# SEMINAR - סמינר

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ב' 25.03.2019 (י"ח באדר ב' תשע"ט), בניין דן קאהן, אודיטוריום 1, 14:30.

**מרצה:**

**Dr. Daniel Hexner**
The James Franck Institute
University of Chicago, USA

**על הנושא:**

## Malleable matter: Designing disordered metamaterials by natural aging

The seminar will be given in English

**להלן תקציר ההרצאה:**

Disordered solids are often out of equilibrium, evolving slowly as they age. The small incremental changes inherent in the aging process reduce the internal stresses through microscopic plastic deformations within the material. While often considered as merely a nuisance and detrimental to reliable material design, aging can, in fact, also be used as a tool to create novel functionality. Depending on the imposed strain, the system will evolve in different manners. We demonstrate this behavior by manipulating the system in such a way that the imposed strains direct the aging to achieve a desired response. We test our ideas both by tuning in a desired value of the Poisson's ratio and by programming an elastic signal pathway that transmits a strain from an input bond across the system to a designated output. Our design strategy also works well in the non-linear regime, allowing responses that depend on the magnitude of the strain. We argue that aging can be considered an optimization process, and that the wealth of microscopic parameters allows the design of complex elastic behaviors.

**מארח:** פרופ' אולג גנדלמן

בברכה,

*פרופ"א אתי סאס*
מרכז הסמינרים