

You are most welcome to attend the lecture "MODEL BUILDING FOR OPTIMIZATION"  
by **Pr of. Dr Edwin Zondervan**, Bremen University, Germany  
at Faculty of Technology and Metallurgy, Belgrade

Place: ***Conference / Lecture hall (SS), III floor***

Date and time: **Monday, September 5<sup>th</sup> 2016, 14:00 hrs**

### Lecture abstract

In this lecture I will discuss the role of optimization models in Process Systems Engineering. I will start with some general concepts in optimization and then introduce more advanced concepts such as multi-criterion decision making, logic inference, superstructures and transshipment models and model reformulations. I will show case the techniques on the basis of several engineering examples on which I have worked in the last years, these include biorefinery design, energy networks, sugar separations and cosmetics productions. This lecture will tell the story of a traveling professor that fills his optimization toolbox during his international visits.

### Short biography

Edwin Zondervan was born and raised in Leeuwarden, the Netherlands. After finishing his bachelor with a specialization in process automation in Leeuwarden he continued in Groningen with a M.Sc. in chemical engineering. Then he moved To Enschede and pursued a Ph.D. on modeling, optimization and control of dead-end membrane filtration of surface water. He defended his doctorate at Groningen in 2007. He worked from 2007 to 2015 at Eindhoven University of Technology.

He has been working as associate researcher at the laboratories of Technical University of Catalonia, Carnegie Mellon University, Denmark Technical University and Imperial College. Besides research Edwin Zondervan has been very active in the educational gremials where he trained many generations of students in process design, process control and numerical methods. For the latter one Edwin published a textbook that was released in 2014: "A numerical primer for the chemical engineer".

Recently Edwin Zondervan joined the Institute for environmental science and Technology of Bremen University, where he obtained a professorship in "Process Systems Engineering". The newly established Laboratory of Process Systems Engineering (PSE) at Bremen University (which was established within Bremen's Excellence Initiative) will conduct research in the field of sustainable and flexible system design of energy networks. The main objective of the laboratory of PSE is to develop network modeling techniques and dynamic optimization tools and to apply them to the design and operation of complex energy/process systems. The PSE group distinguishes two working areas: i) Novel energy technologies and devices and ii) Energy Efficient production. Where the challenges lie in 1) decisionmaking under uncertainty, 2) sustainable design and 3) managing complexity. In addition the PSE group will be active in the development of an Energy Systems Institute at Bremen University and setup a specialized course program in this field.