**PhD position in the area of coincidence detection of electrons and X-rays in electron microscopy**

The **Faculty of Science** and the **Faculty of Applied Engineering** are seeking to fill a **full-time (100%)** vacancies for **doctoral scholarship holders in the areas coincidence detection of electrons and X-rays in electron microscopy**

The vacancy is situated within a national FWO fundamental research project entitled "Coincident event detection for advanced spectroscopy in transmission electron microscopy". In this project, the time resolved detection of accelerated electrons and X-rays will be explored as a novel route to advanced spectroscopy in electron microscopy. Indeed, when fast electrons hit a sample, they can excite the atoms in that sample and lose a specific amount of energy. This event can be followed by the emission of a characteristic X-ray upon decay of the atom to its ground state. Typically both electron energy loss or X-rays are detected separately and are used for spectroscopic purposes. In this project we will build a novel setup to make use of the time correlation between both information channels in order to obtain more selective information. The goal is to develop this novel setup and to apply and optimise it to relevant materials science cases. More information on the project can be obtained upon request.

This PhD opportunity is provided in the group for **Electron Microscopy for Material Science (EMAT)** (<https://www.emat.uantwerpen.be>) at the University of Antwerp, Belgium.

**Job description**

* You prepare a doctoral thesis in the field of Physics.
* You publish scientific articles related to the research project of the assignment.
* You work at the interplay of material sciences and engineering.
* You actively communicate the results of your work with the scientific community.

**Profile and requirements**

* You hold a master degree in a relevant field (physics, engineering, …)
* You can submit outstanding academic results.
* Students in the final year of their degree can also apply.
* You are motivated and accept the challenge to obtain a PhD in sciences and/or engineering.
* Your academic qualities comply with the requirements stipulated in the [university’s policy](https://www.uantwerp.be/en/about-uantwerp/mission-vision/three-core-tasks/research/).
* You are quality-oriented, conscientious, creative and cooperative.
* You have a healthy mix of theoretical insights with a hands-on attitude towards instrument development.
* Experience/affinity with software development, electronics, vacuum, fine mechanics can be very useful in this project.

**We offer**

* a doctoral scholarship for a period of **1 year,** renewable for a total of maximum 4 years after positive evaluation;
* the scholarship can start immediately;
* a gross monthly grant ranging from € 2.189,88 – € 2.513,13;
* a dynamic and stimulating work environment in a group of international standing in the field of electron microscopy.

**How to apply?**

* Applications may only be submitted online (please select “PhD Coincidence” at *<http://nano.uantwerpen.be/jobs/submission>*). You should upload a copy of your **CV**, a **motivation letter**, summary of your **Master thesis**, a list and **grades** of the courses that you took during your studies, and names of 2 professional **referees** as **one single PDF file**, until the closing date, **1 March 2019.**
* A pre-selection will be made from the submitted applications.
* The remainder of the selection procedure is specific to the position and will be determined by the selection panel.
* For questions about the profile and the description of duties, please contact Prof. Jo Verbeeck; jo.verbeeck@uantwerpen.be.

*The University of Antwerp is a family-friendly organization, with a focus on equal opportunities and diversity. Our HR-policy for researchers was awarded by the European Commission with the quality label ‘HR Excellence in research’.*