

PRESENTATION

Prof. Lado Filipovic

Institute for Microelectronics, Technische Universität Wien | Assistant Professor

Lado Filipovic is an Assistant Professor of Modeling and Simulation of Integrated Semiconductor Sensors at TU Wien, where he obtained his doctoral degree (Dr.techn.) and venia docendi (habilitation) in 2012 and 2020, respectively. He is actively involved in several IEEE sponsored conferences, such as IEEE Sensors and SISPAD. His primary research interest is studying the operation, stability, and reliability of novel semiconductor-based sensors using advanced process and device TCAD approaches.



"Modeling and Simulation of ALD in a Level Set Framework"

March 25, 2021 | 15:50 – 16:10

The level set method, combined with Monte Carlo ray tracing, is a frequently used technique, when modeling surface transport in process technology computer aided design (TCAD). Using this method surfaces and interfaces, which move during deposition and etching, are defined implicitly by storing the distance to the desired surface on a regular grid. Modeling a multi-step process such as ALD using this technique requires the preservation of surface information during the course of the simulation of topography motion, which is not straight-forward since the explicit access to surface elements and nodes is not available.

In this talk, the implementation of this framework in our in-house tool ViennaTS (<https://www.iue.tuwien.ac.at/software/viennats/>) is described and the adaptations which were made in order to include the ALD process therein are presented. Finally, the implementation of two specific models for ALD of TiO₂ and TiN, based on sophisticated surface kinetic models, is provided.