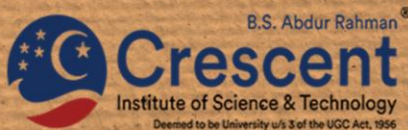




**A Three-day Hands-on Training  
on  
Synthesis, Characterization and  
Data Interpretation of  
Nanomaterials**

**29<sup>th</sup> to 31<sup>st</sup> January 2025**

*Organized by*  
**Department of Chemistry**



**Convenors**

- **Dr. S. Kutti Rani**  
Professor & Director (PG Admissions)  
Department of Chemistry  
BSACIST
- **Dr. Hajarabeevi**  
Professor and Head (Chemistry)  
BSACIST
- **Dr. I. Raja Mohamed**  
DEAN (SPCS)  
BSACIST

**Coordinators**

- **Dr. N. Vasimalai**  
Assistant Professor (Sel. Gr)  
Department of Chemistry, BSACIST.
- **Dr. Tuhin Subhra Dash**  
Assistant Professor (Sel. Gr)  
Department of Chemistry, BSACIST

# Program Brochure



**B.S. Abdur Rahman**  
Institute of Science & Technology  
Deemed to be University u/s 3 of the UGC Act, 1956



**Department of Chemistry**  
*Organized*  
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**Lectures**  
Eminent Speakers  
(From IIT, Anna University & Etc...)

*Hands-on Training for the*  
**Synthesis of Nanomaterials**

- Noble Metal NPs
- Various Metal Oxide NPs
- Graphene Oxide
- Nanocomposites

**Data Interpretations**

- XPS, SEM, TEM, FT-IR, PL & UV-Vis Analysis
- Essential Tools and Software Approaches
- Hands-on Training of DRS-UV, FT-IR etc.,

**About the Institute:**

B.S. Abdur Rahman Crescent Institute of Science and Technology, established in 1984, is a prestigious institution situated in the lush green area of Chennai, near Tambaram. With a legacy of 40 years of excellence, the institute offers a broad range of academic programs. It offers 57 courses across 12 different schools, including 32 undergraduate programs, 25 postgraduate programs, and Ph.D. opportunities in all departments. The institution is becoming a prominent figure in higher education, known for its quality, security and strong placement support. We welcome students from around the world, and our programs are designed to provide them with the knowledge and skills needed to achieve their goals and advance on their path to success.

**Department of Chemistry:**

The Department of Chemistry was started in 1984, the same year B.S.A. Crescent Engineering College was established. The department offers a Master's program in Chemistry (M.Sc.) and a research program (Ph.D.) in Chemistry. It also supports the undergraduate programs in Science, Engineering, and Technology. Students are provided with a strong foundation in the basic principles of chemistry, applied chemistry, and environmental science, while also gaining practical laboratory skills that will aid them in their future academic and professional pursuits.

**About the Hands-on Training**

The main objective of the hands-on training is to equip participants with a comprehensive understanding of innovative synthesis methods for nanoparticles, metal oxides and nanocomposites. It also sought to create a platform for students and researchers to interact with distinguished scientists from prestigious institutions such as IIT, Anna University, and other universities. The hands-on training will also be offered in detailed sessions to familiarize participants with various analytical tools, software, and data interpretations.

