

סמינריון

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ד' 10.02.2021

(כח' בשבט, תשפ"א), בשעה 13:30 באמצעות הזום :

<https://technion.zoom.us/j/95221280492>

מרצה : דרור פרידמן

מנחה : פרופ' מ שמואל אוסבסקי

על הנושא :

Roughness Toughness Correlation and the effect of particle size and spacing on ductile fracture of metal matrix composite

The seminar will be given in Hebrew

תקציר ההרצאה :

A material's crack growth resistance depends on its resistance to the creation of new free surfaces, as well as its deformation characteristics, particularly those related to dissipation, which in turn are strongly influenced by the material's microstructure and the imposed loading conditions. However, it is not clear what is the relation, if any, between a material's crack growth resistance and the roughness of the corresponding fracture surface. Recently, a correlation between the crack growth resistance and statistical features of the fracture surface roughness was suggested to exist based on numerical calculations. Here, we present an experimental validation regarding the role of inclusion density on the measured fracture toughness and fracture surface roughness. The fracture toughness of Aluminum diamond MMC is probed for different diamond densities/sizes, using single edge notched tensile specimens (SENT). The SENT specimens are loaded quasi-statically and the digital image correlation technique is employed to extract the stress intensity factor at failure. A MIRA-3 TESCAN SEM is used to extract stereographic SEM images and reconstruct the fracture surface. The correlation between the measured fracture toughness and some of the statistical parameters of the fracture surface will be discussed and analyzed as a function of particle spacing and size.

בברכה,

פרופ' מ"ח אתי סאס

מרכז הסמינרים