

סמינריון

הנדך מוזמנ/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ה' 3.2.22 (בי באדר א', תשפ"ב), בשעה 13:30 באמצעות הזום : <https://technion.zoom.us/my/seminareby>

מרצה : אייל בן-יוסף

מנחה : פרופ' דוד אילתה

על הנושא :

Numerical investigation of PMN-PT for twisting actuators

The seminar will be given in Hebrew

תקציר ההרצאה :

This research considers the use of piezoelectric PMN-PT for the fabrication of a twisting actuator. PMN-PT is a single-crystalline material with very high piezoelectric coupling coefficients. These advantages make it a leading candidate to replace PZT in piezoelectric actuators and sensors.

We wish to examine the applicability of PMN-PT for pure torsion beam actuators. To this end, we analyze its advantages and limitations, specifically in terms of its low coercive field and dielectric strength. Then, we build two- and three- dimensional finite elements models of bending and torsion beams, and find the optimal operating scheme for each device. A good agreement was obtained between the two- and three- dimensional analyses.

We use an iterative solution scheme to find the optimal actuation voltage inducing maximum deflection of our bending beam. This scheme considers the re-poling effect in ferroelectric materials.

בברכה,

ד"ר איתי סאס

מרכז הסמינרים