

Dissertation press release

7.5.2019

## Computational tools for the process engineer

<b>Title of the dissertation</b>	Added value of extended dynamic simulation in process design and operational planning Laajennetun dynaamisen prosessisimuloinnin lisäarvo prosessi- ja automaatio suunnittelussa
<b>Contents of the dissertation</b>	Industrial production processes, paper mills for example, are highly complex. In addition to this complexity, the engineers responsible for the design and operation of these processes face other challenges in their work. The design of the processes and their operation should be done under a tight schedule and often with limited information while balancing multiple goals. This work proposes that simulation based computational methods can help in these challenges. Results from the work's four case studies showed that this indeed is the case. The proposed computational approaches can help in focusing the engineers' attention to most critical parts of the process and its operational strategy. Furthermore, the work shows that the simulation based computational approach is applicable both in quite early stages of the design work and even when the production process is in operation. The work continues the tradition of process systems engineering and lowers the bar for wider application other of simulation and other computational approaches, as well.
<b>Field of the dissertation</b>	Automation, Systems and Control Engineering
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<b>Opponent</b>	Professor Erik Dahlquist, Mälardalen University, Sweden
<b>Custos</b>	Professor Arto Visala, Aalto University School of Electrical Engineering, Department of Electrical Engineering and Automation
<b>Electronic dissertation</b>	<a href="https://aaltodoc.aalto.fi/handle/123456789/53">https://aaltodoc.aalto.fi/handle/123456789/53</a>
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