

EFCE SpotLight Talks

11 Webinars

from
23 November
to
4 December
2020



EFCE

European Federation of Chemical Engineering

The European Federation of Chemical Engineers (EFCE) is organising a series of free virtual spotlight talks on significant topics in Chemical Engineering. Eleven of our technical groups (Working Parties and Sections) are delivering short sessions of three or four talks by leading industrial and academic experts on:

Chemical Reaction Engineering, Education, Energy, Loss Prevention and Process Safety, Mechanics of Particulate Solids, Mixing, Multiphase Flow, Process Intensification, Quality by Design, Static Electricity in industry, Thermodynamics and Transport Properties.

Each session will focus on key topics in the area and the series enables attendees to sample topics in areas that they find interesting but may not otherwise have had the opportunity to attend to encourage cross fertilisation between specialist areas.

Energy talks will address the role of carbon capture and storage as we move to a negative carbon society bringing a Chemical Engineering approach to the discussion. It will discuss also the role of process integration for deep decarbonization and energy transition in industry. The Thermodynamics webinar will focus on thermodynamic tools for CO₂ capture. The Chemical Reaction session will address the role of electrification in the chemical industry. Quality by Design will discuss tools for the optimization of (bio)pharma processes such as system modelling, machine learning and digital twins. The Multiscale Flow and Mixing session will explore a promising modelling approach using of macroscale "compartments" which differ in certain properties of the flow, concentration and particle characteristic while the Mechanics of Particulate Solids considers common problems with conventional solid materials and renewable feedstocks. Process Intensification will focus on embedding life long learning of this now relatively mature topic. Electrostatics in Industry will discuss some specific cases where practical lessons can be drawn. Loss Prevention and Safety discusses resilience and safety of industrial clusters. Education session will focus on the changes brought about by Covid-19 on teaching methods and the new tools put in place.

The EFCE promotes scientific collaboration and supported the work of chemical engineers and collaborating professionals in 30 European countries representing more than 100,000 chemical engineers in Europe. With its Working Parties and Sections it covers all areas of Chemical Engineering.

EFCE's **Working Parties & Sections are at the core** of the organisation and form the scientific engine that drives many of EFCE's activities. Each of its 20 Working Parties focuses on a specific aspect of Chemical Engineering. They provide an important forum for networking among chemical engineers in Europe. Membership to the Working Parties is drawn from among EFCE's Member Societies. The five Sections are open to any professional chemical engineer, or a specialist in a related field, who is willing to contribute to the activities of an EFCE Section and of the Federation.

Further details and registration links at:

https://efce.info/Spotlight_Talks.html

Contact: Martine.Poux@toulouse-inp.fr

EFCE Spotlight Talks

Section on Energy

30 November

14:00 • 17:00
CET

Process integration for the energy transition in industry



This webinar is a joint effort between IEA, IETS TCP (Industrial Energy-Related technologies and Systems Technology Collaboration Programme) and the energy section of EFCE. The main aims are to discuss the role of process integration for deep decarbonization and energy transition in industry and to identify needs for further international work.

Although process integration is considered a mature system approach, used in most industrial sectors globally, this powerful process design methodology will be of increasing importance for the radical structural changes in industrial energy and process systems, which are needed for radical energy efficiency measures, efficient implementation of novel technologies and systems and deep CO₂ emissions mitigation.

The webinar targets a discussion on the role of process integration for the energy transition with four keynote speakers and with a discussion session around the following four topics:

- *New methods for process integration in the context of energy transition towards low emissions, high share of renewables and novel technologies*
- *Strategic planning of complex integrated industrial systems, taking industrial symbiosis, circular economy and future conditions into account with ex-ante based scenarios.*
- *The importance of digitalisation and databases for industrial energy system examples like the one developed in IETS Annex XV on industrial excess heat.*
- *Risks mitigation in the development and the operation of integrated industrial systems.*

PROGRAM

Introduction

Prof Thore Berntsson, chair of Industrial Energy-Related Technologies and Systems (IETS) within IEA – Sweden

Prof François Maréchal, EPFL – Switzerland; co-Chair of the Energy Section of EFCE

On the role of process integration in industrial symbiosis for the energy transition

Prof François Maréchal, Ecole Polytechnique Fédérale de Lausanne (EPFL) - Switzerland

Assessing the benefits of industrial symbiosis measures in a system perspective - Case studies from Sweden

Prof. Simon Harvey, Chalmers Univ. Technol. - Sweden

Process Integration for Effective Decarbonization and Eco-efficient Industrial Processes Development

Dr. Luciana Savulescu, CanmetENERGY, Natural Resources Canada

Industrial metabolism and industrial symbiosis potential: Material & Energy Flows Analysis in a steel plant industrial complex

Dr. Liang Dong, City University of Hong Kong

[registration](#)

Contact:
martine.poux@toulouse-inp.fr
francois.marechal@epfl.ch