

סמינר - SEMINAR

הנך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ב' 24.07.2017 (א' באב, תשע"ז), בבניין דן קאהן, אודיטוריום 1, 14:30.

ירצה:

Prof. Yuri Mishin

Department of Physics and Astronomy
George Mason University, Fairfax, Virginia

על הנושא:

Stress-driven grain boundary motion and grain rotation

The seminar will be given in English

להלן תקציר ההרצאה:

Recent research has led to the recognition that many grain boundaries (GBs) in crystalline materials couple to applied shear stresses and are moved by them in a manner similar to dislocation glide. For curved GBs, this “coupled” GB motion creates a driving force for grain rotation. These coupled processes can lead to interesting phenomena in polycrystalline, and especially nanocrystalline materials, such as stress-induced grain growth and stress-induced grain rotation.

This talk will provide a brief overview of the current knowledge of the coupling effect, focusing on recent molecular dynamic (MD) simulations of grain shrinkage grain growth and grain rotation. The coupling effect can lead to an unusual process in which the grain rotation increases the misorientation angle and thus the GB free energy. Applied shear stresses can accelerate, retard or even reverse the grain shrinkage, leading to stress-induced grain growth. Sliding on a curved GB always requires a change of its dislocation content. The impact of coupled GB motion and grain rotation on materials phenomena will be discussed

מארח: פרופ"מ דן מרדכי

בברכה,

פרופ"מ שאול אולוסקי
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