



**SRM**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University u/s 3 of UGC Act, 1956)



# 8<sup>TH</sup> INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN MATERIAL CHEMISTRY **ICRAMC - 2024**

ORGANISED BY



**SRM**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University u/s 3 of UGC Act, 1956)

DEPARTMENT OF CHEMISTRY  
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY  
Kattankulathur - 603 203, India.

FEBRUARY 15-17, 2024

About the Institution: SRM IST is one of the top ranking universities in India with over 50,000 students and 3,200 faculty members, offering a wide range of undergraduate, postgraduate and doctoral programs in Engineering, Management, Medicine and Health sciences and Science and Humanities. It has established itself as a premier centre for teaching, research and industrial, consultancy in the country. It has world class infrastructure including smart classrooms, hi-tech labs, advanced instruments and equipments, research laboratories, modern library and Wi-Fi facility. SRM IST is Accredited by NAAC with A + + grade in 2018.

IN ASSOCIATION WITH



CEA, France  
ALTERNATIVE ENERGIES  
AND  
ATOMIC ENERGY  
COMMISSION (CEA)  
&  
UNIVERSITE GUSTAVE  
EIFFEL FRANCE

About the Department: Department of Chemistry, SRM IST has been engaged in opening up the fascinating world of Chemistry to students since 1985. The Department is supported by DST-FIST, Govt of India. The Department is offering B.S. (Chemistry), B.Sc. (Chemistry), M.Sc. (Chemistry), M.Sc. (Organic Chemistry) and Ph.D (Chemistry) programs. It has 55 faculty members whose areas of expertise and research include organic, inorganic, physical, analytical, environmental, electrochemistry and nanotechnology. The main objective of this conference is to provide platform for constructive ideas on recent trends and innovative approaches in efficient use of materials in the field of chemical sciences.

## ANNOUNCEMENT AND FIRST CALL FOR PAPERS

### Important Dates

Early Bird Registration	: 31-12-2023
Acceptance of Abstract	: 02-01-2024
Last Date for Abstract Submission	: 31-12-2023
Submission of Full Paper	: 31-01-2024
Last Date for Registration	: 31-01-2024

The conference will provide a good platform to find a suitable research collaborator in home and abroad. The brain storming session paves the way to submit joint research proposals for funding between India and rest of the world.

### PATRONS

Dr. T. R. Paarivendhar, Founder Chancellor, SRM IST  
Dr. Ravi Pachamuthu, Pro Chancellor, (Admin. SRMIST)  
Dr. P. Sathyanarayanan, Pro Chancellor, (Academics, SRMIST)

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Prof. Chien-Hsiang Chang, NCKU, Taiwan  
Prof. Sodio C.N. Hsu, KMU, Taiwan

## Conference Topics

Advanced Energy Materials | Nanomaterials | Drug Delivery System | Eco Friendly Materials | Hydrogen and Fuel Cells | Functional Materials, Seismic Materials | Quantum Dots | Materials Testing and Evaluation | Microwave Processing of Materials | Sensors / Biosensors | Polymeric Materials | Bio Materials and Bio Devices | Optical, Electronic and Magnetic Materials | Structural Materials | Computational Materials | Composite and Hybrid Materials | Soft & Smart Materials | Materials for Photocatalysis and Photoelectrocatalysis | Materials for Dye-sensitized Solar Cells | Materials for Corrosion Protection | Electroactive Materials

**Best presentations will be selected for the award.**

**All the accepted papers will be peer reviewed and the selected papers will be published in Scopus Indexed Journals**

Category	Early Bird Registration for Indian Delegates (before 31-12-2023) (Fee INR)	Late Registration for Indian Delegates (After 31-12-2023) (Fee INR)	Early Bird Registration for Foreign Delegates (before 31-12-2023) (Fee USD)	Late Registration for Foreign Delegates (After 31-12-2023) (Fee USD)	Registration fees shall be paid online transaction or by DD drawn in favour of "Chemistry Department Association" payable at Chennai must be sent to the convenor along with registration form.
Students / Research Scholars	4,000	5,000	250	300	
Academic / R&D Participants	5,000	6,000	400	500	
Industry	6,000	7,000	500	550	

Convenor: Dr. M. Arthanareeswari, Prof. & Head, Department of Chemistry, SRMIST, Kattankulathur. Ph: 044-27417872

