

# Lunch Lecture e-Refinery

## Alexander Mitsos

### (Chemical) Process Industry: An Enabler for Renewable Energy?



The energy transition offers Europe a great opportunity to become a pioneer in the transition from fossil fuels and resources to renewable energy and chemicals. A major challenge in the integration of renewable technologies is to shape this transition in such a way that environmental benefits are maximized and the socioeconomic constraints of producers and costumers satisfied.

This applies in particular to the energy-intensive processes of the chemical industry, which - up to now - have been operated steady-state using fossil fuels and resources. As the share of renewable energy in the energy mix is becoming increasingly larger, novel process concepts enabling the integration of (fluctuating) renewable energy must be developed.

In this lecture, we present three key concepts that support a beneficial integration of renewable energy: Demand-side management on strategy and process level, novel processes and process routes for the conversion of renewable electricity into chemical products, and electricity storage systems based on liquid chemicals. We will show that it is key to combine these concepts to benefit as much as possible. However, this requires suitable methods for process design and operation that differ from the conventional ones.

**Please reserve the following colloquia in your agenda:**

**October 6**

Jurriaan Boon (TNO)

**November 3**

Willem Haverkort (TU Delft)

**December 1**

Dirk Holtmann (THM - Germany)

When Tuesday September 1

Time 12.30 - 13.30

Where Zoom meeting

*The login link will be sent after registration via [e-refinery@tudelft.nl](mailto:e-refinery@tudelft.nl).*

The e-Refinery initiative is a partnership between four faculties: Applied Sciences, 3mE, EWI and TPM. Researchers in the e-Refinery initiative focus their research on the electrochemical conversion of sustainable electricity into fuels and chemical building blocks, from the molecular scale to large-scale system integration. E-Refinery hosts a lunch lecture every first Tuesday of the month.  
Contact: [e-refinery@tudelft.nl](mailto:e-refinery@tudelft.nl)