

Master thesis/Project work

Topic

- Development of ultra thin tunneling barriers for passivating contacts in Si solar cells

Tasks

- Deposition of Dielectrics with PECVD
- Dry and Wet etching of Dielectrics
- Metallization using vacuum based deposition methods
- Integration of tunnel barriers into a conductive passivation stack
- Thermal pre/post deposition treatment
- physical characterization using spectroscopic ellipsometry, XRR, SEM
- electrical characterization (current-voltage measurements, capacitance-voltage measurements)
- presentation of results in group meetings

Your qualifications

- Strong perseverance in experimental work
- Self-organized and conscientious way of working
- Interest in microelectronics
- Basic understanding of semiconductor device physics
- Fluent in either English or German
- Ability to work in a team

We offer

- an inspiring international and open atmosphere
- a team consisting of a well-balanced mixture of PhD students, experienced Post-Docs from different fields and process/facility technicians
- focused guidance throughout the project
- on-the-job-training
- access to various high-end characterization and fabrication tools
- involvement in projects with research institutes and industry

Namlab

NaMLab gGmbH is a research organization and associated institute of the Technical University Dresden. NaMLab provides industry oriented and basic research in material science for electronic devices. Based on its key expertise in dielectric materials for semiconductor devices NaMLab focuses on the integration and application of materials applied to reconfigurable and energy efficiency devices. NaMLab's approach of placing the device rather than the material system itself into the center of its research activities differentiates it from other world class material research activities in the Dresden area. Additionally, it allows taking full advantage of the already existing expertise by forming orthogonal consortia. It therefore fills the gap between basic materials research and its application towards electronic circuits and systems.

Timeline:

- Starting date: as soon as possible

Contact at Namlab

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By sending us your application documents, you agree to the use of your personal data for the purpose of the application procedure.

Responsible Professor

Prof. Dr.-Ing. Thomas Mikolajick