

## סמינריון

הנדך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ה' 26.03.15 (ו' בניסן, תשע"ה), בבניין דן-קאהן, קומה 0, באודיטוריום 1, שעה 14:30.

ירצה: אור סזנה

מנחה: ד"ר לאוניד טרטקובסקי  
מנחה שותף: פרופ' מיכאל שפירא

על הנושא:

### **Internal Combustion Engine with thermochemical recuperation fed by Ethanol Steam Reforming products**

להלן תקציר ההרצאה:

One of the main concerns nowadays is air pollution, climate change and lack of energy sources. Therefore, the development of a fuel-efficient engine fed by renewable fuels has become a significant challenge for the future powertrains development.

The study is focused on examining an internal combustion engine complemented with an onboard alcohol steam reforming system, where the engine exhaust gases are utilized to sustain endothermic reactions of ethanol reforming to the hydrogen-rich gaseous fuel (reformate) and the engine is fed by this reformate fuel. The exhaust heat is also used for heating and vaporization of the liquid ethanol.

The main purpose of the study is analysis and optimization of the internal combustion engine-reformer system's performance aimed at maximal possible improvement of energy efficiency and minimal pollutants formation. The simulations are carried out using three software packages: GT – Suite, ChemCAD and Matlab.

Finally, a reformer (heat exchanger) preliminary design is performed for an optimal internal combustion engine-reformer system.

בברכה,

ד"ר אורי אריאלי

מרכז הסמינרים