**Registration Fees\***

**UG Students - ₹ 300**  
**PG Students - ₹ 300**  
**Research Scholars - ₹ 500**  
**Faculties and Others - ₹ 700**

**Click here for Registration:**  
<https://forms.gle/J5TgDFrnuHS3mRvFA>

**Conveners**

**Dr. I. Raji Mohammed**  
Professor & Dean  
Department of Chemistry (SPCS)

**Dr. N. Hajara Beeri**  
Professor & Head  
Department of Chemistry (PG Admissions)

**Dr. S. Kuriti Rani**  
Professor & Director  
(PG Admissions)

**Coordinator's**

**Dr. N. Vasimalai**  
Assistant Professor (Sel. Gr)  
Mobile No: 9884871402

**Dr. Tahira Subhra Dash**  
Assistant Professor  
Mobile No: 8336058517





Limited Seats Available



<b>UG Students</b>	<b>Participants Details</b>	
	Saveetha School Of Engineering, Thandalam, Poonamallee	2
	B.S.Abdur Rahman Crescent Institute of Science and Technology, Vandalur	7
	R.V.G Art's College Chengalpattu	15
	SRM Arts and Sciences College, Kattankulathur	8
	Simats Engineering Saveetha Nagar Thandalam Chennai 602105	3
	Vivekananda College Madurai	3
	Pondicherry University, Kalapet, Pondicherry 605014	3
	<b>Total</b>	<b>41</b>
<b>PG Students</b>	Stella Maris College, No.17, Cathedral Road, Chennai -86	2
	B.S Abdur Rahaman Crescent Institute of Science and Technology	6
	Sri Ramachandra Institute Of Higher Education and Research, Ramachandra Nagar, Porur, Chennai - 600116.	2
	Rajeswari Vedhachalam Government Arts College, Chengalpattu 603001	11
	Vels institute of science technology and advanced studies Pallavaram chennai	3
	Sdnb Vaishnav College For Women Chrompet	7
	School Of Pure and Applied Physics, Mahatma Gandhi University, Kottayam Kerala -686560	2
	Vivekananda College Tiruvedakam West Madurai	4
	SRM Arts and science college kattankulathur potheri	5
	Loyola College	2
	Anna Adarsh College for Women	3
	<b>Total</b>	<b>47</b>
	Saraswathi Narayanan College, Perungudi, Madurai - 22	1
	Madras Christian College	1
	Mit Campus, Anna University, Chennai	2
	Ramakrishna Mission Vivekananda College, Mylapore	1

<b>PhD Students</b>	Muslim Arts College, Thiruvithancode, Kanniyakumari District, 629174, Tamil Nadu	1
	Amet University, Chennai	1
	Ethiraj College For Women (Autonomous)	1
	SRM Institute of Science and Technology, Kattankulathur, Chennai	1
	National Institute of Siddha, Chennai	1
	College Of Engineering, Anna University, Chennai	2
	Sri Ramachandra Faculty of Pharmacy, Sri Ramachandra Institute of Higher Education and Research, Porur, Chennai	1
	Vellore Institute of Technology, Vellore, Tamil Nadu -632014	2
	Vistas, Pallavaram	3
	B. S. Abdur Rahman Crescent Institute of Science and Technology	2
	Department Of Physics, Gulbarga University Kalaburgi, Karnataka 585106	1
	<b>Total</b>	<b>21</b>
<b>Faculty</b>	Loyola -ICAM College of engineering and technology, Nungambakkam, Chennai	1
	Crescent School of Pharmacy, BS Abdur Rahman Crescent Institute of Science and Technology, Vandalur, Chennai	1
	Chennai Institute of Technology, Sarathy Nagar,	1
	Crescent School of Pharmacy,	1
	<b>Total</b>	<b>4</b>
<b>Industry</b>	Life Care Phyto Labs	3
	<b>Total</b>	<b>3</b>
<b>Overall Total Participants</b>		<b>116</b>

## **INTRODUCTION:**

A Three days Hands-on Training program focused on the synthesis, characterization, and data interpretation of nanomaterial would provide participants with a comprehensive introduction to the field of nanotechnology.

Participants would gain practical experience in synthesizing various types of nanomaterials, including nanoparticles (like CuO, ZnO, Au, Ag, Graphene Oxide) . They would also learn how to use a variety of characterization techniques, such as UV- Vis Spectroscopy, FTIR Spectroscopy to analyze the properties of nanomaterials.

Finally, participants would develop the skills to interpret and analyze data from characterization experiments, which is essential for understanding the behavior of nanomaterials.

