



Contribution ID: 331

Type: Oral presentation using Zoom

## Development of iLGAD sensors at IMB-CNM: challenges and future applications

Wednesday, 27 October 2021 19:00 (24 minutes)

In this contribution, we are going to present the last developments on Inverse Low Gain Avalanche Detectors (iLGADs) at IMB-CNM. This iLGAD sensor concept is one of the most promising technologies for enabling the future 4D tracking paradigm that requires both precise position and timing resolution. In the iLGAD concept, based on the LGAD technology, the readout is done at the ohmic contacts, allowing for a continuous unsegmented multiplication junction. This architecture provides a uniform gain over all the active sensor area. This concept was successfully demonstrated in a first generation of 300  $\mu\text{m}$  thick iLGAD sensors. In the second generation, we have fabricated thick iLGAD sensors optimizing the periphery for X-Ray irradiations. Currently, we are developing a third generation based on 50  $\mu\text{m}$  thick pixelated iLGADs optimized for timing detection, with a periphery design

able to sustain high electric fields and a simpler single-side manufacturing process.

In addition, we are developing a new LGAD concept which is the Proton Low Gain Avalanche Detector (pLGAD), which will be applied for low-energy particle detection.

### 1st preferred time slot for your oral presentation

15:30-17:30 JST (8:30-10:30 CEST, 2:30-4:30 EDT, 23:30-1:30 PDT)

### 2nd preferred time slot for your oral presentation

19:00-21:00 JST (12:00-14:00 CEST, 6:00-8:00 EDT, 3:00-5:00 PDT)

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