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Report of One-Day Guest Lecture on "Decarbonization and Efficiency Improvement in the Cement Industry for Environmental Sustainability"

conducted by

Department of CE, AUE and IQAC Cell

of

Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex

(An Autonomous Institute)

In association with Department of Renewable Energy Engineering, Maulana Abul Kalam Azad University of Technology

Title: One-Day Guest Lecture on "Decarbonization and Efficiency Improvement in the Cement Industry for Environmental Sustainability"

Speaker: Dr. Ananta Kumar Das

Designation: Professor & Former Head of the Department of Renewable Energy Engineering at Maulana Abul Kalam Azad University of Technology

Date & Time: 04.11.2026, 11.30 Am onwards

Venue: Room 122 (CV Raman Auditorium)

Number of Participants: 30 Students from Department of CE and AUE

Objective: The objective of the guest lecture was to enhance students' understanding of carbon emission challenges in cement manufacturing and introduce practical approaches to reducing the industry's carbon footprint. The session aimed to familiarize students with energy-efficient cement production practices, renewable energy integration, alternative fuels, and sustainable technologies that can contribute to environmentally responsible cement manufacturing.

Brief Overview: The Department of Civil Engineering (CE), Automobile Engineering (AUE), and IQAC Cell of Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex, in association with the Department of Renewable Energy Engineering, Maulana Abul Kalam Azad University of Technology, organized a one-day guest lecture on “Decarbonization and Efficiency Improvement in the Cement Industry for Environmental Sustainability” on 4th November 2026 at Room 122 (CV Raman Auditorium).

The session was delivered by Dr. Ananta Kumar Das, Professor and Former Head of the Department of Renewable Energy Engineering, MAKAUT. The speaker discussed the major sources of carbon emissions in cement manufacturing, particularly emissions arising from limestone calcination and energy-intensive kiln operations. He highlighted strategies such as waste heat recovery, fuel substitution, renewable energy utilization, process optimization, and energy-efficient technologies to improve cement plant performance

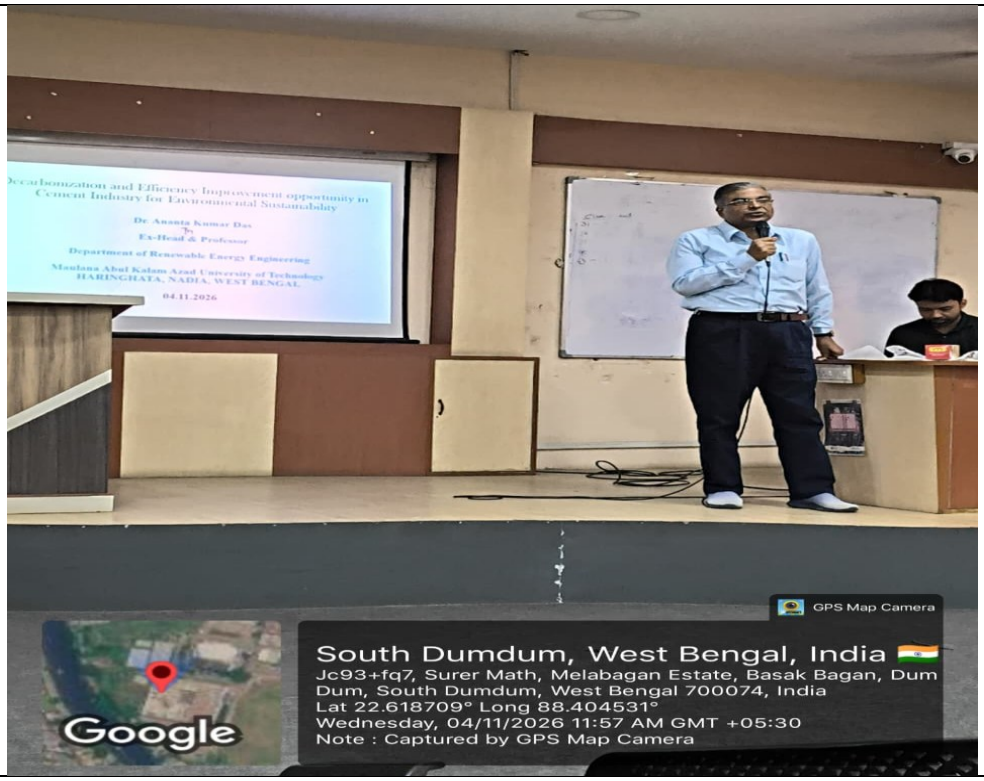
while reducing greenhouse gas emissions. The lecture also emphasized the importance of integrating renewable energy solutions into conventional industrial processes.

A total of 30 students from the Departments of Civil Engineering and Automobile Engineering participated in the session and gained insights into the relationship between industrial energy efficiency, sustainable manufacturing, and environmental protection.

Outcome:

- Students developed an understanding of the major sources of CO_2 emissions in cement manufacturing and their environmental implications.
- Participants gained knowledge of practical decarbonization measures, including alternative fuels, waste heat recovery, and renewable energy integration.
- Students understood how process optimization and energy-efficient technologies can reduce energy consumption and improve cement plant sustainability.
- The session strengthened awareness of the role of civil and automobile engineering graduates in promoting low-carbon industrial practices and sustainable infrastructure development.

Few glimpses of the session-



One-Day Guest Lecture on "Decarbonization and Efficiency Improvement in the Cement Industry for Environmental Sustainability" on 04.11.2026