הטכניון - מכון טכנולוגי לישראל

TECHNION - ISRAEL INSTITUTE OF TECHNOLOGY

הפקולטה להנדסה כימית
ע״ש וולפסון
The Wolfson Department of Chemical Engineering

Wolfson Department of Chemical Engineering Seminar
Lecture Hall 6, Wolfson Department of Chemical Engineering,
Wednesday February 12, 2020 at 13:30

Shear-induced particle migration in viscous fluids

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Shear-induce diffusion is the phenomenon of particle migration in a sheared suspension of high particle concentration. Analyses and measurements were mostly aimed, so far, at suspensions wth uniform particle size. However, in most practical systems the suspension particles possess a continuous size distribution. This work addresses such suspensions for the first time.

We present a model that is based on moments of the particle sizes and volume fraction. Test cases of steady and dynamic states are addressed, and various profiles are approximated and shown for flow of the suspension in a tube. The main effects involve particle migration that result in non-uniform concentration distribution, flattening of the velocity profile and particle size separation.

Refreshments will be served at 13:15