

The EMAT research group at the Faculty of Science (University of Antwerp) is seeking to fill a

## PhD position in the area of “3D Structure Characterization of Nanomaterials under Realistic Conditions” under the supervision of Prof Sara Bals

The vacancy is situated in an H2020 ERC Consolidator grant 3D Structure of Nanomaterials under Realistic Conditions (REALNANO). The overarching goal of REALNANO is to establish the structure-property connection of nanomaterials under realistic conditions. Tracking 3D changes of nanomaterials and their surface ligands in a thermal and gaseous environment is therefore required. We will develop innovative and quantitative 3D characterisation tools, compatible with the fast changes of nanomaterials that occur in a realistic thermal and gaseous environment. To visualise surface ligands, we will combine direct electron detection with novel exit wave reconstruction techniques.

### Job description

- Depending on your interest, a successful candidate will work on a combination of a selection of the following topics: (i) optimisation of the TEM sample support (ii) acquisition of fast tomography series (iii) heating tomography (iv) imaging using secondary electrons (v) experimental work with a gas flow holder (vi) visualisation of surface ligands (vii) developing novel 3D reconstruction algorithms, 3D modelling procedures and the processing of the exit wave reconstructions;
- You prepare a doctoral thesis in the field of sciences;
- You publish scientific articles related to the research project of the assignment;
- You present your work at national and international workshops and conferences.

### Profile and requirements

- You hold a master degree with background in e.g. physics, mathematics, materials science, transmission electron microscopy;
- You are enthusiastic and greatly interested in the quantitative analysis of electron microscopy data;
- You can submit outstanding academic results;
- You are highly motivated, quality-oriented, conscientious, creative and cooperative.

### We offer

- a doctoral scholarship for a period of 1 year, renewable for 3 years after positive evaluation for the PhD candidates;
- an exciting project in which we will aim to go significantly beyond the state-of-the-art;
- a competitive salary;
- the preferred starting date is between 1 May 2019 and 1 July 2019, but will be adapted to the selected candidate's availability;
- a world-class, dynamic and stimulating work environment with state-of-the-art instrumentation and computing facilities (see also <http://emat.uantwerpen.be/>).

## **How to apply**

You can submit by 15 April 2019 your motivation letter, CV, 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 uploaded on the Application Submission page at <http://nano.uantwerpen.be/jobs/submission/>

Additional information about the vacancy can be obtained from: Sara Bals, tel. +32 3 265 3284, sara.bals@uantwerpen.be