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A_{Si}-Si_i defect as possible origin of electronically activated degradation of boron and indium doped silicon

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New possibilities in the field of silicon characterization (low-temperature PL spectroscopy and low-temperature FTIR) at CiS are presented.
Furthermore recent results on investigations regarding a defect, which appears due to electron or photon injection and degrades the charge carrier lifetime in boron doped silicon, are shown. The defect is known since the 1970s. First it was found to appear after electron irradiation of n-in-p silicon solar cells for space applications. Later the degradation effect was detected in as grown Czochralski silicon as well. This defect will possibly impact n-in-p radiation detectors, too. A defect model based on A_{Si}-Si_i (A stands for B or In) is presented and discussed with regard to the observed defect properties.

Primary author: Dr LAUER, Kevin (CiS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH)

Co-authors: MÖLLER, Christian (CiS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH); RÖDER, Ralf (CiS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH); Dr WITTIG, Tobias (CiS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH)

Presenter: Dr LAUER, Kevin (CiS Forschungsinstitut für Mikrosensorik und Photovoltaik GmbH)

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