## **OBJECTIVE OF HANDS-ON TRAINING:**

The objectives of a Three-days Hands-on Training program on synthesis, characterization, and data interpretation of nanomaterials could be,

- Synthesis: To provide participants with practical experience in synthesizing nanomaterials using common methods (e.g., chemical, physical).
- Characterization: To train participants on using various characterization techniques (e.g., UV-Vis Spectroscopy, FTIR Spectroscopy) to analyze the functional group, structure, and properties of nanomaterials.
- Data Interpretation: To equip participants with the skills to interpret characterization data and draw meaningful conclusions about the synthesized nanomaterials.
- Applications: To introduce participants to the potential applications of nanomaterials and how their properties relate to their uses.
- Hands-on Experience: To offer significant hands-on time in the lab, allowing participants to develop practical skills.
- Problem-Solving: To foster problem-solving skills related to nanomaterial synthesis and characterization.

## DAY-1

The day-1 program initially started with Qirat by a research scholar of the Chemistry department.



தமிழ் த்தாய் வாழ்த் (Tamil Thai Valthu) by our group members





From left to right Dr. S. Elamathi, Dr. M. Asha Jhonsi, Dr. Vasimalai, Dr. S. Kutti Rani, Director (PG Admissions), Dr. Sudakar Chandran (IIT Madras), Dr. I. Raja Mohamed, Dean (SPCS), Dr. N. Hajara Beevi, HOD/Chemistry, Dr. Tuhin Subhra Dash, Dr. S. Bhagavathy.



Dr. S. Kutti Rani, Director (PG Admissions), delivering welcome address





Dr. N. Thajuddin, Pro-Vice Chancellor, delivering the presidential address



Dr. N. Hajara Beevi, Professor and HOD, Chemistry, delivering about the department.





Dr. N. Vasimalai, (Sel.Gr), programme coordinator, introducing the chief guest.



Dr. N. Thajuddin Pro-Vice Chancellor, honouring the chief guest with a shawl



Dr. N. Thajuddin Pro-Vice Chancellor, honouring the chief guest with a Memento



Faculty from various departments, research scholars and PG students of Chemistry and Physics are attending the lecture.



