

Departmental Seminar

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Seminar Title	: Subsurface Storage of Hydrogen in Lined rock Caverns: Exploring Prospects and Hurdles
Speaker	: Dr. Yugal Kishor Patanwar
Supervisor	: Dr. Sahendra Ram
Venue	: Seminar Room (Mining Department)
Date and Time	: 04 Oct 2024 (11:00AM)
Abstract	: Hydrogen is increasingly recognized as a pivotal component in the future of sustainable energy and the transition to a low-carbon economy. Surface-based hydrogen storage methods, such as compressed gas and liquid hydrogen storage, have limitations in terms of capacity, safety, and energy losses during the storage and retrieval processes. The geological formations such as caverns or depleted reservoirs provide a unique and potentially more effective repository for hydrogen with abundant storage capacity. This study investigates the details of subsurface hydrogen storage briefly re-viewing the usage of hydrogen as a fuel and its physical and chemical characteristics. It explores the hydrogen production techniques and suitability for securely housing hydrogen. Additionally, it delves into the feasibility for subsurface storage of hydrogen and the potential challenges and risks. In sum, we out-line the prospects for LRC-based hydrogen storage in India, and offer an insightful survey for implementation of large-scale storage systems. Keywords: Hydrogen Economy, Hydrogen Storage, Subsurface Storage, Lined Rock Cavern.