סמינריון

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ד'
11.04.2018 (כ"ו בניסן, תשע"ח), בניין דן קאהן, אודיטוריום 1, 30 :13.

מרצה :	אפרת לב
מנחה :	פרופ"מ שמוליק אוסובסקי

על הנושא:

Void growth in heavily deformed metals –
the effect of local gradients

The seminar will be given in Hebrew

תקציר ההרצאה :

A large number of experiments in the micron-scale exhibit size dependency leading to drastic changes in the mechanical behavior of the material with decreasing size. In order to explain this phenomenon, strain gradient theories were developed. Out of the many non-local theories which were developed in the last two decades, the mechanism-based strain gradient plasticity theory (MSG) by Gao *et al.*is appealing in its simplicity and ease of relating it to easily measured material properties .The MSG theory adopts a Taylor model formulation and connects between the strain gradients and dislocation interactions. In this work, a versatile user subroutine that allows for any dislocation- based material model to be incorporated in the strain gradient framework was implemented into the commercial FE software Abaqus . A well-established dislocation density based model was used in conjunction with the MSG theory to account for the mechanical behavior of heavily deformed Cu. As a study case, the effect of strain gradients on void growth will be presented and analyzed using FE calculations on voided cells.

בברכה,

פרופ"א אמני סאס
מרכז הסמינרים