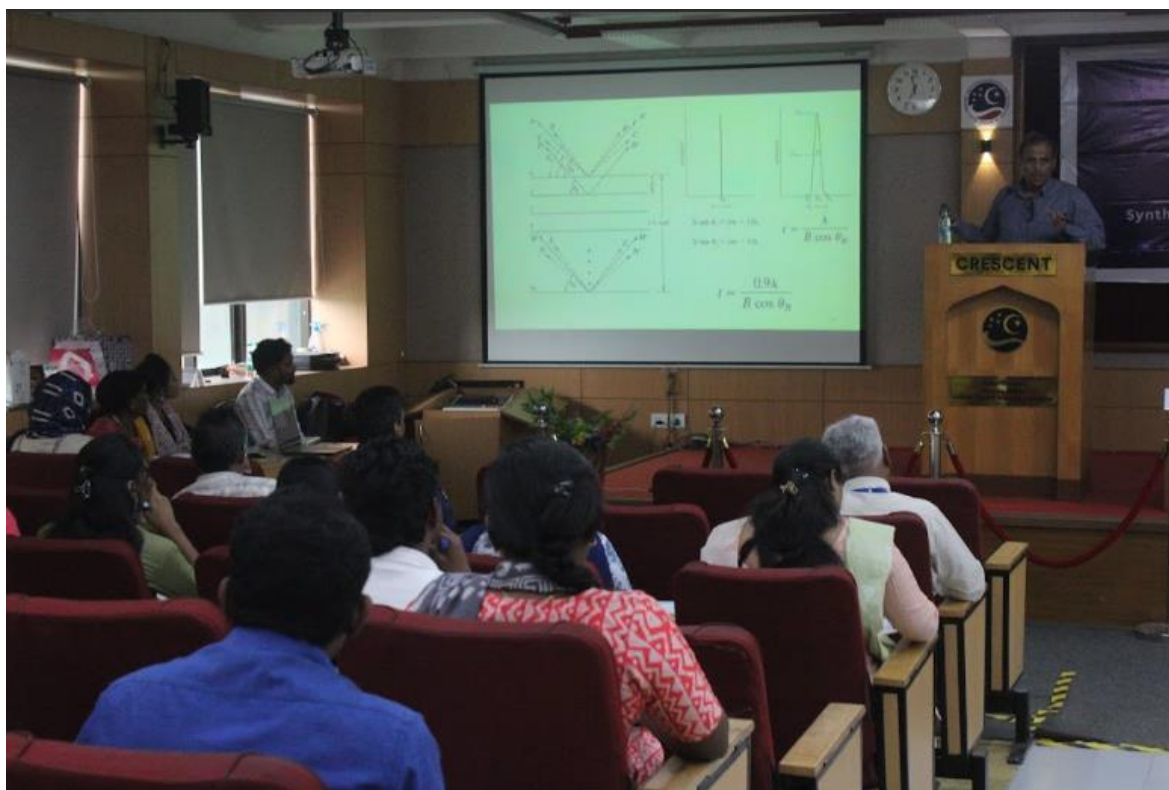


Dr.Tuhin Subhra Dash, Assistant Professor, Department of Chemistry delivering Vote of Thanks.



Dr. Sudakar Chandran, IIT Madras, delivering lecture on “Exploring the nanomaterials world: Methods, Properties and Application”.





Nanomaterials have transformed multiple scientific and industrial fields due to their unique size-dependent properties and diverse applications.

In this guest lecture, Professor, Dr.Sudakar Chadran will explore the fascinating world of nanomaterials, covering their synthesis methods, key properties, and practical uses.

The discussion will include top-down and bottom-up fabrication techniques, such as chemical vapor deposition and the sol-gel process, highlighting how these methods influence material behavior.

The lecture will also examine the optical, electrical, and mechanical characteristics of nanomaterials, emphasizing their significance in medicine, electronics, energy and environmental solutions. This lecture will then highlight the significance of nanomaterials in cutting-edge applications - ranging from drug delivery systems and biosensors in medicine to high-efficiency solar cells and next-generation batteries in energy storage.

\Additionally, the session will address challenges such as safety concerns, ethical considerations, and regulatory issues, while also looking at future trends in nanotechnology.

Concluding with a Q&A session, this lecture is ideal for students, researchers, and professionals eager to deepen their understanding of nanoscience and its real-world impact.



The participants were very much impressed by the lecture and started interacting with the chief guest and clarified their doubts in this field.



Dr. S. Hemalatha, Professor and Dean School of Life Sciences, delivering lecture on “Biogenic synthesis, characterization and applications of nanomaterials”.



Dr. S. Kutti Rani, Professor and Director of PG Admissions, honouring the Chair Person Dr. T. Shobana Premlatha with memento and shawl.





