

The Delft Center for Systems and Control of the Delft University of Technology, The Netherlands, announces an open position for a PhD position (four years) on the topic

## **Advanced Autonomous Model-Based Operation of Industrial Process Systems**

### [Mechanical, Maritime and Materials Engineering](#)

The 3ME Faculty trains committed engineering students and PhD candidates in groundbreaking scientific research in the fields of mechanical, maritime and materials engineering. 3ME is the epitome of a dynamic, innovative faculty, with a European scope that contributes demonstrable economic and social benefits.

### [Department description](#)

The Delft Centre for Systems and Control (DCSC) coordinates the education and research activities in systems and control at Delft University of Technology. The Centre's research mission is to conduct fundamental research in systems dynamics and control, involving dynamic modelling, advanced control theory, optimization and signal analysis. The research is motivated by advanced technology development in mechatronics and microsystems, sustainable industrial processes, transportation and automotive systems, and physical imaging systems. The group actively participates in the Dutch Institute of Systems and Control (DISC).

### [Job/project description](#)

This PhD project is a part of the *AUTOPROFIT* Project. This project is a joint endeavor of an international consortium of industrial and academic partners. Academic partners are Delft University of Technology (The Netherlands), Eindhoven University of Technology (The Netherlands), RWTH Aachen (Germany) and KTH Stockholm (Sweden). The industrial partners are ABB (Sweden), Boliden (Sweden) and SASOL (South Africa). This project is funded by the European Union via the Seventh Framework Programme for research and technological development (FP7).

The AUTOPROFIT project aims at a significant increase in applicability, life time benefits and performance of model-based operation support systems in the process industry by decreasing the modeling cost and by automating just-in-time maintenance based on economic criteria.

In this particular vacancy, the objective is to develop a self-regulating, autonomous control system for industrial processes. This system will continuously monitor the control loop, detect any drop in performance, and use the least costly experiments to update the model and adapt the control laws. To control costs even more tightly, the system will only start this updating procedure if it is assessed as being economically attractive.

The work shall lead to scientific publications and to a PhD thesis and will be performed in close cooperation with the other academic and industrial partners.

### [Requirement](#)

We are looking for a candidate with an MSc degree in systems and control, (applied) physics, mathematics, electrical engineering, mechanical engineering, chemical engineering or a related field. Candidates should have good analytical and modeling skills and good communication skills. Furthermore, the candidate should have an interest for both academic and applied research.

#### Conditions of employment

The Ph.D. student will be appointed for a period of four years. After the first year an evaluation will take place. The PhD student will work with both the academic and industrial partners of the international consortium. As an employee of Delft University of Technology the PhD student will receive a competitive salary as well as excellent secondary benefits in accordance with the Collective Agreement (CAO) of the Association of Universities in the Netherlands (VSNU).

#### Information and application

Additional information about the vacancy can be obtained from: dr. ir. X.J.A. Bombois, tel. +31 15 278 5150, [x.j.a.bombois@tudelft.nl](mailto:x.j.a.bombois@tudelft.nl), Delft University of Technology, DCSC, Mekelweg 2, NL-2628 CD Delft, the Netherlands.

Interested applicants should send their detailed curriculum vitae and a motivation letter to: [Application-3mE@tudelft.nl](mailto:Application-3mE@tudelft.nl) or to Delft University of Technology, Ms. M. de Groot, Faculty 3mE, HR department, Mekelweg 2, 2628 CD, Delft, The Netherlands.

When applying for this position, make sure to mention vacancy number **3ME10-09**.

The position stays open and applications can be submitted until a suitable candidate has been found.