Mailing Address: Convenor - ICRAMC 2024  
Department of Chemistry, College of Engineering and Technology, SRM IST  
Kattankulathur - 603 203, India. Website: <https://www.srmist.edu.in/events/icramc-2024>  
E-mail: [icramc.2024.ktr@srmist.edu.in](mailto:icramc.2024.ktr@srmist.edu.in) Contact No.: + 91 90802 73919 / +91 94980 53414

For online transfer use the following details:  
Name of the Account: Chemistry Department Association  
Name of Bank: CITY UNION BANK  
A/C.no: 500101011069471 Branch: Tambaram, IFSC: CIUB0000117

Our Ranking



A++



Category I  
with 12B Status



(2023)  
Ranked 18<sup>th</sup> University



(2024) World Ranking  
one among 45 Indian Universities



(2023) World Ranking  
one among 75 Indian Universities



VERY GOOD  
QS 4 Star Rated Globally



(2022) World Ranking  
one among 14 Indian Universities





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## DEPARTMENT OF CHEMISTRY SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

*Cordially invites you to the Inauguration of the*

### 8<sup>TH</sup> INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN MATERIAL CHEMISTRY **ICRAMC - 2024**

**FEBRUARY 15-17, 2024**

*Organized by*



**Department of Chemistry**  
**SRM Institute of Science and Technology**  
Kattankulathur – 603203, Tamil Nadu, India

*In Association with*



CEA, France



**Université  
Gustave Eiffel**

**Alternative Energies and  
Atomic Energy Commission (CEA) &  
Universite Gustave Eiffel, France**

**Prof. G. Mugesh**  
**Chief Guest**

Dean, Division of Chemical Sciences  
Department of Inorganic & Physical Chemistry  
Indian Institute of Science, Bangalore

*Inaugurates the conference*

**Prof. C. Muthamizhchelvan**  
**Vice Chancellor**

SRM Institute of Science and Technology  
Kattankulathur

*Presides & Releases the Proceedings*

**Venue: Dr. T.P. Ganesan Auditorium, Mini Hall-1 / Date & Time: 15.2.2024, 9.30am**

Our Ranking



A++



Category I  
with 129 Status



(2023)  
Ranked 6<sup>th</sup> University



(2024) World Ranking  
one among 45 Indian Universities



(2023) World Ranking  
one among 75 Indian Universities



VERY GOOD  
QS 4 Star Rated Globally



(2022) World Ranking  
one among 14 Indian Universities

**PROGRAMME**

**INAUGURAL FUNCTION**

15<sup>th</sup> February 2024, Time: 9.30 am. -10.00 am.

**Invocation**

**Welcome Address**

**Dr. M. Arthanareeswari**

Convener  
ICRAMC-2024

**Presidential Address**

**Prof. C. Muthamizhchelvan**

Vice Chancellor  
SRMIST, Kattankulathur

**Introduction of the  
Chief Guest**

**Dr. K. Ananthanarayanan**

Coordinator  
ICRAMC-2024

**Inaugural Address**

**Prof. G. Mugesh**

Dean, Division of Chemical Sciences  
Department of Inorganic &  
Physical Chemistry  
Indian Institute of Science  
Bangalore

