



MADURAI KAMARAJ UNIVERSITY
(University with Potential for Excellence)

MADURAI-625 021

SCHOOL OF CHEMISTRY



The nucleus of the present School of Chemistry was formed when the University of Madras established an extension centre at Madurai in 1958. Having a humble beginning as the Department of Chemistry in 1966 of the then established Madurai University; it has later bloomed into a full-fledged School. The School now comprises of five Departments–Inorganic, Organic, Physical, Natural Products and Materials Science with a faculty strength of 22 endowed with rich teaching and research expertise in diverse frontier areas such as synthesis of novel molecules, bioorganic-mimics, biomolecules from natural sources, screening for important bioproperties like anticancer, molecular modeling, EPR imaging, photoprocesses, supramolecules and its molecular recognition studies, development of novel reagents and reactions, photo catalysis, green chemical routes for organic transformations, non-heme enzyme model, fixation of carbon dioxide into potential fuels, nanomaterials and their application to organic electronics, molecular electronics, molecular robotics, and biomolecular nanomachines, sensors for heavy metals and biomolecules, etc.

Such a unique blend of diverse expertise of faculty in different research areas has elevated the School as a prestigious one in Madurai Kamaraj University which provides an excellent opportunity to students who come out creditably successful in competitive exams such as UGC/CSIR and GATE. The School offers M.Sc., M.Phil., and Ph.D programs. Currently, around 120 scholars are engaged in research work for their Ph.D. The students are highly placed in teaching and research positions and industries both in India and abroad. The School has made more than 625 publications in reputed international and national journals in the last five years. The School has been recognized under the UGC-DRS (Phase I), UGC-SAP(I), UGC-ASIST and DST-FIST programme.

VISION AND MISSION

To conduct world class master degree courses and Advanced Research in all branches of Chemistry

FACULTY PROFILE:

Name with designation, Stamp size color photograph, Specialized area of Research (limited to two), Phone No., Email address (Will begin with Chairperson - followed by Departments (in alphabetical order) - the order of faculty members as per Seniority list administered by the University)

DEPARTMENT OF ORGANIC CHEMISTRY



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Dr. S. Sivakumar, Assistant Professor, Synthesis and Characterization of Bi-Imaging Molecules, Synthesis of Biologically important O,N,S containing small Heterocycles, Mobile : +91 9715452858, Email: shivazzen@gmail.com, shivazzen.chem@mkuniversity.org

DEPARTMENT OF INORGANIC CHEMISTRY

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Dr. A. Siva, Assistant Professor, Supramolecular Chemistry, Bioinorganic Chemistry, Asymmetric Synthesis, Mobile No. +91-8489120875; Email: drasiva@gmail.com



DEPARTMENT OF PHYSICAL CHEMISTRY

Dr. G.Gnanakumar, Head-In-charge, Assistant Professor, Electrochemistry, Fuel cells, Solar cells, Nanotechnology, 9585752997, kumarg2006@gmail.com



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Dr. R. Mayilmurugan, Assistant Professor, Bioinspired Catalysis – Activation of Small Molecules (Oxygen and Hydrogen) - Mobile : +91 9943041049, Email: mayilmurugan.chem@mkuniversity.org; ramamayil@gmail.com.



DEPARTMENT OF NATURAL PRODUCTS CHEMISTRY

Dr. V. S. Vasantha,

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Dr. P. Suresh, Assistant Professor, Transition Metal catalyzed C-H activation/coupling reactions, Carbocatalysis/Enantioselective Catalysis, Mobile : +91 9790296673, Email: gchemistry@gmail.com, gchemistry@yahoo.com; suresh.chem@mkuniversity.org



Dr. M. Rajan, Assistant Professor, Biomaterials in Medicinal Applications, Drug delivery and Bone implantations, Mobile: 9488014084, Email: rajanm153@gmail.com; rajanm153.chem@mkuniversity.org



DEPARTMENT OF MATERIALS SCIENCE

Dr. J. Annaraj, Assistant Professor, Bioinorganic Chemistry, Nanobiomaterials for drug delivery, Mobile: 8098478272, Email: jjannaraju@gmail.com



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Other Faculty



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Dr. ArlinAmali Jose, Nanostructured Materials Nano catalysis, DST-INSPIRE Faculty, Mobile: 9952762543, Email: jose.arlin@gmail.com

