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PRESS-RELEASE

IIT (ISM) Hosts Executive Development Program on Low-Cost Sensors and Automation for Air Quality Monitoring in the Mining Industry

Industry professionals and research scholars from across the country gathered at the Indian Institute of Technology (Indian School of Mines), Dhanbad (IIT-ISM) for a two-day Executive Development Program (EDP) on “Integrated Low-Cost Sensors (LCS) and Automation Technologies for Air Quality Monitoring and Control in the Mining Industry.” The event, held on February 20-21, was organized by the Department of Environmental Science & Engineering (ES&E) in collaboration with the Department of Mechanical Engineering.

The program covered fundamental aspects of air pollution, including its sources, composition, and detrimental effects on climate change and human health. Participants gained insights into regulatory air pollution measurement techniques and advancements in low-cost sensor technologies. Other key discussions included performance assessment of LCS, calibration techniques, economic benefits of LCS, and real-world applications in mining industries. Additionally, the program introduced participants to automation technologies such as relay-based control systems and programmable logic controllers (PLCs), their interfaces, and ladder logic applications.

During the inaugural session, Prof. Saifi Izhar, Assistant Professor (ES&E) and coordinator of the program, emphasized the global challenge of poor air quality, citing industrial fossil fuels and mining as significant contributors. He noted that conventional air quality monitoring relies on high-cost equipment, which limits its accessibility and deployment. However, advancements in LCS technology are gaining attention in research and industry due to their cost-effectiveness and real-time data visualization capabilities.

Prof. Izhar also highlighted the challenges in industrial automation, stating that a lack of interdisciplinary knowledge and high infrastructural costs have hindered its widespread adoption. He noted that with the increasing availability of automated systems, there is a growing demand for skilled professionals in these domains. Academic institutions can play a crucial role in bridging this gap by fostering interdisciplinary expertise and technological integration.

Prof. Alok Sinha, Head of the Department of Environmental Science & Engineering, commended the organizers and stressed the importance of real-time pollution monitoring. He stated that early detection using low-cost sensors enables timely mitigation measures, such as water sprinkling, to reduce pollution levels effectively.

Prof. Somnath Chattopadhyaya, Head of the Department of Mechanical Engineering, reiterated the severe impact of air pollution on human health. He emphasized that the hands-on training provided during the program would have a lasting impact on participants, significantly enhancing their understanding and practical application of air quality monitoring techniques.

The program concluded with a vote of thanks by Prof. Zafar Alam, Assistant Professor (Mechanical Engineering), who underscored the importance of translating theoretical knowledge into practical implementation. He urged participants to ensure the real-world application of the technologies discussed to make a tangible impact on air quality improvement in industrial settings.

The successful completion of this Executive Development Program marks another milestone in IIT-ISM’s commitment to addressing environmental challenges through cutting-edge research and technological advancements.

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