**Vote of Thanks**

**Dr. Gopal Chandru Senadi**

Coordinator  
ICRAMC-2024

<b>DATE: 15.02.2024 (Day 1)</b>	
9.30 am – 10.00 am	<b>Inaugural Session</b>
10.00 am - 10.45 am	<b>Plenary Talk</b> <b>Prof. G. Mugesh</b> Dean, Division of Chemical Sciences Department of Inorganic & Physical Chemistry Indian Institute of Science, Bangalore <b>Title: Nanomaterials as Artificial Enzymes for Biomedical Applications</b>
10.45 am – 11.00 am	<b>Tea Break</b>
<b>Technical Program</b>	
11.00 am – 11.45 am	<b>Invited Talk – 1</b> <b>Prof. Chang Woo LEE</b> Director, Center for the SMART Energy Platform (CSTEP) & Electrochemical Energy Storage & Conversion Laboratory (EESC), Department of Chemical Engineering, College of Engineering, Kyung Hee University, South Korea <b>Title: Materials Design Strategy for Sodium-ion Batteries</b>
11.45 am – 12.30 pm	<b>Invited Talk – 2</b> <b>Dr. Hyunwoong Park</b> Professor, School of Energy Engineering Kyungpook National University, Daegu, South Korea <b>Title: A Technical Progress Towards Artificial Photosynthesis Factory</b>
12.30 pm – 1.00 pm	<b>Oral Presentation - Session 1</b>
1.00 pm – 2.00 pm	<b>Lunch break / Poster Presentation</b>
2.00 pm – 2.45 pm	<b>Invited Talk – 3</b> <b>Dr. Jiaqian QIN</b> Metallurgy and Materials Science Research Institute, Chulalongkorn University, Bangkok, Thailand <b>Title: Regulation of Zn plating and stripping for stable Zn ion battery</b>
2.45 pm – 3.30 pm	<b>Invited Talk – 4</b> <b>Prof. V. Baskar</b> School of Chemistry, University of Hyderabad, Telangana, India. <b>Title: Group 15/16 Metal ions based Molecular Assemblies and their Applications Towards Tuning Optical Bandgaps to Electrocatalysts for HER</b>
3.30 pm – 4.15 pm	<b>Oral Presentation - Session 2</b>
4.15 pm – 4.30 pm	<b>Tea Break</b>
4.30 pm – 6.00 pm	<b>Poster Presentation - Session 1</b>
<b>DATE: 16.02.2024 (Day 2)</b>	
9.00 am – 9.45 am	<b>Invited Talk – 5</b> <b>Dr. Cecilia Menard-Moyon</b> CNRS Research Director, Immunology, Immunopathology and Therapeutic Chemistry, Institut de Biologie Moléculaire et Cellulaire, Strasbourg Cedex, France <b>Title: Multifunctional carbon nanomaterials for anticancer therapy</b>



9.45 am – 10.30 am	<b>Invited Talk – 6</b> <b>Dr. Gregory Pieters</b> Group leader and Research Scientist, CEA Saclay (Tritium Labelling Laboratory, SCBM), France <b>Title: Chiral Fluorophores: Design, structure/properties relationship and application</b>
10.30 am – 10.45 am	<b>Tea Break</b>
10.45 am – 11.30 am	<b>Invited Talk – 7</b> <b>Prof. Wan Pyo Hong</b> Department of Chemistry, Gachon University, South Korea <b>Title: Carbazole Derived TADF and HLCt Materials for Efficient Deep Blue OLEDs</b>
11.30 am – 1.00 pm	<b>Oral Presentation - Session 3</b>
1.00 pm – 2.00 pm	<b>Lunch break</b>
2.00 pm – 7.30 pm	<b>Sight Seeing</b>
<b>DATE : 17.02.2024 (Day 3)</b>	
9.30 am – 10.15 am	<b>Invited Talk - 8</b> <b>Prof. Huynh Han Vinh</b> Department of Chemistry, National University of Singapore, Singapore <b>Title: A Unified Electronic Parameter and its Applications</b>
10.15 am – 11.00 am	<b>Invited Talk – 9</b> <b>Dr.S.N. Jaisankar</b> Chief Scientist, CSIR-Central Leather Research Institute, Chennai, Tamil Nadu, India <b>Title: Strain sensor based on polyurethane elastomers for human motion monitoring</b>
11.00 am – 11.15 am	<b>Tea Break</b>
11.15 am – 12.15 pm	<b>Poster Presentation - Session 2</b>
12.15 pm – 1.00 pm	<b>Oral Presentation - Session 4</b>
1.00 pm – 2.00 pm	<b>Lunch Break</b>
2.00 pm – 2.45 pm	<b>Invited Talk – 10</b> <b>Prof. Sangaraju Shanmugam</b> Department of Energy Science & Engineering Daegu Gyeongbuk Institute of Science and Technology (DGIST), South Korea <b>Title: Energy Storage Technologies for a Sustainable Future</b>
2.45 pm – 3.30 pm	<b>Oral Presentation – session 5</b>
3.30 pm – 4.30 pm	<b>Valedictory Session</b>



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 Kattankulathur 603203

## Report

The Department of Chemistry, SRM IST organized the 8<sup>th</sup> International Conference on Recent Advances in Material Chemistry (ICRAMC-2024) between 15-17, February 2024 at SRM Institute of Science and Technology, Chennai, Tamil Nadu.

