MARUDHAR KESARI JAIN
College for Women (Autonomous)

32 Years of Educational Excellence

Recognized u/s 2(f) & 12(B) of UGC Act 1956 | Accredited with "A+" Grade by NAAC (4th Cycle) | Permanently Affiliated to Thiruvalluvar University | An ISO 21001:2018 Certified Institution | Supported by DST - FIST

INSTITUTION'S INNOVATION COUNCIL (Ministry of Education Initiative) 4 STAR Rating

School of Physical Sciences
PG Department of Chemistry
Mendeleev Chemistry Association

MoU Activity (Students Exchange Programme)
Sona College of Arts & Science, Salem
Organizes

ONE DAY INTERNATIONAL WEBINAR

Title : Unveiling the Future: Opportunities and Challenges in Advanced Materials

Chief Guest

Dr. Balamurugan Jayaraman

Research Associate Professor Department of Materials Science & Engineering, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

DATE: 17.09.2025 | TIME: 02.00 PM

MODE : ONLINE | PLATFORM: ZOOM

SCAN FOR ZOOM LINK

PRINCIPAL
Marudhar Kesari Jain College for Women (Autonomous)
Vaniyambadi - 635 751.
Tirupattur District

V. Dilip Kumar Jain	Anand Singhvi	Dr. M. Inbavalli	Ms. C.B. Sumathi	Dr.J.Logeswari
President	Secretary	Principal	Dean	Hod i/c

Marudhar Kesari Jain College for Women (Autonomous), Vaniyambadi

(A Project of Sri Marudhar Kesari Jain Trust)

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SCHOOL OF PHYSICAL SCIENCES
PG DEPARTMENT OF CHEMISTRY & MENDALEEV CHEMISTRY ASSOCIATION
MoU Activity (Students Exchange Programme)
Sona College of Arts & Science, Salem.

Organizes

ONE DAY INTERNATIONAL WEBINAR
on

Unveiling the Future: Opportunities and Challenges in Advanced Materials

AGENDA

Date: 17.09.2025 **Venue: AV Room**

Time: 02.00 PM

Prayer

Welcome Address : **Ms. S. Yasmeen**
II M.Sc Chemistry

Felicitation Address : **Ms. C. B. Sumathi,**
Dean of Physical Science,
Marudhar Kesari Jain College
for Women (Autonomous), Vaniyambadi.

Chief Guest : **Dr. Balamurugan Jayaraman**
Research Associate Professor,
Department of Material science and Technology
(KAIST), Republic of Korea.

Chief Guest Introduction : **Ms. K. Snekha,**
II M.Sc Chemistry

Vote of thanks : **Ms. A. Hajeera**
II M.Sc Chemistry

National Anthem

All are Cordially Invited

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MARUDHAR KESARI JAIN COLLEGE FOR WOMEN (AUTONOMOUS), VANIYAMBADI

Activity Report

Title	**Unveiling the Future: Opportunities and Challenges in Advanced Materials**		
Organized By	**School of Physical Sciences, PG Department of Chemistry and Mendeleev Chemistry Association**		
Type of Activity	**Webinar**		
Level	**International Level**		
Date	**17.09.2025**	**Time**	**2.00 pm**
Venue	**AV Room**	**Mode**	**Online**
Resource Person Details	Dr.Balamurugan Jayaraman Research Associate Professor, Department of Materials Science & Engineering, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea.		
Objective of the Programme	• To illuminate international perspectives on the latest trends and breakthroughs in advanced materials and their novel functionalities. • To analyze the global opportunities and technological challenges (cost, durability, and sustainability) in implementing these materials, with a specific focus on hydrogen fuel cell technology. • To motivate interdisciplinary discussion and promote international collaboration necessary for the successful large-scale adoption of innovative material solutions worldwide.		
Internal Participants Count	**Students : 126**	**External Participants Count**	**113**

Summary

This International Webinar, titled "**Unveiling the Future: Opportunities and Challenges in Advanced Materials**", was led by **Dr. Balamurugan Jayaraman**, Research Associate from KAIST, and focused heavily on the materials science innovations driving the hydrogen economy. The session highlighted the essential role of advanced nanomaterials and

smart technologies in addressing core fuel cell challenges, specifically the need for cost-effective, durable, and sustainable solutions. Key topics explored included the development of low- and non-Platinum electrocatalysts to reduce manufacturing costs, the engineering of advanced polymer membranes for enhanced cell lifespan, and the use of specialized materials for compact hydrogen storage and bifunctional catalysts for green H_2 production. The highly interactive session promoted collaboration among academia and industry to overcome hurdles like safety, environmental impact, and regulatory issues, ensuring progress toward large-scale adoption. The participants provided valuable feedback and highlighting the clarity and usefulness of the information shared.

Outcome of the Programme

- To identify current trends, challenges, and opportunities in advanced materials, such as sustainability, nano-materials, and material lifecycle considerations.
- To develop the ability to critically analyze the global technological and economic challenges (specifically relating to cost, durability, and sustainability) facing hydrogen fuel cell technology and other emerging material systems.
- To motivate students to explore interdisciplinary research and innovation in material science.

