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 ב׳ 12.02.2018 (כז׳ בשבט, תשע״ח), בניין דן קאהן, אודיטוריום 1, 14:30.

מרצה: ארי פרל

מנחה: פרופ״מ שמואל אוסובסקי

על הנושא:

Effect of shot-peening mechano-chemical surface treatment parameters on friction reduction

The seminar will be given in Hebrew

להלן תקציר ההרצאה:

One way to reduce energy is to increase the efficiency of energy use. A large percentage of energy is spent to overcome friction between mechanical parts in contact and relative motion. Friction is governed by properties of the topmost layers of the surfaces in contact. Modifying the surfaces of materials is the obvious choice when trying to reduce friction.

The chosen method in this study for modifying materials surfaces is using shot-peening as a mechano-chemical treatment. The mechanism of the mechano-chemical surface treatment is to chemically activate the surface by mechanical means using a chemically stable and hard particle and then adding a tribologically beneficial particle to bond chemically to the surface. This can be done using shot-peening, where both types of particles are shot at the surface. Shot-peening is a cold-working method in which particles are shot at high speeds at a surface and cause deformations on the surface.

Experiments in this study were performed using a roller-block tribometer. The control of the test conditions (normal load, sliding speed and rate of lubrication) allow the simulation of boundary and mixed lubrication.

In this study the effects certain treatment parameters on the friction coefficient are examined using alumina particles to cause the deformations and sulfides to improve the tribological proprieties.

בברכה,

פרופ"א אתי סאס
מרכז הסמינרים