Contribution ID: **17** Type: **not specified**

Multi-Project Wafer (MPW) Runs of Full Custom Pitch Adapters

Wednesday 14 November 2012 11:50 (20 minutes)

Since the fabrication of the full series of pitch adapters for the modules of the End-Cap part of the ATLAS Semiconductor Tracker (SCT), from 2003 to 2005, CNM-Barcelona has made several fabrications a year of pitch adaptors for different users. Our technology for pitch adapters is not a PCB-like technology, but a microelectronics technology with clean room fabrication. This is how we achieve the very high density (fine pitch), 0-defects, bonding quality, and high yield. The drawback of this technology is that the fabrication requires a minimum batch of at least 10 wafers, and it is very common that research institutes need a relatively small number of devices for prototyping experiments, therefore a minimum batch of 10 wafers gives them too many more devices than they really need. For this reason we have decided to launch an MPW program in which many users (designs) can share a single batch to reduce costs (as in the case of most microelectronic foundries in the word). In collaboration with Alibava Systems S.L. we can handle both the full custom design of the individual devices, plus the mounting of the full wafer design, and then the fabrication and individualization of the pieces for the different users.

We propose to the RD50 community to make MPW (Multi-Project Wafers) for pitch adapters, as it is usually made for ASICs, where many different users place their individual designs for PAs in a full wafer design to obtain smaller series (20, 50, or 120). We think that this could be a good service to the HEP community and, in particular, to the radiation detectors R&D community.

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Session Classification: Radiation Damage in LHC detectors

Track Classification: Full Detector Systems