3 Open positions at imec (Leuven, Belgium)

Open PhD position available on Organic Photovoltaics

The production of photocurrent in a solar cell relies on the separation of a photo-generated electron-hole pair. In an organic semiconductor, such pair is tightly bound, and called an exciton. It can only be efficiently dissociated into free carriers at an energetically favorable interface between an electron donating material and an electron accepting material. Crucial to the efficiency of the overall photogeneration process is the diffusion of excitons to this donor/acceptor interface. A PhD topic is defined to understand the differences between devices which are able to harvest singlet versus triplet excitons, and also to discriminate between materials and devices which are able to exploit both energy and charge transfer in the ultimate generation of photocurrent. This will enable an effort to steer the synthesis of future generations of molecular materials in order to optimize solar cell efficiency.

Open PhD position available on Organic and Oxide Transistors

Amorphous oxide semiconductors have been introduced in 2004, and enjoy a considerable and growing interest from display industry. At imec, Ph.D. research is possible on the understanding and characterization of the band structure, and the relation between defect generation in the bands with electrical properties of transistors. Furthermore, most of the oxide semiconductors are n-type, i.e., conduct electrons, and only very few systems are known to allow measurable hole transport in the valence band. It will be very important to acquire a better understanding of hole transport in these semiconductors, because that would ultimately result in complementary oxide semiconductor systems, with great technological impact.

Open position for a researcher in Organic and Oxide Transistor Devices, for someone who is acquainted with PROCESSING in a clean room environment as well as device PHYSICS and characterisation of devices.