

## CV for Jakob Kjøbsted Huusom (1978)



### Degrees:

Ph.D. Chem. Eng., Technical University of Denmark, 2008  
M.Sc. Chem. Eng., Technical University of Denmark, 2005

### Positions:

Assistant Professor (Technical University of Denmark) since 2011  
Post Doc (Technical University of Denmark) 2009-2010  
Research Fellow/Assistant Professor (University of Trinidad and Tobago) 2008

### Research Area:

Dynamical Systems, Modelling of Chemical Processes and Application Oriented Modelling, Process Control and Model Predictive Control, Optimization and Optimal Control Problems, Open and Closed Loop System Identification and Parameter Estimation, Controller Tuning, Numerical Algorithms.

Current applications in Integrated Process Systems, Biochemical and Food Processing Systems and Automotive Flue Gas Cleaning Systems.

### Distinctions and awards:

Nominated for the teacher of the year award by the student organisation at the Technical University of Denmark (2013)

### Memberships of scientific committees, review, positions of trust (selected)

International Federation of Automatic Control (IFAC) Technical Committee 6.1 Chemical Process Control. International Program Committee for PSE-2015/ESCAPE25

ISI journal publications (WoS): 16; Citations: 34; H.index: 3;

### Supervision of PhDs, 2008 – present (ongoing or finished in 2008 or later):

Currently supervisor in 4 PhD projects.

- Operation and Control of Enzymatic Biodiesel Production
- Operation and Design of Diabatic Distillation Processes
- Modeling and Operation of Diesel Engine Exhaust Gas Cleaning Systems
- Design, Control and Analysis of Intensified Biochemical Processes

### Teaching and Education activities:

Optimizing Plantwide Control (MSc), Process Design (MSc+BEng), Experimental Unitoperations (MSc+BEng). Thesis supervision of 3 MSc and 3 BSc projects (7 MSc/8 BSc theses projects completed). Lecture in the Sino-Danish Center.

### Grants, 2008 – present (ongoing or finished in 2008 or later):

2010-2011. FTP Post Doc grant Id. 274-08-0059. (1.3 M DKK.)

2013-2017. HTF project grant. Next generation exhaust gas cleaning technologies for diesel vehicles. (19 M DKK)

### Research collaboration with industry, 2008 – present:

Haldor Topsøe A/S, Dong Energy A/S, Novo Nordisk A/S, Novozymes A/S, CP Kelco A/S, FLSmidth A/S, Unibio Aps, Bawat Aps, Biosystemer Aps, 2-Control Aps, Evon GmbH, Kronos AG

### Selected publications

1. Seyed Soheil Mansouri, Muhammad Imram Ismail, Deenesh K. Babi, Lida Simasatitkul, Jakob Kjøbsted Huusom and Rafiqul Gani. Systematic Sustainable Process Design and Analysis: Biodiesel Processes. Accepted for Processes 2013.
2. Thomas Bisgaard, Jakob Kjøbsted Huusom and Jens Abildskov. A Modelling Framework for Conventional and Heat Integrated Distillation Columns. Accepted for the 10th IFAC International Symposium on Dynamics and Control (DYCOPS10). 2013
3. Miguel Mauricio-Iglesias, Jakob Kjøbsted Huusom and Gürkan Sin. Control assessment for heat integrated systems. An industrial case study for ethanol recovery. Chemical Engineering and Processing: Process Intensification 67, 60 – 70, 2013
4. José Manuel Román Marín, Jakob Kjøbsted Huusom, Nicolas Javier Alvarez, Qian Huang, Henrik Koblitz Rasmussen, Anders Bach, Anne Ladegaard Skov, Ole Hassager. A control scheme for filament stretching rheometers with application to polymer melts. Journal of Non-Newtonian Fluid Mechanics 194, pages 14 – 22, 2013
5. Jakob Kjøbsted Huusom, John Bagterp Jørgensen, Niels Kjølstad Poulsen, and Sten Bay Jørgensen. Tuning Offset-Free Model Predictive Control Based on ARX Models. Journal of Process Control 22, pages 1997 – 2007, 2012
6. Jakob Kjøbsted Huusom, Håkan Hjalmarsson, Niels Kjølstad Poulsen, and Sten Bay Jørgensen. A Design Algorithm using External Perturbation to Improve Iterative Feedback Tuning Convergence. Automatica 47 (12) pages 2665-2670, 2011
7. John Bagterp Jørgensen, Jakob Kjøbsted Huusom, James B. Rawlings. Finite Horizon MPC for Systems in Innovation Form. *Proceedings of the 50th IEEE Conference on Decision and Control and European Control Conference (CDC-ECC)*, pages 1896 – 1903, 2011
8. Jakob Kjøbsted Huusom and Niels Kjølstad Poulsen and Sten Bay Jørgensen and John Bagterp Jørgensen. Adaptive Disturbance Estimation for Offset-Free SISO Model Predictive Control. *Proceedings of the American Control Conference - ACC*, pages 2417 – 2422, 2011
9. Jakob Kjøbsted Huusom, Niels Kjølstad Poulsen, and Sten Bay Jørgensen. Iterative Feedback Tuning of Uncertain State Space Systems. Brazilian Journal of Chemical Engineering 27 (3) pages 461 – 472, 2010
10. Jakob Kjøbsted Huusom, Niels Kjølstad Poulsen, and Sten Bay Jørgensen. Improving Convergence of Iterative Feedback Tuning. Journal of Process Control 19 (4) pages 570 – 578, 2009