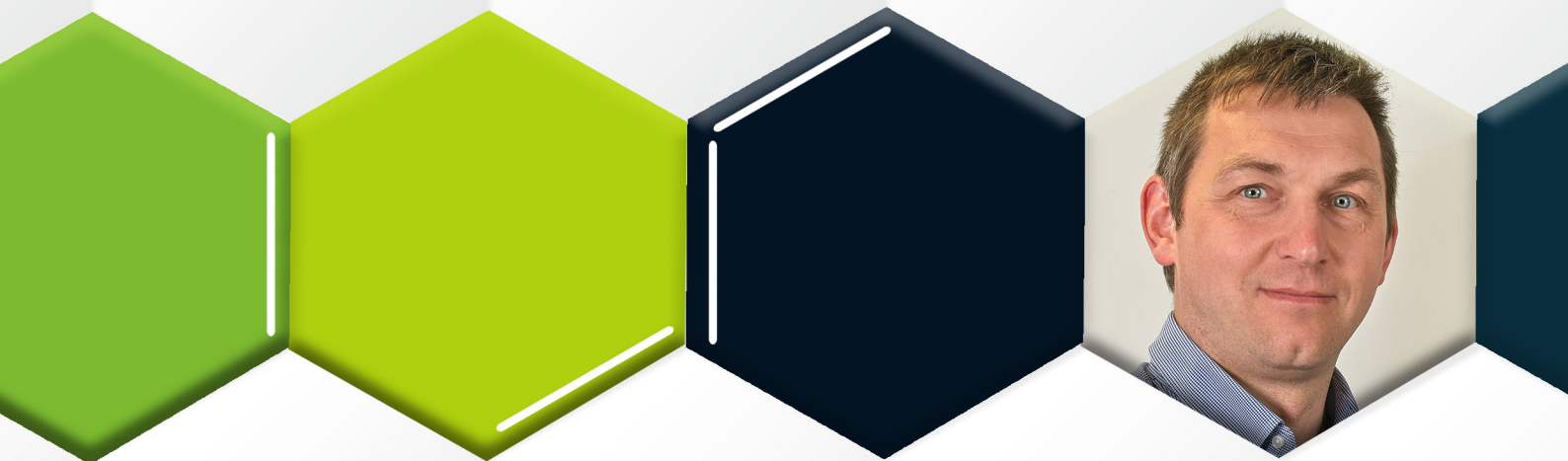


EuroTech Seminar

Structured reactors under inductive heating



09 June 2021

15:00-16:00 CET

Zoom link:

<https://us02web.zoom.us/j/85946790723>

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Conventional fixed bed and trickle bed reactors suffer from the non-uniform temperature distribution and the formation of hot spots. We introduced a novel concept of an inductively heated micro-trickle bed reactor with several adjacent thermal zones. In these reactors, catalytic zones are separated with several heating zones. This configuration creates a possibility to make a few reaction zones with different temperatures, while still being compact enough to use in a single fixed bed reactor. In this lecture, we provide an overview of the design methodology of a multizone zone structured reactor based on a convection and conduction heat transfer model. Several examples of enhancement of selectivity under fast temperature modulations in chemicals synthesis (among others direct amide synthesis and glucose isomerization in flow) will be highlighted. A scale-up approach to a 100 kg/day production scale will be presented and demonstrated with several examples.