

סמינריון

הנך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ה' 16.06.16 (י' בסיון, תשע"ו), בבניין דן-קאהן, קומה 0, אודיטוריום 1, 14:30.

ירצה: רועי אלפסי

מנחה: פרופ"מ אמיר גת

מנחה שותף: ד"ר יוסי אלימלך, רפא"ל

על הנושא:

Title: Interaction Between Two Closely Spaced Waving Elastic  
Cylinders immersed in a Viscous Fluid

The seminar will be given in English

להלן תקציר ההרצאה:

We study the hydrodynamic interaction between two closely spaced waving elastic cylinders immersed within a viscous liquid, at the creeping flow regime. The cylinders are actuated by a forced oscillation of the slope at their clamped end and are free at the opposite end. We obtain an expression for the interaction force and apply an asymptotic expansion based on a small parameter representing the ratio between the elastic deflections and the distance between the cylinders. The leading-order solution is an asymmetric oscillation pattern at the two frequencies  $(\omega_1, \omega_2)$  in which the cylinders are actuated. Higher orders oscillate at frequencies which are combinations of the actuation frequencies, where the first-order includes the  $2\omega_1, 2\omega_2, \omega_1 + \omega_2$ , and  $\omega_1 - \omega_2$  harmonics. The latter  $\omega_1 - \omega_2$  mode represents the dominant first-order interaction effect. Experiments are conducted to verify and illustrate the theoretical predictions.

בברכה,

ד"ר יוסי אלימלך

מרכז הסמינרים