

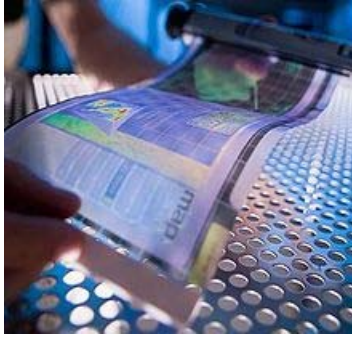
BSc/MSc project

NanoElectronics Group in collaboration with TU/e
www.nano-electronics.nl



Title: *Numerical simulation of charge transport in vertical organic field-effect transistors*

Supervisors: *Prof. Peter Bobbert and Prof. Wilfred van der Wiel*



Organic field-effect transistors can, for example, be used for flexible electronics.

Goal and motivation

Organic semiconductors are getting more and more important for different kinds of electronic devices like solar cells, light-emitting diodes (LEDs) and field-effect transistors (FETs) due to their suitability for low-cost and flexible electronics. We have developed a new type of organic field-effect transistor with very a short (~ 10 nm) organic semiconductor channel. To fully understand the behavior of this novel organic FET, we are planning to perform in-depth numerical simulations of the charge transport. We expect the behavior to differ significantly from conventional organic FETs which normally have much larger dimensions.

The assignment

- *Monte Carlo simulations of charge transport in vertical organic field-effect transistors in collaboration with Eindhoven University of Technology*
- *Comparison of simulated data with measured data*

Profile

This MSc project requires a background in (applied) physics. Affinity with solid-state physics and numerical simulations is recommended.

Graduating in NE

As a student in NE you are a full group member and expected to give an active contribution to ongoing research. You are involved in specific aspects of research and your work is likely to be part of a scientific publication. Besides you are also encouraged to participate in the regular social activities.

Contact

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