

Project description:

Nanoelectromechanical systems (NEMS) are nano-scale devices that consist of miniaturized electrical and mechanical apparatus such as actuators, beams, sensors, pumps, resonators, and motors. Due to the low power consumption, fast response time, and low mass, NEMS achieve extreme measurement sensitivity and have thus vast potential in many engineering and industrial applications. The design and analysis of any electromechanical system start with understanding the devices' thermo-electro-mechanical behaviour and their interactions with external forces. To adequately simulate a NEMS device, including damage and fracture at the atomic level that can lead to undesired behaviour, a multiscale multiphysics approach is required. This project focuses on physical modelling on different scales and computer implementation of novel numerical methods. The ultimate goal of the project is to develop a reliable, accurate and robust numerical tool that will be able to capture essential phenomena on the atomic level; however, still computationally efficient enough for practical simulations.

Profile:

- MSc degree in Materials, Civil, Mechanical Engineering, or equivalent.
- Experience with Finite Element Analysis and nanoelectromechanical systems.
- Knowledge of programming languages.

Time and location for interview:

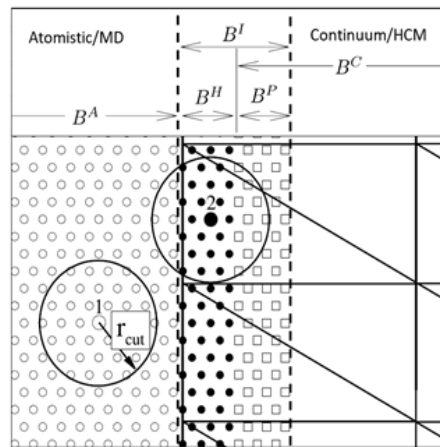
- 9:00am – 12:30pm on 17th February 2026
- Soete Laboratory, Ghent University (Belgium)
- Interview by MS Team

PhD Studentship position – Full time for 3 years - in Hp- adaptive multiphysics simulations of nanoelectromechanical systems

- **Last application date:** 13th February 2026
- **Location:** Soete Laboratory, Ghent University (UGent), Belgium, and Jožef Stefan Institute (JSI), Slovenia
- **Contract type:** Limited duration (3 years)
- **Starting date:** 1st March 2026
- **Occupancy rate:** 100%
- **Vacancy type:** Research staff

PhD Studentship Salary:

The project is funded by the Slovenian Research Agency (ARIS) and offer a net monthly salary of 1.4k Euro.



ARIS project coordinators:

Prof. Magd Abdel Wahab (UGent, JSI)
Dr. Gregor Kosec (JSI)

In the framework of an ARIS project funded by Slovenian Research Agency, Ghent University (Belgium) and Jožef Stefan Institute (JSI), Slovenia, are collaborating in research concerned with Hp-adaptive multiphysics simulations of nanoelectromechanical systems.

Application:

Please email your CV with the contact details of two references and a letter of motivation explaining your vision regarding the research topic to:

Professor Magd Abdel Wahab

(Magd.AbelWahab@UGent.be),

Soete Laboratory, Ghent University

Dr. Gregor Kosec

(gregor.kosec@ijs.si),

Jožef Stefan Institute



Institut "Jožef Stefan"

<https://www.arrs.si/en/>