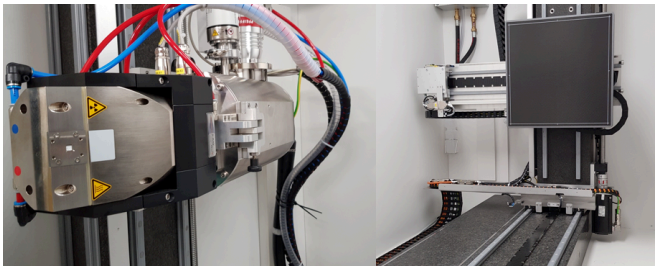
PhD student positions in Phase Contrast X-ray Imaging (f/m)

Description:
The microstructure of an object determines its properties. It tells you why some pillows are soft and why others remember the shape of your head. The Vision Lab develops new imaging techniques to look inside objects in 3D at the microscale. We now have open positions for PhD students to work on X-ray phase contrast tomography. Tomography is a 3D image reconstruction technique that leans strongly on large-scale numerical algebra. It has a wide range of applications in medicine (CT-scans), industry (nondestructive testing, inspection and quality control) and science (3D characterization and material analysis).



3D rendering – FlexCT UniTOM XL

With phase contrast X-ray CT, images can be acquired with unprecedented contrast far surpassing conventional CT contrast. This technique was only available at large-scale synchrotron facilities, but recent developments now allow for low brilliance, polychromatic X-ray sources in lab CT systems. The PhD students will design phase contrast gratings and develop phase retrieval and image reconstruction algorithms. These algorithms will be used for the analysis of fiber reinforced materials and food in collaboration with industry.

Qualifications:
You have a M.Sc. degree in Mathematics, Physics, or Engineering. You love interdisciplinary science, and want to advance the field of tomography with your skills, creativity and novel solutions. You like to understand and develop theory so you can put your new methods into practice. You also want to tell the world about your findings with sparkling presentations. Knowledge about tomography is not required, but certainly a plus.

Labs involved:
The Vision Lab (http://visielab.uantwerpen.be/) is an imec research group of the physics department at the University of Antwerp. The lab has unique expertise in the development of algorithms for reconstruction, processing and analysis of tomographic imaging data. The working environment is strongly interdisciplinary, combining techniques and insights from Physics, Mathematics and Computer Science. The group has a broad range of national and international collaborations with both academic and industrial partners. Recent publications on tomography can be found on http://visielab.uantwerpen.be/research/tomography .

Our offer:

An exciting research trajectory towards a PhD with a strong emphasis on putting theory into practice. Multidisciplinary cooperation with strong academic research and industrial partners. A

world-class research environment with state-of-the-art instrumentation and a brand-new microCT system (FleXCT).

Starting date:
To be discussed.

Want to apply?

- You can apply for this vacancy through the University of Antwerp's online job application platform until **15/10/2020**. Click on 'apply', complete the online application form and don't forget to include the following document(s): 1) a motivation letter, 2) a detailed CV (including followed courses, honours, grades, previous work, programming skills, publications, …) 3) contact info of two references 4) a weblink to a short video introducing yourself
- The selection committee will review all of the applications as soon as possible after the application deadline. As soon as a decision has been made, we will inform you about the next steps in the selection procedure.
- If you have any questions about the online application form, please check the frequently asked questions or send an email to jobs@uantwerpen.be. If you have any questions about the job itself, please contact Christine.waerebeek@uantwerpen.be