



## **MECHANICAL ENGINEERING STUDENT SEMINAR**

**Wednesday, January 24 2024 at 10:00**, D. Dan and Betty Kahn Building, Room 217.

### **Analyzing shock attenuation characteristics of methylcellulose hydrogels using Finite element analysis (FEA)**

**Ofer Honen**

**Hosted by: Prof. Daniel Rittel**

Methylcellulose (MC) hydrogels are known to undergo a thermo-reversible transition (liquid to solid) upon heating. It has been shown that upon mechanical impact, the gels absorb efficiently some of the shock energy and momentum.

As of today, the effect of the container used to hold the gel and its effect on the energy attenuation has been largely overlooked. Consequently, we will present the design of an effective container and prove its lack of interference with energy mitigation.

Numerical and experimental results will be shown, as well as the expression developed for the shock attenuation as a function of both the gel's concentration and layer thickness.

Note: the seminar will be given in Hebrew