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Micro Pattern Gas Detector Technologies and Applications - the work of the RD51 Collaboration

Driven by the availability of modern photolithographic techniques, the Micro Pattern Gas Detectors (MPGD) have been introduced in the last years of the 20th century by pioneer activities: Gas Electron Multipliers (GEM) and Micromegas, later followed by thick-GEM, resistive GEM (RETGEM) and novel micro-pattern devices. Nowadays, a flourishing of R&D activities dedicated to MPGDs and of diversified applications is ongoing, largely favored by the technological collaboration RD51, whose aims are to facilitate the development of these advanced gas-avalanche detector technologies and associated electronic-readout systems, for applications in basic and applied research. The areas of activities within RD51 include MPGD technology and new structures, device characterization, software and simulations, electronics, MPGD production, common test facilities, and applications of MPGD. By this coverage of all aspects of MPGD, RD51 aims to bring together leading experts in the field for the development of new technology and colleagues using this technology for a wide array of applications.

This talk will review the activities of the RD51 by summarising the first five years of the Collaboration activity and by anticipating the future programmes, planned over the next five years.

Summary

This talk will cover the work of the CERN-based RD51 Collaboration developing Micro Pattern Gas Detectors for a wide range of applications.

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