13/10/25

HOD **IQAC Director** **Principal**

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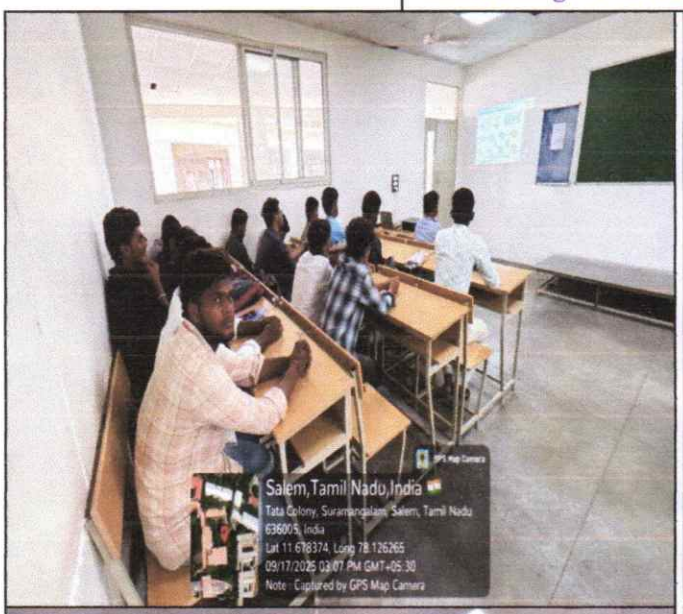
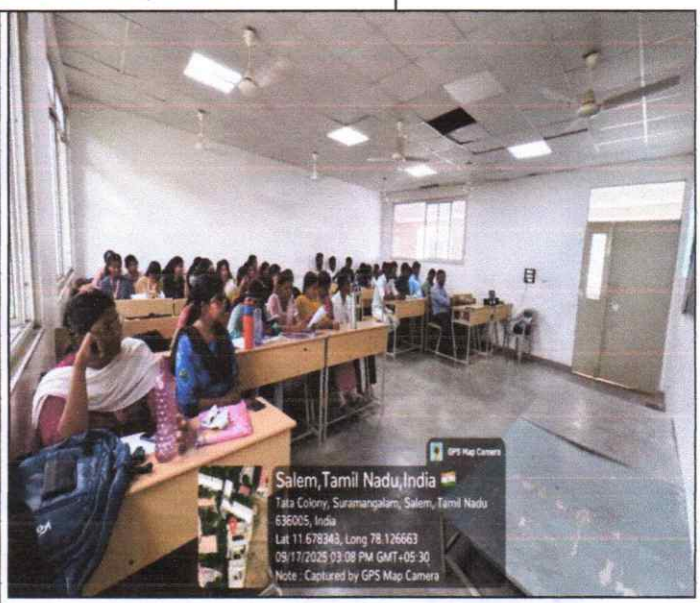
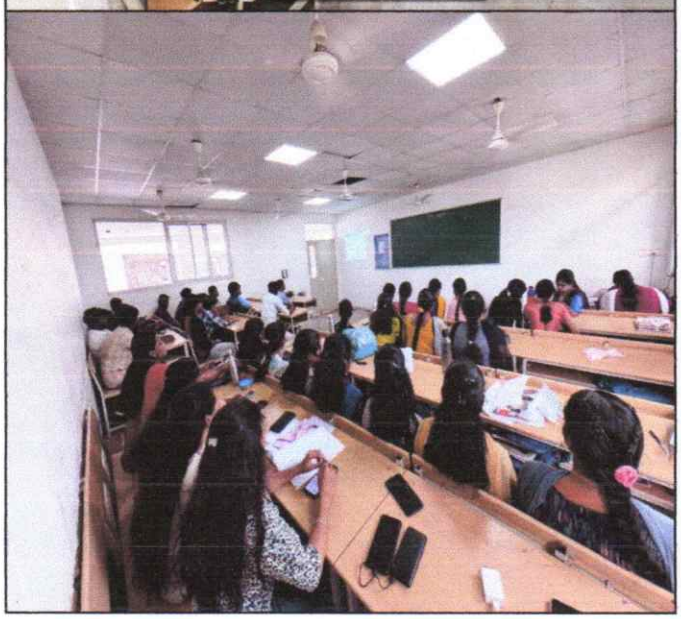
MARUDHAR KESARI JAIN
COLLEGE FOR WOMEN (AUTONOMOUS)
VANIYAMBADI

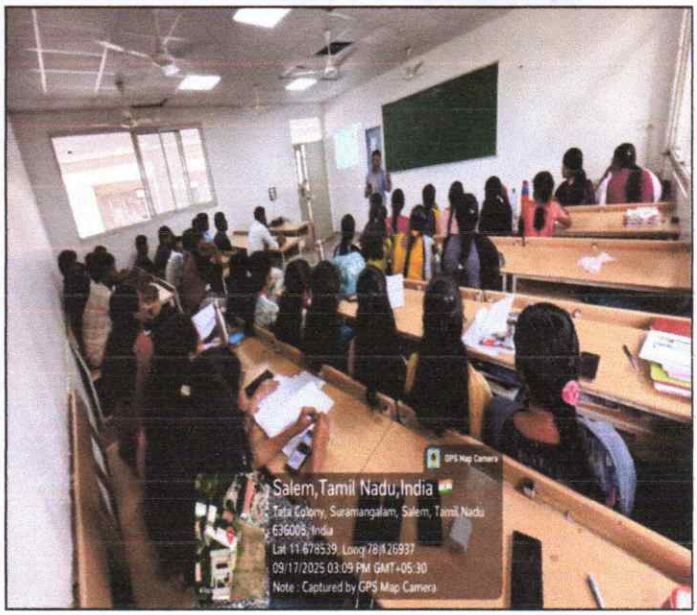
Department Name: Chemistry
Programme: Unveiling the future: opportunities and challenges in advanced materials
Date : 17.09.2025

Sona College of Arts and Science, Salem









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