EFCE Spotlight Talks

Working parties on Process Intensification and Chemical Reaction Engineering

25 March 2024

16:00-18:30 CET

EFCE

APPLICATION OF ARTIFICIAL INTELLIGENCE (AI) TO CHEMICAL REACTION ENGINEERING AND PROCESSES INTENSIFICATION

In recent years, application of Artificial Intelligence (AI) in different fields of chemical engineering has rapidly grown as game-changer and driver for process and products innovation, improved energy and materials resource efficiency and sustainable chemical manufacturing. This webinar will present diverse examples of use of AI and Machine Learning (ML) techniques for improved chemical reaction engineering and process intensification, including optimization of chemical syntheses, accelerated prediction of molecular properties, rapid screening of programmable catalysts to optimize periodic steady states and operating protocols, as well as simulation and control of the dynamics of complex crystallization process.

PROGRAM

16:00 **Welcome and introduction**
Prof. Georgios Stefanidis, Chair of Working Party on Process Intensification
Prof. Kevin Van Geem, Chair of the Working Party on Chemical Reaction Engineering
Prof. Jarka Glassey, EFCE Executive Vice-President

16:10 **Programmable Catalysts: Algorithmic optimization of periodic steady states for enhanced productivity and selectivity**
Ass. Prof. Michael Kavousanakis, National Technical University of Athens - Greece

16:40 **Speeding up molecular property predictions for reaction engineers using machine learning**
Prof. Istvan Lengyel and Maarten Dobbelaere, University of Gent - Belgium

17:10 **Exploring the role of artificial intelligence and machine learning in enhancing pharmaceutical crystallization processes**
Dr. Christos Xiouras, Janssen Pharmaceutica NV – Belgium

17:40 **AI for chemical synthesis as a path toward process intensification**
Ass. Prof. Connor Coley, Massachusetts Institute of Technology - USA

18:10 **Closing remarks**
Prof. Georgios Stefanidis, Chair of Working Party on Process Intensification
Prof. Kevin Van Geem, Chair of the Working Party on Chemical Reaction Engineering

REGISTRATION

free of charge but mandatory

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