National Institute of Technology Rourkela

Registration Seminar

Seminar Title	: IoT Aware Environmental Monitoring and Risk Prediction System for Underground Coal Mines
Speaker	: Soudeep Chowdhury (Rollno : 523mn6001)
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Venue	: Seminar Hall (Mining Engineering Department)
Date and Time	: 21 Jan 2025 (4.30 PM)

Abstract : The underground environment of coal mine is complex, noisy and uneven, and thus continuous monitoring of the environment is one of the major challenges. For continuous monitoring of underground environment, the key challenge is availability of low cost intrinsically safe continuous monitoring instrument and data communication in underground environment. Thus, there is a critical need for cost-effective, robust, and intrinsically safe hardware that meets strict safety standards while addressing the unique challenges of underground mining. Moreover, a suitable communication system for continuous data transmission from underground to surface is needed. The currnt involves the design and development of an IoT-based system for underground coal mines for environmental monitoring and an associated risk prediction system. The entire system will help to provide data on real-time basis which will be used to setup a communication link between transmitter node to a receiver node. By addressing these challenges, this research aspires to contribute significantly to the safety, efficiency, and sustainability of underground mining operations. The research outcomes will lay the foundation for next-generation monitoring systems tailored to the unique demands of this industry.