Technion-Israel Institute of Technology
Faculty of Mechanical Engineering

הטכניון-מכון טכנולוגי לישראל
הפקולטה להנדסת מכונות

סמינריון

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ה' 15.06.17 (כא' בסיון, תשע"ז), בניין דן-קאהן, אודיטוריום 1 , 13:30.

תרצה: נופר שתיבי

מנחה ראשי: פרופ' דניאל ריטל, הנדסת מכונות
מנחה שותף: דר' אריה סידס, הנדסה אזרחית

על הנושא:

Constitutive model for describing the mechanical behavior of glassy polymer

The seminar will be given in Hebrew

להלן תקציר ההרצאה:

Polymers are increasingly used in both civil and military industries, e.g. for electrical systems, pipes, isolation, coatings and many more. Unlike metals whose thermo-mechanical behavior is well known, the available information about the mechanical behavior of polymers to forces is relatively limited and basic constitutive models are still rare. The reason for this is the complex viscoelastic-plastic nature of those materials. Yet, such constitutive models are much needed to design the above mentioned structures.

This research deals with the experimental mechanical characterization and modeling of a viscoelastic-plastic polymer named Hysol, a thermosetting polymer made of epoxy resin (Hysol-EE-4183) and hardener (HD3561). The mechanical characterization comprised uniaxial tension and compression in different strain rates and tri-axial loadings at constant strain rate by using a confining sleeve. The development of the constitutive model was based on cyclic uniaxial creep compression experiments, loading and recovery (unloading), at different stress levels. Additionally, investigations of the confining stress influence on the material response during creep were performed.

בברכה,

פרופ"א שאול אוסובסקי
מרכז הסמינרים