PhD Student Position
Plenoptic Signal Processing for Immersive Media

The Department of Electronics and Informatics (ETRO) of the Vrije Universiteit Brussel (VUB) and imec, has an open PhD position for a talented and motivated researcher in a cross-disciplinary research program encompassing applied mathematics, algorithms design, optics & photonics and image processing. The project is funded by the Research Foundation – Flanders (FWO), supporting fundamental scientific research in Belgium.

Research project
In this FWO-funded research programme on a Unified Sparse Representation for Plenoptic Modalities (UniMode), the PhD student will collaborate with an international team of scientists to design a versatile, compact but complete data representation of the 5D plenoptic image function.

A plenoptic image is a full capture of all perceived light rays, from any viewpoint position and viewing angle. This unified image modality will facilitate, among others, an efficient extraction of 2D views or 4D light fields for immersive media systems such as VR and AR.

Your objectives will be specifically centered around investigating representation models and associated coding algorithms to improve compression and transmission efficiency of the plenoptic content, and to optimize the Quality of Experience (QoE) in practical use-cases.

This project will run in collaboration with the Multimedia Signal Processing Group at EPFL Switzerland, headed by Prof. Touradj Ebrahimi, at which yearly internships are planned.

The ETRO department at VUB and imec
ETRO has a long-standing expertise in the area of multidimensional signal processing, and the team in which this research takes place is particularly involved with visual representations, compression, reconstruction and quality assessment methodologies for plenoptic modalities.

The team participates actively to JPEG standardization committee (ISO/IEC JTC1/SC29/WG1) and is involved in the coordination of the JPEG PLENO standardization initiative addressing at the moment light field, point cloud and holography modalities.

Researcher’s profile
Candidates should hold a master degree in electrical engineering, physics, computer science or equivalent areas. ETRO searches for an open minded researcher that has a genuine interest in digital imaging, mathematics, computer programming and physics (optics). An excellent command of the English language is mandatory.

Application
Enquiries/applications may be addressed to Prof. Peter Schelkens (peter.schelkens@vub.be). Your application must be accompanied with the following documents: statement of professional interest, CV, transcripts of records, and one example of technical writing (e.g., thesis, essay, course report or scientific paper).