Doctoral candidate 1: Model-based region of interest 4DCT of smart materials

Host Institution	University of Antwerp, Belgium
PhD enrolment	University of Antwerp, Belgium
Primary Supervisor	Prof. Dr. Jan Sijbers
Subject area	Computational imaging, dynamic CT, inverse problems, smart materials

About this doctoral project and your tasks

In this PhD project, you will develop novel 4D image reconstruction methods for X-ray imaging where the object changes over time. In particular, the goal is to develop efficient 4D reconstruction algorithms to study advanced materials using dynamic cone-beam CT. To this end, physics models, CAD info and region-based prior knowledge will be integrated into the reconstruction method to enhance the quality of 4D CT images.

About the research group

Imec-Visionlab a vibrant research group at the University of Antwerp (http://visielab.uantwerpen.be), has an exciting open position for a PhD student in the domain of advanced image reconstruction methods for dynamic X-ray tomography. Tomography is an image reconstruction technique that leans strongly on large-scale numerical mathematics, particularly linear 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

The Vision Lab is a research group of the physics department at the University of Antwerp. The Vision 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 .

About the offer

- The selected candidate will be employed by University of Antwerp for **36 months** on the MSCA-DN project. In line with university regulations and following a positive evaluation by the doctoral committee, University of Antwerp may provide additional funding for a maximum of 12 months to complete the doctoral degree.
- Doctoral candidates are offered a **competitive remuneration** based on the MSCA allowances and the regulations of the host institution. The gross monthly amount at the University of Antwerp corresponds to the amount for doctoral scholarship holders. Moreover, funding is available for technical and personal skills training and participation in international research events.
- **Expected start date**: between April and September 2026. We encourage last-year master students who will graduate by this time to already apply.

More information is available in the general information document for X-CELERATE positions.

Specific Profile requirements

- Your profile aligns with the general requirements and eligibility criteria of the X-CELERATE project.
- You hold (or hold in the near future) a master's degree in **Physics, Mathematics or Engineering, or related studies**
- Have strong mathematical skills
- You are proficient in at least one programming language (e.g.,python)
- Background in **scientific computing and/or computed tomography** is a plus

How to apply

All applications must be submitted via the **X-CELERATE job platform**

Deadline for applications: January 25, 2026 23:59. More information about the application procedure is available in the general information document for X-CELERATE positions.

Additional information

For additional information about the research project, contact:

Prof. Dr. Jan Sijbers
Email: jan.sijbers@uantwerpen.be