

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ה' 7.12.2017 (י"ט בכסלו, תשע"ח), בניין דן-קאהן, אודיטוריום 6, 13:30.

**מרצה:** דניאל לוי

**מנחה:** פרופ' דניאל ריטל

**מנחה שותף:** ד"ר אמנון שיריזלי, רפא"ל

**על הנושא:**

**היענות מכאנית סטטית ודינמית של דגמים בדידים המיוצרים בריבוד מ  
Ti6Al4V**

**STATIC AND DYNAMIC MECHANICAL RESPONSE OF ADDITIVELY  
MANUFACTURED DISCRETE PATTERNS OF Ti6Al4V**

The seminar will be given in Hebrew

**להלן תקציר ההרצאה:**

Additively manufactured (AM) discrete patterns made of Ti6Al4V offer energy absorption potential for engineering application including blast and impact protection systems, structural aircraft, automotive, and medical applications. In this research, we compared three different cylindrical printed patterns fabricated by selective laser melting (SLM). Patterns share similar cross section and mass, in order to identify the "optimal" design of such structures for energy absorption purposes. The specimens consist of one columnar and two tubular patterns. The columnar pattern (8 Columns) was constructed of uniformly distributed columns. The first tubular pattern (Tube I) was constructed with the same outer diameter and tapered inner profile. The second tubular pattern (Tube II) had adjusted internal and external diameters. Quasi-static and impact (dynamic) load tests were carried out to investigate strain rate dependency, mechanical response and failure mode of each pattern, including a comparison with printed solid reference cylinder. Numerical simulations were carried out to complement the experimental work and develop a robust numerical tool for future structural optimization applications. The results show a strong influence of the geometry on its overall mechanical performance, including energy absorption. The most effective of those investigated patterns was Tube I for both quasi-static and dynamic regimes.

בברכה,

ד"ר אמנון שיריזלי

מרכז הסמינרים