Contribution ID: **5**   Type: **WG7 - Interconnect**

SMALLGAD: Capacitively-coupled AC-LGAD pixel detector for particle detection

Tuesday 3 December 2024 09:00 (20 minutes)

In this R&D proposal, we aim at demonstrating a novel kind of low-cost, large-area, small-pixel silicon pixel detector based on AC-couple low-gain avalanche diode (AC-LGAD) technology. This new technology, the SMall pixel Adhesively coupled Large area LGAD (SMALLGAD), would combine the excellent timing resolution known of LGAD detectors with the small pixel readout of current state-of-the-art hybrid pixel detectors used in High Energy and Nuclear Physics (HEP&NP). Using precise flip-chip capabilities for bonding of silicon detectors, we plan to develop a new low-cost sensor-ASIC capacitive bonding technique for AC-LGAD based on adhesive that can achieve unprecedented combined spatial and timing resolution over a larger area than the current generation of pixel silicon detectors.

Type of presentation (in-person/online)

in-person presentation

Type of presentation (I. scientific results or II. project proposal)

II. Presentation on project proposal

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