

Doctoral candidate 1: Model-based Dynamic Tomographic Image Reconstruction

Host Institution

University of Antwerp, Belgium

PhD enrolment

University of Antwerp, Belgium

Primary Supervisor

Prof. Dr. Jan Sijbers

Subject area

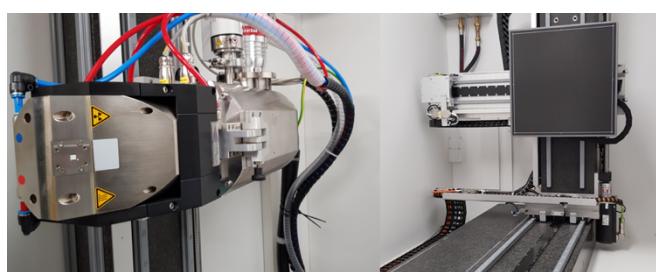
Computational imaging, dynamic CT, inverse problems, smart materials

About this doctoral project and your tasks

In this PhD project, we want to develop novel 4D image reconstruction methods for X-ray imaging challenges where the object changes over time. In particular, we aim at developing reconstruction algorithms for improved spatial resolution for the study of advanced materials using dynamic cone-beam CT. To this end, we will exploit CAD and region-based prior knowledge to enhance the quality of 4D CT images, and develop efficient adaptive CT imaging methods for in-situ tensile tests of 3D objects under stress.

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> .



Funded by
the European Union

X-CELERATE is an MSCA-Doctoral Network funded by the European Union,
starting in December 2025 (GA No. 101227146).

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, Computer Science, Mathematics or Engineering**.
- Background in **scientific computing and/or computed tomography** is appreciated.
- You are proficient in at least one programming language (e.g.,python)

How to apply

All applications must be submitted via the [X-CELERATE job platform](#)

Deadline for applications: December 31, 2025 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



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