

סמינר - SEMINAR

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ג' 15.05.18 (א' בסיון, תשע"ח), בבניין דן קאהן, קומה 2 בחדר 217, 13:30.

ירצה:

Dr. Aslan Miriyev
Mechanical Engineering Department
Columbia University in the City of New York

על הנושא:

3D-Printable Soft Robotics

להלן תקציר ההרצאה:

Engineering nature-like adaptive and intelligent robots requires development of material systems that permit inherent actuation, sensing and computerized control. In my talk, I will present my novel compact soft composite-actuator approach possessing actuation ability as inherent responsive property, aimed at replacing conventional rigid motors and the existing soft-actuation solutions based on pneumatic or hydraulic devices. Specifically, I will discuss the composition-structure-properties relationships in a 3D-printable silicone/ethanol composite material and its implementation as a soft artificial muscle. In addition, I will present my work on conductive elastomer composites, followed by successful fabrication of all-soft material-actuators incorporating soft conductive heaters. Automated single-step fabrication of silicone-matrix composites using a newly-developed proprietary artificial muscle 3D-printer will also be demonstrated. Finally, I will highlight the barriers that still need to be overcome before truly nature-like intelligent autonomous systems can be engineered, including development of self-sensing soft-hard material systems and prediction of their properties using artificial intelligence (AI). I see this engineering challenge as a natural next step in the development of smart multifunctional composite materials combining sensing and actuation capabilities for adaptive robotics.

המארח: פרופ' יורם הלוי

בברכה,

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מרכז הסמינרים