

סמינריון

הנך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ד' 10.08.16 (ו' באב, תשע"ו), בבניין דן-קאהן, קומה 0, אודיטוריום 6, 13:30.

ירצה: עידן הר-נס

מנחה: חיים אברמוביץ, הפקולטה להנדסת אוירונאוטיקה וחלל

על הנושא:

Wide band vibration piezoelectric harvesters

The seminar will be given in Hebrew

להלן תקציר ההרצאה:

The present research thesis is related to the conversion of mechanical vibrational energy to electrical energy using piezoelectric patches.

The use of a single cantilever harvester as a harmonic oscillator to harvest vibration energy is not effective as it has a narrow bandwidth. Therefore, the research focuses on using as system with three bimorphs, lowering their natural frequencies by tip end masses and interconnected by springs, thus enlarging the system's bandwidth. The study, examines analytically and experimentally this bandwidth expansion. By correctly choosing the geometric sizes of the cantilevers, the adequate tip end masses and the ratio between the springs, the bandwidth is expanded yielding higher harvested power.

Typical harvested power of the present designed system can reach 20 [mW] at the first natural frequency and 5 [mW] at the second natural frequency.

The experimental results show a very good correlation between the test results and the analytical model.

בברכה,

ד"ר/אמילי אמיט

מרכז הסמינרים