.  
**Organized By** Bharthiar University, Coimbatore.
8. Synthesis, Characterization and DNA binding studies of cobalt (III) complexes containing of 2,2'- bipyridal, Schiff base, National Conference on Current Trends in Chemistry (NCCTC -10), 2-3<sup>rd</sup> December 2010.  
**Organized By** Bharthiar University, Coimbatore.
9. Synthesis, Characterization, DNA binding and Cleavage properties of Ternary copper (II) complexof 1,10-phenanthroline, L-Threonine and Semicarbazide as ligands and their Antimicrobial Activities, National Conference on Current Trends in Chemistry (NCCTC -10), 2-3<sup>rd</sup> December 2010.  
**Organized By** Bharthiar University, Coimbatore.
10. Synthesis, Spectra, and Biological activity of Hexadecyl amine Cobalt(III) Dimethyl glyoximato complexes. National seminar on current development in chemistry, Jan. 18 & 19, 2007.  
**Organized By** Bharathiar University, Coimbatore.
11. Unusual solvent dependent optical absorption spectral properties of free – base Meso halo porphyrins. National seminar on current development in chemistry, Jan. 18&19, 2007.  
**Organized By** Bharathiar University, Coimbatore.
12. Synthesis and biological activities of some Novel surfactant Cobalt (III) Complexes. 40<sup>th</sup> Annual convention of chemists, Indian Chemical Society, 24-27 Dec 2003.  
**Organized By** Bundelhand University, Jhansi.

13. Evaluation of waste water for Irrigation purpose. National conference on, Balancing competing water uses and management, 27-29 March 2003.  
**Organized By** Bharathidasan University, Trichy.
14. Photoredox Behaviour of a Micelle formable Surfactant Cobalt (III) Amine Complex: Steady and Laser Flash Photolysis studies. 1999.  
**Organized By** BARC Mumbai.
15. Steady and Laser flash photolysis- Studies of a surfactant cobalt (III) amine complex in micellar media. Relevance of some advanced chemical Research in independent India, 16-17 March 1998.  
**Organized By** Bharathidasan University, Trichy.
16. Emission quenching of some Cobalt(III) surfactant complexes by  $[\text{Ru}(\text{bpy})_3]^{2+}$ . Relevance of some advanced chemical Research in independent India, 16-17 March 1998.  
**Organized By** Bharathidasan University, Trichy.
17. Micelle forming properties of some surfactant cobalt (III) complexes. Relevance of some advanced chemical Research in independent India, 16-17 March 1998.  
**Organized By** Bharathidasan University, Trichy.
18. Emission quenching of some Cobalt (III) Surfactant Complexes by  $\text{Ru}(\text{bpy})_3^{2+}$ . Conference on Indian Council of Chemists, 1998.  
**Organized By** CLRI Chennai.
19. Photolinkage Isomerism of a micelle formable surfactant Cobalt(III) amine Complex. Eleventh International Conference on Photochemical conversion and Storage of Solar Energy (IPS – 11), August 5 & 6, 1996.  
**Organized By** Madurai Kamaraj University
20. Crystal and Crystal and Molecular Structure of the Surfactant Complex *trans*-bis(dodecylamine) bis(dimethylglyoximato) Cobalt (III) nitrite. MBU Silver Jubilee symposium on Structural Biology and 24<sup>th</sup> Annual Meeting of the Indian Biophysical society, 9 – 12 Decemeber, 1996.  
**Organized By** IISc Bangalore.
21. Charge Transfer Photochemistry of Cobalt(III) amine Complex. UGC – DRS National Seminar on “New Trends in Dynamic and Structural Studies in Inorganic and Physical Chemistry, March 1-3, 1995.  
**Organized By** Madurai Kamaraj University.
22. Photochemistry of Some Surfactant Cobalt(III) Complexes. Indian photobiology Society IX National Symposium, March 4 & 5, 1994.  
**Organized By** Centre for Cellular and Molecular Biology, Hyderabad.

