

## 8th "Trento" Workshop on Advanced Silicon Radiation Detectors (3D and p-type)

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# Silicon Buried Channels for Pixel Detector Cooling

*Wednesday 20 February 2013 09:40 (20 minutes)*

This talk reports the development of an integrated microchannels cooling into silicon devices. The microchannels are formed in silicon using isotropic SF<sub>6</sub> plasma etching in a DRIE (deep reactive ion etcher), after the DRIE process the channels are sealed by depositing a PECVD silicon oxide. We have realized on a silicon wafer microchannels with different geometries and hydraulic diameters. We describe the main fabrication steps of microchannels with focus on the channel definition and we report some selected results on the thermal characterization of several prototypes.

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