Training the next generation of research experts on dynamic X-ray imaging and smart emerging materials

The MSCA-Doctoral Network project X-CELERATE is looking for 10 talented and motivated doctoral candidates eager to push the field of computed tomography. Doctoral Candidates (DCs) will enroll in PhD degree programmes and be employed for 36 months in a network with partners from academia and industry.

About X-CELERATE

X-CELERATE (www.x-celerate.org) is an MSCA Doctoral Network that aims to boost the development and characterisation of advanced materials. By providing a comprehensive training environment, X-CELERATE aims to cultivate a new generation of research engineers with an entrepreneurial mindset who will play a crucial role in propelling Europe's manufacturing industry.

Our offer

- Exciting **multidisciplinary research** in a collaborative network of top academic and industrial partners
- **State-of-the-art** computing and imaging infrastructure to support your research.
- You will be enrolled in a **PhD training programme** at excellent universities.
- You will be supervised by an international and intersectoral **doctoral supervisory committee**.
- You will benefit from a **training programme** with experts in the field, with a special focus on career development via research and transferable skills.
- You will be employed by the host organisation on the MSCA-DN project for a period of **3 years.** Depending on the host organisation, additional funding of max. 1 year may be available to complete the doctoral degree.
- You will benefit of a regular employment contract, with a **competitive remuneration** based on the allowances and country correction coefficients in the MSCA Work Programme 2023 (here, p. 81), with deduction of compulsory employer's social security contributions. The final gross salary is based on the applicable regulations of the host institution and country (more info in this MSCA information note).

- **Expected start date**: between April and September 2026. We encourage last-year master students who will graduate by this time to already apply.

Eligibility criteria of the Marie-Skłodowska Curie Actions programme

- **Doctoral Candidate:** At the date of the recruitment, you are not already in possession of a doctoral degree. Researchers who have successfully defended their doctoral thesis but who have not yet formally been awarded the doctoral degree will not be considered eligible.
- **Mobility rule:** Applicants can be of any nationality, but researchers must not have resided or carried out their main activity (work, studies, etc.) in the host country for more than 12 months in the 36 months immediately before their date of recruitment. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.
- For more information about being and MSCA fellow in a Doctoral Network, you can consult this information package of the European Research Executive Agency.

General requirements and selection criteria

- You hold a **Master's degree** in a relevant field (or will have obtained it by the time of your appointment).
- You are motived to **pursue a doctoral degree** through an individual research project.
- You can demonstrate **strong study results.**
- You have a **relevant scientific background,** with potential prior related research experience.
- In view of the international context, you sufficiently master the **English language**.
- **International mobility** of researchers is a key concept within the MSCA DN framework. As such, you are willing to participate in international meetings, trainings and secondments.
- You are **eager to tell the world** about your novel findings with attractive posters, sparkling presentations and high-quality papers in international journals and conference proceedings.

Application procedure

- You can apply for max. 2 doctoral positions.
- Applications can only be submitted via the online job platform until **16 November**, **23:59**. Your application must include a recent CV (including a transcript of study results), a motivation letter and contact info of two references.
- After closing of the applications, we will evaluate your application and inform you as soon as possible about the results. **Pre-selected candidates** will be invited to an online interview with the supervisor.
- **Short-listed candidates** will be invited to an online interview with the full selection committee in January/February 2026*.*
- The recruitment process of DCs within X-CELERATE will be **open and transparent**, with specific attention for gender balance and diversity. The recruitment will align with the principles set out in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.

More information

For general information about the X-CELERATE project and the job offers, you can contact the **X-CELERATE coordinator's office** via info-x-celerate@uantwerpen.be

Overview of the PhD positions

You can consult the specific job descriptions for each PhD position here.

PhD position	Host institution	Main Supervisor
DC 1: Model-based region of interest 4DCT of smart materials	University of Antwerp, Belgium	Prof. Dr. Jan Sijbers
DC 2: Accelerated edge-illumination-based phase contrast for smart material inspection	University of Antwerp, Belgium	Prof. Dr. Jan De Beenhouwer
DC3: Mathematical modelling of shapes and deformations	University of Passau, Germany	Prof. Dr. Tomas Sauer
DC 4: Progressive visual data analysis and visual steering in dynamic X-ray imaging processes	Fraunhofer IIS/EZRT	Prof. Dr. Christoph Heinzl
DC 5: Correlative phase-contrast 4DCT of shape-changing materials using synchrotron radiation and lab sources	Slovenian National Building and Civil Engineering Institute	Dr. Lucia Mancini
DC 6: Imaging structure and dynamics of hydrogel based 3D tissue culture models	Technical University Denmark	Dr. Rajmund Mokso
DC 7: High resolution 4DCT of smart materials	Czech Academy of Science	Dr. Daniel Vavrik
DC 8: Manufacturing and functional characterisation of 3D printed smart devices	Slovenian National Building and Civil Engineering Institute	Dr. Lucia Mancini
DC 9: 4D printed magnetic materials in fast-responsive, wireless and remote-control shape morphing devices	Delft University of Technology	Dr. Sepideh Ghodrat
DC 10: Sensory-based and prior knowledge exploitation in 4DCT	Tescan XRE	Denis Van Loo