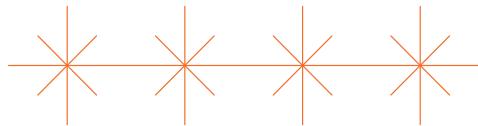




Politecnico
di Torino

Department of Environment,
Land and Infrastructure
Engineering



FLOW, JAMMING, AND THE PHYSICS OF DENSE SUSPENSIONS

Martin Trulsson, Lund University, Sweden

Politecnico di Torino, Main campus | DIATI Entrance 3 | Aula Bibolini
19TH February 2026 at 2.30 PM

Abstract:

In this talk, the speaker presents a comprehensive overview of the current understanding of dense suspensions and the closely related field of granular flows. The presentation outlines key rheological concepts—including shear stress, shear rate, and the $\mu(J)$ rheology framework—and discusses how particle shape, interactions, and microstructural dynamics influence macroscopic flow behaviour. Furthermore, it highlights recent developments in the use of advanced flow protocols, the response of suspensions under transient driving, and the complex phenomena that emerge in spatially inhomogeneous conditions. Together, these insights illustrate the rich, multifaceted nature of dense suspension flow and the challenges that remain in developing unified rheological descriptions.



Bio:

Martin Trulsson is a Senior Lecturer in Computational Chemistry at Lund University, Sweden. He earned his PhD in Theoretical Chemistry in 2011, focusing on intermolecular interactions in colloidal systems through advanced numerical methods. Since then, his research has centred on computational rheology, where he investigates how dense suspensions and granular materials flow—and under what conditions they cease to flow. His work combines theory, simulations, and modelling to uncover the microscopic mechanisms governing macroscopic rheological behaviour.

