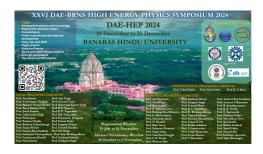
XXVI DAE-BRNS High Energy Physics Symposium 2024



Contribution ID: 164 Type: Postar

Advancements in Portable Gas Leakage Detection Systems for Enhanced Safety in Gaseous Detector

The gain of gaseous detectors like GEM detectors depends upon the concentration of gas mixtures, temperature, and pressure inside the gas volume. For this reason, it is important to know that the gas leakage from the detector can cause fluctuation in the pressure and temperature, and it can affect the gain of the detector. In this talk, we present the development of the high-sensitivity gas sensor aimed at ensuring the operational integrity of gaseous detectors. The sensor is designed to detect even minute variations in CO2 levels, allowing for precise leakage detection during detector operation. Its high precision and reliability make it an indispensable tool in maintaining the gas environment stability required for optimal detector performance. In addition to GEM, the sensor is applicable across a wide range of gaseous detectors used in particle physics experiments and other research fields. It is also widely used for safety purposes in industries. This sensor technology can significantly enhance detector safety, providing real-time monitoring and early warning of potential gas leaks, thus ensuring the integrity of experimental setups.

Field of contribution

Experiment

Author: Mr THAKURANI, Bhanu (University of Delhi(IN))

Co-authors: PRAKASH, Chandra (University of Delhi (IN)); KUMAR, Ashok (University of Delhi); NAIMUD-

DIN, Mohammad (University of Delhi (IN))

Presenter: Mr THAKURANI, Bhanu (University of Delhi(IN))

Track Classification: Future experiments and detector development