This conference was one of the most comprehensive materials related conferences to take place in India in 2024. The three-day conference was organized in association with Alternative Energies and Atomic Energy Commission (CEA), France and University Gustave Eiffel, France. ICRAMC-2024 was provided an excellent platform for the world's Material Scientists to share the latest developments in the area of Materials Chemistry. The conference programme encompassed the following cutting edge research topics related to materials chemistry, to name a few: Advanced Energy Materials, Drug Delivery systems, Battery technologies, Functional Materials, Sensors, Hybrid Materials, Surface Coatings, Bio-materials and Bio-devices etc. The primary objective of ICRAMC-2024 was to provide a rich platform for participants to share and discuss their recent research findings related to Material Chemistry.

The conference featured plenary lecture, invited and contributed talks as well as poster presentations organized in different sessions. The invited speakers were globally recognized experts in the respective fields' viz **Dr. Cecilia Menard-Moyon, Institut de Biologie Moléculaire et Cellulaire Strasbourg Cedex, France, Dr. Gregory Pieters, Alternative Energies and Atomic Energy Commission (CEA), France, Prof. Chang Woo LEE, Kyung Hee University, South Korea, Dr. Hyunwoong Park, Kyungpook National University, South Korea, Prof. Wan Pyo Hong, Gachon University, South Korea, Dr. Jiaqian QIN, Chulalongkorn University, Thailand, Prof. Huynh Han Vinh, National University of Singapore, Singapore, Prof. Sangaraju Shanmugam, Daegu Gyeongbuk Institute of Science and Technology (DGIST), South Korea.** The plenary and invited talks from the esteemed speakers included emerging topics such as nanomaterials as artificial enzymes, design strategies for sodium ion batteries, artificial photosynthesis, electrocatalytic hydrogen evolution, organic deep blue OLEDs and more.

More than 300 technical papers were presented in the conference and the presented papers will be submitted as full manuscripts for possible publication in the technical journals.

The participants from various countries such as France, South Korea, Singapore, and Thailand, have contributed for these technical papers that was presented in the conference.

The inaugural function was held on 15<sup>th</sup> Feb. 2024 at Dr. T.P. Ganesan Auditorium, Mini Hall 1, SRMIST, Kattankulathur. The Chief Guest **Prof. G. Mugesh, IPC Department Dean, Division of Chemical Sciences Indian Institute of Science, Bangalore** inaugurated the conference, and **Prof. C. Muthamizhchelvan**, Honourable Vice-Chancellor, SRMIST presided over the conference and released the proceedings. **Dr. D. John Thiruvadigal**, Dean Sciences, **Prof. B. Neppolian**, Dean (Research) felicitated the Invited Speakers. **Dr. M. Arthanareeswari**, Convenor ICRAMC 2024 welcomed the delegates. **Dr. K. Ananathanarayanan**, Coordinator ICRAMC 2024 introduced the chief Guest and guest of honour. **Dr. Gopal Chandru Senadi**, Coordinator ICRAMC 2024, SRMIST delivered the vote of thanks.

**Prof. C. Muthamizhchelvan** gave the presidential address. He highlighted the journey of SRMIST and its diversity of the courses and multi-campus university to cater to needs of location, along with key metrics and rankings. He appreciated Chemistry department's research publications and government funded projects. He mentioned the conference would provide the platform to share wonderful ideas and wished the conference a grand success and embarking on bringing industries and technologies focusing applied research. He highlighted the contributions of chemistry in the fields of energy, sustainability and clean environment. The importance finding solutions to the burgeoning problems with key emphasis related to affordability, quality, and decisiveness were touched upon.

The chief guest **Prof. G. Mugesh**, highlighted the step wise development of SRMIST and its current excellence. He stressed Chemistry department's success in organizing this international conference for the 8<sup>th</sup> time. The importance of doing challenging things and dreaming big to young students and research scholars where turning the challenges to opportunities is highlighted. The importance of materials and chemistry towards diverse and multi-disciplinary areas in towards technological development. Key points such as life- long learners, learn to embrace failures with positivity which can lead to success were pointed out. Out of box thinking, overcome adversity, learn to deal with change are the final points which remain resilient towards enormous potentials. He stressed the recent challenges in the chemistry of materials and suggested towards designing and improving materials from lab to market, recyclability, low densities materials and environmental concern. He highlighted the current conference provides an excellent opportunity

to hear from the invited speakers. The inauguration ceremony was compered by Dr. T. Pushpa Malini, Asst. Prof. Department of Chemistry.