In Lab 1, they conducted experiments on TLC and column chromatography



In Lab 1, a demonstration of TGA and DTA was given



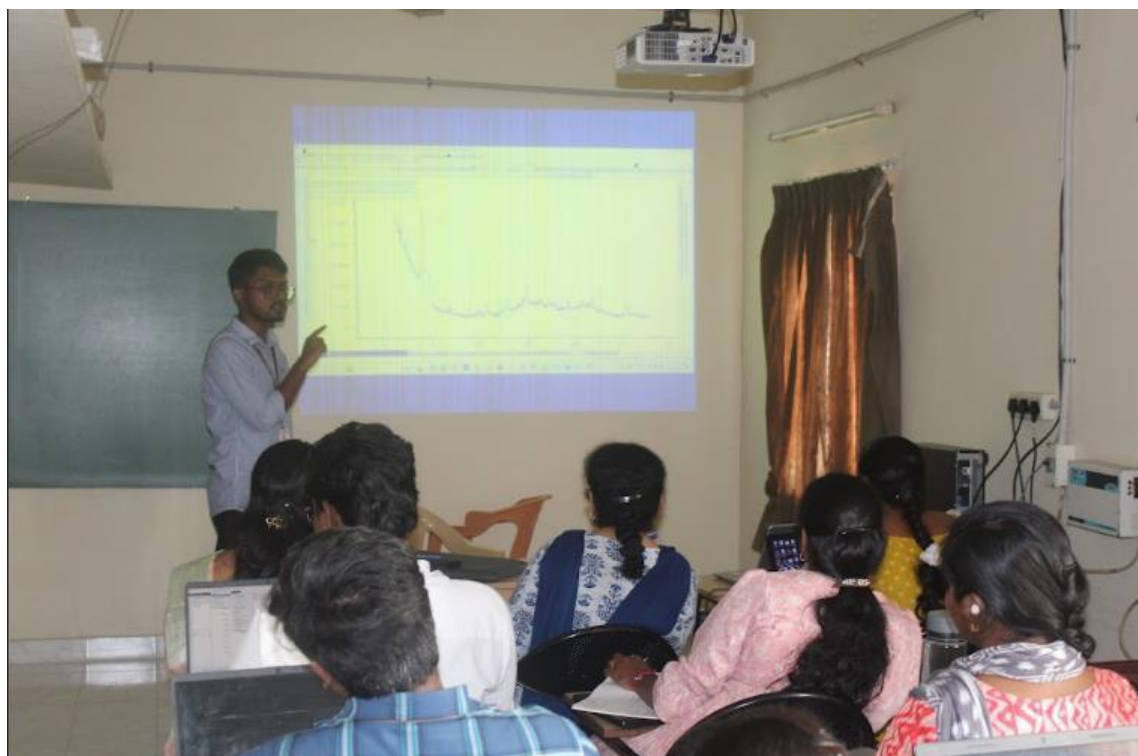
In Lab 2, they conducted the synthesis and characterization of nanoparticles (AgNPs, AuNPs, ZnONPs, CuONPs, Graphene Oxide).





In Lab 3, they conducted the demonstration on FTIR, DRS UV-Vis Spectroscopy.





The day 1 session concluded with the data interpretation of nanomaterials

## DAY-2



The day-2 program initially started with guest lecture

Dr. J. Revathy, Professor and Dean (Research) BSACIST delivering lecture on “Concrete Meets Chemistry: Prospective Applications of Nanomaterials in Green and Sustainable Construction



Dr. N. Vasimalai honored the Chairperson, Ms. S. Padmapriya, with a memento and shawl.



Dr. N. Hajara Beevi, Head of Department Chemistry, honouring the chief guest, Mr. Prasanth K K, with a memento and shawl



Mr. Prasanth K K, Founder and CEO- Simbioean labs and scientific service pvt. ltd delivering lecture on “Green synthesis of Nanoparticles and their pharmaceutical and Biomedical Applications.





Dr. S. Kutti Rani, Professor and Director of PG Admissions, honouring the Chair Person Dr. Kannappan, R V Govt Arts College, with memento and shawl.





Dr. I. Raja Mohamed Dean (SPCS), honouring the chairperson, Dr. S. S. M. Abdul Majeed, Professor and Director (Admissions), BSACIST with a memento.



Dr. I. Raja Mohamed Dean (SPCS), honouring the resource person, Dr. G. V. Vijayaraghavan, Professor and Head (Physics), with memento.



Dr. S.S.M. Abdul Majeed honoring the resource person Dr. M. Lakshmi Priya, Assistant Professor, Physics, with a memento.





In Lab 1, they conducted experiment on TLC and column chromatography.





Demonstration on Laser instrumentation, TGA and DTA.





In Lab 2, they conducted the synthesis and characterization of nanoparticles (AgNPs, AuNPs, ZnONPs, CuONPs, Graphene Oxide).





In Lab 3, they conducted the demonstration on FTIR, DRS UV-Vis Spectroscopy



The day-2 session concluded with the data interpretation of nanomaterials.



## **DAY-3**

**The Day-3 session initially started with Hands-on Training**



In Lab 1, they conducted experiment on TLC and column chromatography



In Lab 2, they conducted the synthesis and characterization of nanoparticles ( AgNPs, AuNPs, ZnONPs, CuONPs, Graphene Oxide).





In Lab 3, they conducted the demonstration on FTIR, DRS UV-Vis Spectroscopy.

## Valedictory function











**Finally, the session ended with the group photo**



**THANK YOU !!**