Lunch and Learn

cytiva

Monday, March 21st

12:30 - 1:30 PM

Marriott Grand Ballroom: Section 8

Chromatography modeling trends: digital twins and beyond

Tobias Hahn, PhD, *R&D Leader*

Mechanistic modeling offers unparalleled efficiency in process development. In silico interrogation of a process provides complete flexibility in evaluating process conditions and extrapolating outside of calibration conditions, ultimately generating profound process understanding and increased productivity. Cytiva supports emerging modeling groups with training and consultancy, as well as with powerful tools, both in vitro, such as pre-calibrated columns, as well as in silico, such as sophisticated modeling software for synthesizing digital twins.

In this talk, we'll show how digital twins can intensify downstream process development by enabling many thousands of experiments to be simulated based upon sparse experimental data, and we'll look at examples from several industrial case studies. We'll dive into the theory and workflow behind mechanistic modeling of chromatography and explore how natural laws can be used to interpret complex data, understand the underlying phenomena, and simulate processes.

Tobias Hahn is R&D leader for mechanistic chromatography modeling activities at Cytiva. As former co-founder and CEO of GoSilico, now part of Cytiva, Tobias is responsible for delivering simulation software and workflows of highest quality. He received his undergraduate education in computational mathematics and technical physics in Karlsruhe and Stockholm, earning his PhD in chemical engineering from Karlsruhe Institute of Technology (KIT). During his PhD, he utilized his background in mathematics and software development to create the chromatography simulation software ChromX™, now known as GoSilico™ Chromatography Modeling Software. He enjoys combining his passions for math and bioengineering to create solutions that improve patients' access to novel medicines.