

The time resolution and position resolution of IHEP LGAD strip

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Low Gain Avalanche Diode (LGAD) has high-precision time performance, and the time resolution can reach 30 ps. The LGAD with a size of 1.3 mm × 1.3 mm was used for the upgrade of ATLAS and CMS time detectors to reduce the pile-up effect of High-Luminosity Large Hadron Collider (HL-LHC). Institute of High Energy Physics (IHEP, CAS) has designed a LGAD strip detector, which can be used as a time detector in electron colliders such as Circular Electron Positron Collider (CEPC) and Future Circular Collider (FCC-ee). The strip-shaped LGAD allows for a larger cell area, which reduces readout channel density, and provides position resolution with a double-ended readout method. This presentation will show the test results of IHEP LGAD strip, including beta source test, picosecond laser test, comparison of single-end or double-end readout, time resolution, position resolution, etc.

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