

TCAD Radiation Model for 4H-SiC

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4H-SiC is considered a promising candidate to increase the radiation hardness of particle detectors. Nevertheless, there is not yet a commonly accepted radiation model for TCAD simulations. On the contrary: the values presented in literature, i.e., the trap levels, types and cross sections, deviate significantly.

This project proposes the development of a model that is able to describe radiation damage of 4H-SiC in TCAD tools. Various device types (e.g. diodes, MOS capacitances and transistors) will be irradiated with multiple particle types (neutron, proton, gamma). Results from I-V, C-V and CCE (charge collection efficiency) measurements will then be used to fit a radiation model.

Type of presentation (in-person/online)

online presentation (zoom)

Type of presentation (scientific results or project proposal)

project proposal for future work

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