Emeritus Scientists

Dr. S. Muthusubramanian, CSIR Emeritus Scientist Supramolecular Chemistry; Heterogeneous Catalysis; Sensors. Mobile: + 91 9443190983, Email: muthumanian@gmail.com



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Dr. R. Ramaraj, CSIR Emeritus Scientist Nano materials and their Applications in Solar Energy Conversion, Catalysis and Sensors. Mobile: + 91 8903971420, Email: ramarajr@yahoo.com



Courses Offered:

| No | Course | Intake per year | Essential Qualifications for admission |
|----|-------------------------|-----------------|--|
| 1 | M.Sc.Chemistry | 45 | B.Sc. Chemistry |
| 2 | M.Phil.Chemistry | 30 | M.Sc Chemistry |
| 3 | M.Phil.MaterialsScience | 6 | M.Sc Chemistry/Phycis |
| 4 | PhD.Chemistry | 120 at present | M.Sc Chemistry |
| 5 | PhD. Materials Science | 15 at present | M.Sc &M.Phil. Chemistry/Phycis |

Ongoing Projects:

The List of on-going project with thrust areas

| S.No. | Name of the PI | Title | Sponsoring Agency | Thrust areas |
|-------|----------------------------|--|-------------------|---|
| 1. | Dr. K. MurugaPoopathi Raja | Biophysical probing on conformations and aggregation properties of poly-Glutamine Peptides | DST | Biophysical Chemistry, PolyQ, Peptide aggregation, Neurodegenerative disorder |
| 2. | Dr. K. MurugaPoopathi Raja | Biophysical Investigation on the folding Aggregation of Homo-Asparagine peptide Repeats in plasmodium falciparum proteome | DBT | Biophysical Chemistry, PolyN, Peptide aggregation, proteome analysis |
| 3. | Dr. K. MurugaPoopathi Raja | Design, Development and Evaluation of Peptide based inhibitors for Bacillus anthracis | DRDE | Peptide inhibitors, Anthrax, Biophysical chemistry |
| 4. | Dr.A. Arlin Jose Amali | Designing strategies to recover and recycle the homogeneous chiral catalysts by immobilizing on magnetic materials: Application in Asymmetric Transfer Hydrogenation of ketones and imines | DST | Nanocatalysis, Magnetic Materials |
| 5. | Dr.M. Rajan | Nanoformulation of drugs from selected Zingiberaceae family plants using natural biopolymers for controlled and targeted drug delivery | UGC | Nanoformulations |
| 6. | Dr.M. Rajan | Development of self-repair and biocompatible orthopedic implants for osteosarcoma tissue engineering | DST | Tissue engineering |
| 7. | Dr.M. Rajan | Nano encapsulation of anti- TB drugs into multilayer biopolymer nanocomposites | DST | Nano encapsulation |
| 8. | Dr. G.Gnanakumar | Graphene based ORR catalyst equipped waste water treatment microbial fuel cells for the enhanced bioelectricity generation and clean water and phosphate extraction | DST | Bioelectricity generation |
| 9. | Dr. G.Gnanakumar | Synthesis, structural, thermal and electrochemical characterizations of chitosan polymer composites for fuel cell applications | UGC | Fuel Cell |
| 10. | Dr. A. Siva | Triarylamine and Carbazole-Based Hole Transporting Materials and Their Applications in Efficient Organic Solar Cells | DST | Organic Solar Cells Hole Transporting Materials |
| 11. | Dr. A. Siva | Investigation of New Hole Transporting Materials for Efficient Perovskite Organic-Inorganic Hybrid Solar Cells | DST | Organic-Inorganic Hybrid Solar Cells Perovskites |
| 12. | Dr. A. Siva | Supramolecular Architectures of Azo Derivatives: Properties and Applications | CSIR | Supramolecular Architectures |
| 13. | Dr. A. Dhakshinamoorthy | Engineering Metal Organic Frameworks for the Selective Oxidation of Hydrocarbons | DST-SERB | Metal Organic Frameworks |
| 14. | Dr. M. Jeyanthinath | Nano-structured oxide materials for thermo-electric applications | DST-DAAD | Thermo-electric applications |

Major Events: (photographs, if suitable)

