



PhD researcher position

Online efficiency maximization of drivetrains using a Calorimeter in the loop

Diploma

Master in electromechanical, electrical, automation or control engineering

Job Description

Ghent University is a top 100 university worldwide and one of the major universities in Belgium, with more than 44000 students and 15000 staff members. At the department of Electromechanical, Systems and Metal Engineering, we have an open vacancy for a PhD researcher in the mechatronics research group at the campus Kortrijk. The research in our group focuses on modelling, control and optimization of the electromechanical and control aspects of industrial machines. Energy efficiency is critical to make these machines more sustainable. Related to this, accurate measurement and modelling of losses in drivetrain components is an important research topic, as it provides valuable information to improve both drivetrain design and operation. At the campus Kortrijk, we have a unique Calorimetric test setup infrastructure for accurate loss measurement, achieving a superior accuracy compared to conventional input-output measurements.

We have opened a vacancy for a PhD researcher position with the topic 'Online efficiency maximization of drivetrains using a Calorimeter in the loop' under the supervision of Prof. Jeroen De Kooning and Prof. Kurt Stockman. The key novelty of the research is to use a Calorimeter in an iteration loop to obtain an accurately validated loss model, to quantify losses in dynamic operation and/or to optimize settings on the drivetrain. The main research challenges are to speed up the iteration process using new algorithms which make use of dynamic thermal modelling and Design of Experiments. In the past years, the research group in Kortrijk has built up critical expertise and laboratory infrastructure to support this PhD.

You will work in the mechatronics research group at the campus Kortrijk. You will also work closely with industrial partners and Flanders Make, the research center for the Flemish manufacturing industry. The initial contract duration will be one year. The contract can be extended to a full 4 year PhD research period under the condition of a positive evaluation. You are expected to publish your research in scientific journals and to present your results on international conferences. Ghent University offers an attractive salary with additional benefits, a positive and inspiring working environment and numerous training possibilities.

Job Profile

You have a master degree in engineering, preferably in electromechanical, electrical, automation or control engineering. You are motivated, creative and have a passion for research. You have an affinity with both experimental research and simulation software. You must be sufficiently fluent in writing and speaking in English. You will work in a positive and international environment where a constructive collaboration with other researchers is expected. We expect you to be a team-player and a good communicator.

How to apply

Send your CV and motivation letter to jeroen.dekooning@ugent.be including 'Calorimeter PhD' in the subject of your e-mail. Please include contact details of two referees. If you pass the pre-selection, you will receive further instructions on the selection process and will be invited for a job interview, possibly via Teams.