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THE OPTIMISATION OF COMPLEX INDUSTRIAL PROCESSES

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To achieve the Paris climate goals on the one hand, and on the other, ensure the European industry to stay competitive, production processes need to be optimized. Operation costs need to be reduced and an optimal performance of the processes should allow the reduction of energy consumption and raw materials, the number of defects/rejects, reduce waste and increase productivity. The EU Horizon 2020 project COCOP (Coordinating Optimisation of Complex Industrial Processes, <https://www.cocop-spire.eu/content/home>) has the objective to define, design and implement a concept that integrates existing industrial control systems with efficient data management and optimisation methods and provides means to monitor and control (large) industrial production processes. This should lead to a tool that assists the operators in a plant to optimize production continuously, using real-time monitoring and real-time advice given by the control system. The final objective of COCOP is to demonstrate prototype implementation and user acceptance. Within the project, there are two large industrial case studies, one using legacy (existing physical) models; the other one will involve a neural network based model. The advantages of neural network based modelling will be illustrated using a case from the chemical field, but these methodologies are truly field independent. Finally, unique in this context, is the social innovation part in which operators and plant staff are considered crucial stakeholders in the process of developing as well as accepting new ways of working.

Biography

Robert J Meier has completed MSc chemistry at University of Amsterdam, cum laude in 1974-1979; Charles Coulson (Advanced) Summer School in Theoretical Chemistry, Oxford in 1978 & 1980; PhD in experimental physics, University of Amsterdam in 1984. He served different positions such as group-leader ESR, Raman spectroscopy and Theoretical Chemistry at DSM (1985-1993); Research Fellow 'Modelling and Spectroscopy' within DSM (1993-2001); Corporate Scientist in the DSM Research organization (2001-2010); Programme manager Corporate R&D programme Industrial Chemicals (50%) and Corporate Scientist (50%) DSM (2002-2009); Visiting Scientist Research Center Juelich, Germany (part-time, 2002-2014); Principal Scientist In Silico Experimentation (2010-2018) and Senior Grants Manager DSM Materials Sciences (2014-till date). He was appointed as Visiting Fellow Chemistry Department of the University of York (1994-1997) and Honorary Visiting Professor University of York (1997-2016). He (Co-) Authored 134 peer reviewed publications, book on polymer analysis, several worlds' first break-throughs.

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