- University Grants Commission and Madurai Kamaraj University sponsored one-day national seminar on “**Catalysis and Catalyzed Reactions**” at School of Chemistry, Madurai Kamaraj University, Madurai March 28, 2014.
- DST-SERB and Madurai Kamaraj University sponsored one-day National Seminar on “**Recent trends in Chemistry**” held at School of Chemistry, Madurai Kamaraj University, Madurai September 11, 2015.
- Two days national conference on “**Biomaterials and medicinal chemistry (BMC-2015)**” – 21- 22 December 2015 at School of Chemistry, Madurai Kamaraj University, Madurai.
- Two days national conference on “**Biomaterials and medicinal chemistry (BMC-2017)**” – 12- 13 April, 2017 at School of Chemistry, Madurai Kamaraj University, Madurai.
- DST sponsored one day national conference on “**Current Trends in Organic Synthesis**” on 19 June 2013 at School of Chemistry, Madurai Kamaraj University, Madurai.



Infrastructural Facilities

Name of Equipment

NMR (300 MHz)
CD Spectropolarimeter
LC-MS
Electrochemical workstation (4 Nos)
ESR
FT-IR
HPLC
Particle size analyzer
DC/RF sputtering unit
Spectrofluorimeter
GC-MS
CVD
Diode array spectrophotometer (3 Nos)
UV-vis with DRS
Electrospinning unit
Microwave synthesizer

CD

ELEMENTAL ANALYSER

CV



ESR**FLUORESCENCE****FT-IR****HPLC****LCMS****NMR****AAS****SPECTROFLUOROMETER****MICROWAVE SYNTHESIZER****ELECTROCHEMICAL WORKSTATION****SPUTTERING UNIT****COMPUTER LAB FOR STUDENTS****M.Sc. Lab****School Auditorium**

Awards and Achievements: (International / National)

Distinction earned by faculty members like National and International Awards, Professional Societies (2012 to present)

(a) The following faculty have been awarded the UGC Raman Fellowship during 2012-2016
 Dr. V. Padmini (2013); Dr. S. Sivakumar (2013); Dr. M. Jeyanthinath (2014);
 Dr. G. Gnanakumar (2016); Dr. P. Suresh (2016)

(b) Dr. M. Jeyanthinath has been awarded the DST-DAAD award (2017)

(c) Prof. R. Ramaraj has the distinction of being the Fellow of all three National Science Academies, i.e. FNASc, FASc and INSA. He is also a Member, National Science Education Panel, Indian Academy of Sciences (2010-2015) and Member, National Committee of IUPAC (INSA-ICSU), INSA, New Delhi, (2012-2015). He has been the Joint Secretary, Chemical Research Society of India (crsi), Bangalore (2014-2017)

- (d) Prof. S. Perumal, Former Emeritus Scientist, received UGC Basic Science Research (BSR) award (2013-2016) and Bronze medal of Chemical Research Society of India (Feb 2014)
- (e) Dr. R. Mayilmurugan was awarded Fulbright Fellowship (2014) and the Fulbright outreach fund (2015). He also received the Indian National Science Academy-Deutsche Forschungsgemeinschaft bilateral exchange program award to visit Germany for three months (2014)
- (f) Dr. A. Dhakshinamoorthy received Young Scientist Award 2014 for Chemical Sciences, The Academy of Sciences, Chennai. Also he received the Indian National Science Academy-Deutsche Forschungsgemeinschaft bilateral exchange program award to visit Germany for three months (May to July, 2015)
- (g) Dr. R. Saraswathi: Recognized Trainer Associate in UGC - Capacity Building Program for Women Managers in Higher Education (2012)
- (h) The following faculty were awarded Emeritus Fellowship:
 Prof. S. Perumal (UGC-BSR, 2013-2016); Prof. R. Ramaraj (CSIR, 2017)
 Prof. S. Muthusubramanian (CSIR, 2017); Prof. K. Pitchumani (UGC (2016) & CSIR (2017))
- (i) Dr. K. MurugaPoopathi Raja has been awarded the Indian National Science Academy-Deutsche Forschungsgemeinschaft bilateral exchange program award to visit Germany for three months (2017)

Extension Activities:

Village adoption - Vadakkampatti Village, Kallikudi Taluk, Madurai District



International Year of Chemistry – 2011, “Nationwide Sensitization Workshop on Chemistry Teaching”



Part IX: Contact Details:

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