

# Innovative Silicon Technologies for the Inner Detectors at the Compact Linear Collider (CLIC)

*Monday, 25 May 2020 14:18 (18 minutes)*

The R&D programme of the proposed Compact Linear Collider (CLIC) aims to fulfil the ambitious requirements of the inner detectors. This contribution provides an overview of these innovative technology studies, with an emphasis upon recent results and developments. Various monolithic prototypes are currently being investigated for the tracking detector in High-Voltage CMOS, High-Resistivity CMOS, and Silicon on Insulator technologies. The CLICpix2 small-pitch, hybrid readout ASIC has been produced in a 65nm commercial CMOS process to target the vertex detector requirements. CLICpix2 samples have been bump-bonded to planar active-edge silicon sensors, as well as capacitively- coupled to High-Voltage CMOS sensors. The characterisation and modelling of these devices has also lead to the development of a set of software and hardware tools, including Allpix2 for Monte Carlo simulations, Corryvreckan for test-beam data reconstruction, and the Caribou modular DAQ system.

## Funding information

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**Session Classification:** Sensors: Solid-state position sensors

**Track Classification:** Sensors