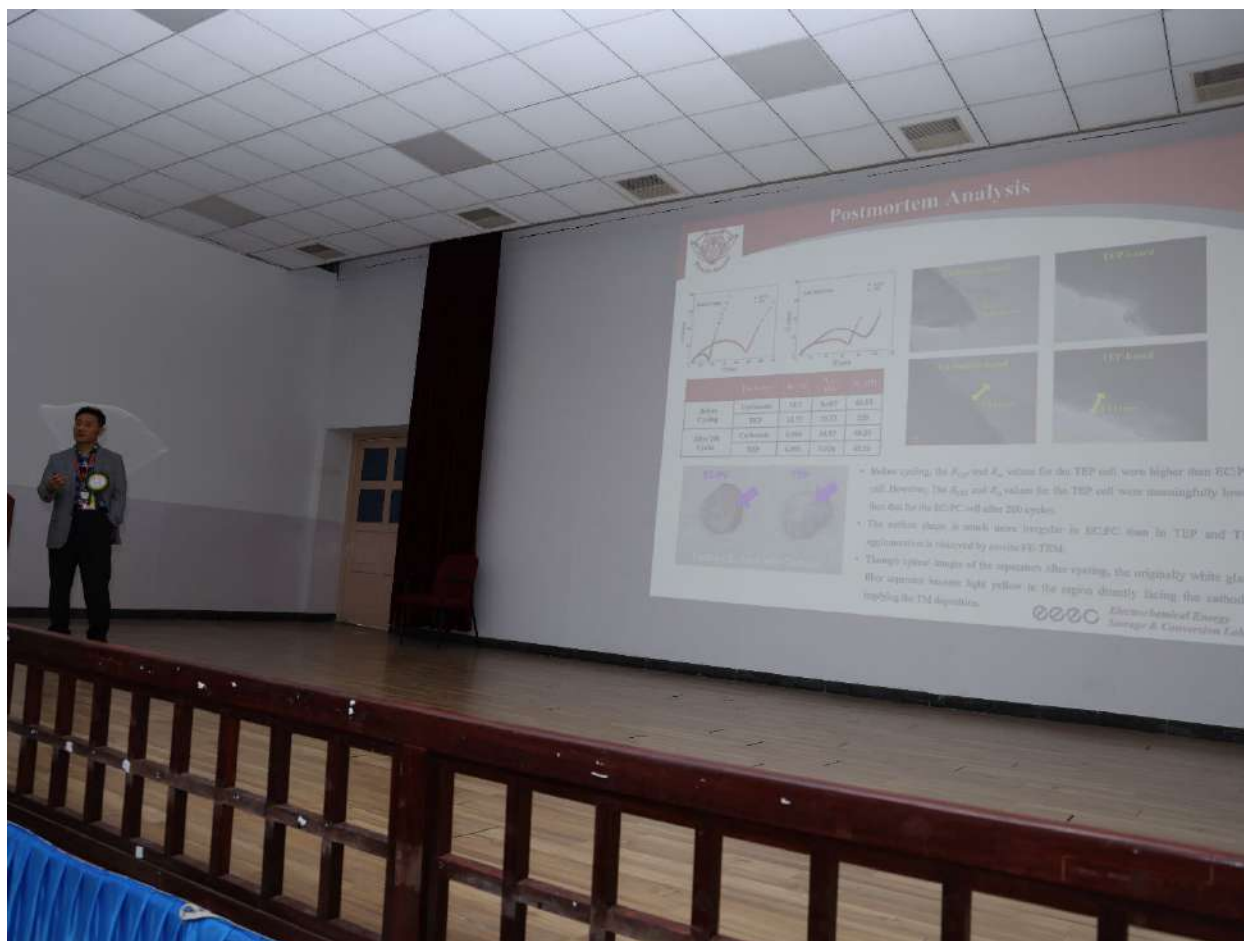


Release of Proceedings of ICRAMC-2024 (From left to right): Dr. M. Arthanareeswari (Convenor ICRAMC 2024), Dr. Cecilia Menard-Moyon, Institut de Biologie Moléculaire et Cellulaire Strasbourg Cedex, France, Prof. B. Neppolian, Dean (Research) SRMIST, Prof. Huynh Han Vinh, National University of Singapore, Prof. Chang Woo LEE, Kyung Hee University, South Korea, Prof. C. Muthamizhchelvan, Vice Chancellor, SRMIST, Prof. G. Mugesh, Indian Institute of Science, Bangalore, Prof. Wan Pyo Hong, Gachon University, South Korea, Dr. D. John Thiruvadigal, Dean (Sciences) SRMIST, Dr. Gregory Pieters, Alternative Energies and Atomic Energy Commission (CEA), France, Dr. K. Ananthanarayanan & Dr. Gopal Chandru Senadi (Coordinators ICRAMC 2024)





