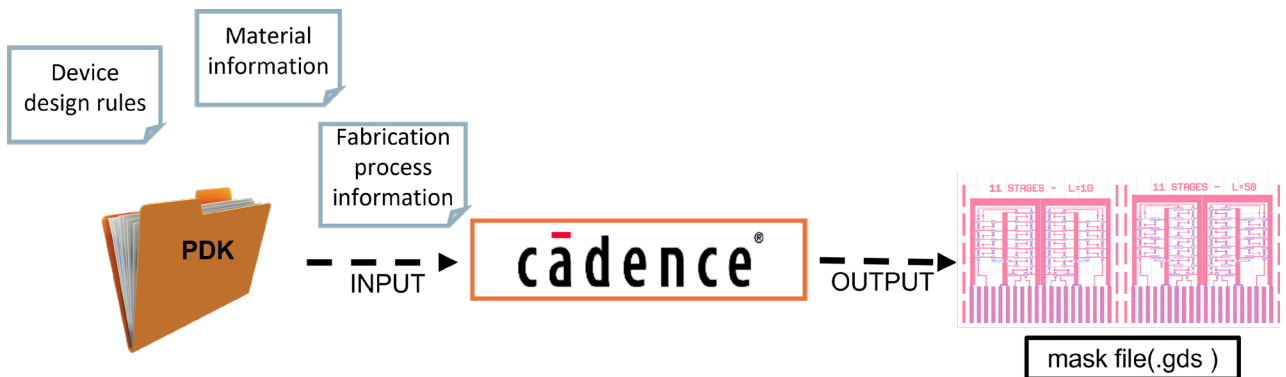


Master Thesis/HiWi: Process design kit implementation for printed technologies

Process design kit(PDK) mirrors the Technology-relevant information including device architecture, layer-stack, design rules, and device model in a comprehensive kit. The PDK can be integrated with the industry-level electronic design automation(EDA) tool. The resulting flow supports circuit designers in designing complex circuitry. The flow ensures circuit optimization by reducing the cost and time. The flow needs to be adapted to the electrolyte gated technology.



This thesis aims to optimize a process design kit based on an electrolyte-gated transistor. The process design kit consists of Verilog model which is modelled using characterization data from the single transistor. The process information including layer stack, design rules, device geometry etc will be mentioned in a separate designed file to be written in spice. The design kit needs to be integrated into our server which is equipped with cadence tools for circuit design. Finally, the circuit design will be fabricated in our in-house printing lab. The model hardware correlation needs to be performed to observe the performance.

The following skills are beneficial but not mandatory (can be learned):

- Knowledge of Spice, ADE programming language
- Knowledge of scripting
- Experience in characterization of electronic devices
- Knowledge of Cadence tool
- Hands-on mentality
- High interest in experimental work

**This thesis is adapted for students
from the following courses:**

- **Electrical engineering**
- **Physics**

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