SEMINAR - סמינר

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ב' 20.01.2020
(כ"ג בטבת תש"פ), בניין דן קאהן, אודיטוריום 1, 14:30.

מרצה:

Dr. Xudong Liang

Polymer Science and Engineering Department, University of Massachusetts Amherst,
Amherst, MA 01003, USA

על הנושא:

Soft Materials in Soft Machines

The seminar will be given in English

להלן תקציר ההרצאה:

In recent years, soft materials have been extensively explored in a myriad of engineering applications of soft machines. Both opportunities and challenges are met in the fabrication and actuation of soft materials given their nature of nonlinear deformation and multiple-field coupling responses. In the talk, I will discuss my research on the mechanics of soft materials. The presentation will mainly contain two parts. In the first part, I will talk about morphology and pattern formation in soft materials. The nonlinear crease pattern in an everted tube and electromechanical instabilities of dielectric elastomer balloons will serve as two examples. Nonlinear field theories and numerical simulation results will be presented. In the second part of the talk, I will discuss the challenges in generating fast motion in soft machines and the mechanics of soft materials in the impulsive deformation. A soft actuator composed by liquid crystal elastomer (LCE) is demonstrated to perform jumping motion by amplifying the power output through a rational design. A novel strategy to program to the dynamic responses of soft materials in impulsive deformation with the mechanical metamaterial will be discussed.

מארח: פרופ' מיכאל שפירא

בברכה,

פרופ"א אתי סאס
מרכז הסמינרים