



סמינר - SEMINAR

הנדך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ד' 4.05.2016
(כ"ו בניסן, תשע"ו), בבניין דך-קאהן, קומה 0, אודיטוריום 1, 13:30.

ירצה:

Prof. Wallace WF Leung

*Department of Mechanical Engineering, The Hong Kong Polytechnic University, Hung Hom,
Kowloon, Hong Kong*

על הנושא:

Rotating microfluidics for Mixing and Process Intensification

The seminar will be given in English

להלן תקציר ההרצאה:

A novel method using transient inertial effect is used to mix a small milli- to micro-liter sample of different species in a rotating chamber. The primary flow generated from inertia induces a complex three-dimensional Coriolis flow that speeds up mixing by orders of magnitude in an otherwise viscous-force dominant micro-chamber. Experiments and numerical simulations are used to investigate the mixing due to the complex secondary flows generated. Such mixing and process intensification can be applied to cell culture, chemical reaction studies, and various other applications.

In a continuous-flow microchannel, a steady angular rotation generates throughflow down the channel by centrifugal acceleration, and at the same time the Coriolis acceleration generates crossflow that mixes fluids across the channel. The mixing can be carried out in either subcritical or supercritical mode depending on the channel width-to-height ratio. Experimental and numerical simulations have been used to confirm the results. A scale-up law on mixing is also presented based on dimensionless groups determined from Buckingham- π theorem.

בברכה,

מארח: פרופ"ח גלעד יוסיפון

09/01/16 א"י א"ת
מרכז הסמינרים