

# Innovative silicon timing sensors for the future ALICE 3 experiment

*Friday 19 July 2024 20:40 (20 minutes)*

The ALICE Collaboration has proposed a next-generation heavy-ion experiment to be installed at the LHC Interaction Point 2 during the LHC Long Shutdown 4, in preparation for Run 5 (2035) and 6. ALICE 3 will be equipped with a Time-Of-Flight (TOF) detector for the identification of charged particles and which should reach a time resolution of about 20 ps, with novel silicon sensors. In this poster, the R&D behind the three technologies that are being considered for the construction of the ALICE 3 - TOF will be presented: innovative Low Gain Avalanche Detectors (LGADs) integrated in the design of fully depleted 110 nm MAPS (as in the INFN ARCADIA project), the novel concept of thin double LGADs and Silicon Photon Avalanche Diodes (SPADs), with the latter only for the outermost layer of the TOF detector.

## Alternate track

1. Detectors for Future Facilities, R&D, Novel Techniques

## I read the instructions above

Yes

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**Session Classification:** Poster Session 2

**Track Classification:** 12. Operation, Performance and Upgrade (incl. HL-LHC) of Present Detectors