**Prof. G. Mugesh** Dean, Division of Chemical Sciences, Indian Institute of Science, Bangalore delivering a plenary talk on **Nanomaterials as Artificial Enzymes for Biomedical Applications**



**Prof. Chang Woo LEE**, Director, Kyung Hee University, South Korea presenting about the topic “Materials Design Strategy for Sodium-ion Batteries”.



**Dr. Gregory Pieters, CEA, France delivers a talk on “Isotopic exchange of bioactive molecules”**





**Dr. Jiaqian QIN**, Metallurgy and Materials Science Research Institute, Chulalongkorn University Bangkok, Thailand is delivering a talk on “Regulation of Zn plating and stripping for stable Zn ion Battery”



**Prof. V. Baskar**, University of Hyderabad is presenting a lecture on “Group 15/16 Metal ions based Molecular Assemblies and their Applications towards Tuning Optical Bandgaps to Electrocatalysts for HER”



**Dr. Cecilia Menard-Moyon** CNRS Research Director, Institute of molecular and cellular biology Strasbourg Cedex, France is delivering a talk on Anticancer therapy by multifunctional carbon nanomaterials





**Prof. Wan Pyo Hong**, Gachon University, South Korea is speaking about materials for efficient Deep blue OLEDs.



**Prof. Huynh Han Vinh**, National University of Singapore is presenting a talk about unified electronic parameter and its applications



**Dr. S. N. Jaisankar**, Chief Scientist, CSIR-CLRI, Chennai is delivering a talk on Strain sensor based on polyurethane elastomers for human motion monitoring





**Prof. Sangaraju Shanmugam**, Daegu Gyeongbuk Institute of Science and Technology, South Korea is presenting his talk on energy storage technologies for a sustainable future

Five sessions of oral presentations and two sessions of poster presentations were conducted in between the invited talks and the best oral and poster presentations of ICRAMC 2024 are selected for the award. The following are the winners of ICRAMC 2024 for the oral and poster presentations.

#### **Winners, ICRAMC-2024 - Oral presentation**

1. Mr. Jae Yoon Sung, Kyung Hee University, South Korea (OP 10)
2. Ms. Neetu Yadav, University of Delhi, Delhi (OP 38)
3. Ms. Sweta Girish Malpure, Advanced Center for Treatment, Research and Education in Cancer (ACTREC), Mumbai (OP 9).
4. Ms. Richu Baghya Varsa, Research Scholar, SRMIST (OP 19)
5. Ms. Swathi. J, B.Sc. Chemistry student, SRMIST (OP 41)

#### **Winners, ICRAMC-2024 - Poster presentation**


1. Ms. Gowri Chandran C V, Research Scholar, SRMIST (PP 49)
2. Mr. Sanjay Kumar, Research Scholar, SRMIST (PP 24)

3. Mr. Subash. M, Research Scholar, SRMIST (PP 1)
4. Ms. Krishnendu Nair, Bharatiar University (PP 151)
5. Mr. Aditya Prabhakaran, Research Scholar, SRMIST (PP 144)
6. Mr. Abinash B, M.Sc. Organic Chemistry student, SRMIST (PP 146)

ICRAMC-2024 provided a good opportunity to share innovative ideas and scientific results in the field of Material Chemistry among researchers, academicians, industry people and students. Invited talks, oral presentations by the faculty members and research scholars opened a new way to the research on materials chemistry.

**Coordinators – ICRAMC 2024**

Dr. K. Ananthanarayanan  
Dr. S. Devikala  
Dr. J. Arockia Selvi  
Dr. Gopal Chandru senadi  
Dr. P. Gopinath

  
**Convener – ICRAMC 2024**  
Dr. M. Arthanreeswari