## Papers Presented in International level Conference

1. Synthesis, Characterization and Sensor study of Tetrakis(dodecyloxy)copper(II) phthalocyanine. Internal Conference on Recent Trends in Advanced Materials, February 20-22, 2012.  
**Organized By** Vellore Institute of Technology, Vellore.
2. Synthesis, Characterization and Sensor study of Tetrakis(dodecyloxy) phthalocyanine. Internal Conference on Recent Trends in Advanced Materials, February 20-22, 2012.  
**Organized By** Vellore Institute of Technology, Vellore.
3. Synthesis, characterization of Copper(II) complex with mixed ligands of 1,10-Phenanthroline, L-Phenylalanine and Thiourea: Studies on DNA binding, Nuclease and Biological Activities. Internal Conference on Recent Trends in Advanced Materials, February 20-22, 2012.  
**Organized By** Vellore Institute of Technology, Vellore.
4. Synthesis, Characterization, DNA Binding and cleavage properties of Ternary Copper(II) Complex of 1,10-Phenanthroline, L-Threonine and Thiosemicarbazide as ligands and their antimicrobial Activities. Internal Conference on Recent Trends in Advanced Materials, February 20-22, 2012.  
**Organized By** Vellore Institute of Technology, Vellore.
5. Synthesis, Characterization, DNA Binding studies and Antimicrobial Activity of Copper(II) Complexes with 1,10-Phenanthroline, L-Tyrosine and Thiourea as ligands. Internal Conference on Recent Trends in Advanced Materials, February 20-22, 2012.  
**Organized By** Vellore Institute of Technology, Vellore.
6. Synthesis, Characterization, DNA binding studies and biological and Nuclease Activities of Copper(II) Complexes containing of 1,10-Phenanthroline and L-Alanine. Internal Conference on Recent Trends in Advanced Materials, February 20-22, 2012.  
**Organized By** Vellore Institute of Technology, Vellore.
7. Thermodynamics of micellization, steady state photolysis and Biological activities of Octadecylamine Cobalt(III) dimethyl glyoximato Complexes. International Conference on Chemistry: Frontiers and Challenges, March 5-6, 2011.  
**Organized By** Aligarh Muslim University, Aligarh.
8. Synthesis, Structure, DNA binding and antimicrobial studies of Cobalt(III) Complex containing triethylenetetramine and 1,10-phenanthroline ligands. International Conference on Chemistry: Frontiers and Challenges, March 5-6, 2011.  
**Organized By** Aligarh Muslim University, Aligarh.
9. Synthesis, Characterization, DNA Binding and antimicrobial studies of Cobalt(III) Complex containing the 1,10-phenanthroline, salicylaldimine Schiff Base as ligands. International Conference on Chemistry: Frontiers and Challenges, March 5-6, 2011.



**Organized By** Aligarh Muslim University, Aligarh.

10. Synthesis and Biological Activities of Surfactant Schiff's Base Compounds. International Symposium on Advances in Organic Chemistry, January 9-12, 2006.

**Organized By** Mahathma Gandhi University, Kottayam.

11. Photochemical oxygenation reactions of Cobalt (III) amine complexes in aqueous and non-aqueous solvents, Formation of  $\mu$ -peroxodinuclear complexes of Cobalt (II). 14<sup>th</sup> International conference on photochemical conversion and storage of solar energy, 4-7<sup>th</sup> August 2002.

**Organized By** Hokkaido University in Sapporo, Japan.

12. Synthesis, spectra and biological activities of cationic surfactant cobalt(III) complexes, XXXV<sup>th</sup> International conference on co-ordination chemistry, 21-26<sup>th</sup> July 2002.

**Organized By** University of Heidelberg, Heidelberg, Germany.

13. Micellar Effect on the Charge transfer Photochemistry of Some Surfactant Cobalt(III) amine Complexes. Eleventh International Conference on Photochemical conversion and Storage of Solar Energy (IPS – 11), July 28 to August 02, 1996.

**Organized By** Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore.

**Books (Total Books 0)**