



Contribution ID: 130

Type: Poster

Quick turn-around ultrathin entrance window postprocessing of wafers and single dies ... a dream?

Wednesday 10 July 2019 16:25 (2 minutes)

Advances in pixellated Silicon sensors - be they hybrids or monolithic - are ubiquitous and rapid. More and more complex systems often take several development iterations before they reach maturity in the context of their often specialized applications. For some applications, namely measurements of UV or soft X-ray photons, or imaging of low- energy charged particles, an added challenge makes sensor development and fabrication more complex: absorption lengths or ranges well below a micrometer prevent sensors from even being tested, much less efficiently used, with the actual target radiation without complex additional "Post"-processing.

Methods to fabricate such ultrathin entrance windows have been established over the past decades, one of the most prominent examples is the MBE-based "delta doping" developed by NASA/JPL.

Community needs, in our perception, include quick turn-around access to processes such as this, allowing high-quality entrance window processing of wafers that can achieve single-nanometer passive layers - embedded in a process flow that can guarantee wafer thinning and lithography (e.g. for pad access) as needed. Looking to the future, an easily accessible solution with a capability to post-process MPW-obtained single dies for rapid evaluation of prototype sensors in realistic environments would also assist sensor development.

We will present these ideas and needs, together with an overview of available options today insofar as we are aware of them (and will be only too happy if there are points where we have to stand corrected), and invite the community as well as exhibitors to a hopefully lively discussion.

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Session Classification: Poster Exhibition 2, Posters ID 81 - 182, chair: Christer Frojdh

Track Classification: general