

סמינריון

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ה' 30.09.2021
(כ"ד בתשרי, תשפ"א), בשעה 11:00 באמצעות הזום : <https://technion.zoom.us/j/4603653861>

מרצה : בת חן ורפמן

מנחה : פרופ' דניאל ריטל

על הנושא :

Shock attenuation characteristics of aqueous methyl cellulose solutions

The seminar will be given in English

תקציר ההרצאה :

Methyl cellulose hydrogel is a thermo-reversible polymer, that solidifies from its room temperature liquid state with an increase in temperature (inverse freezing). This gel has been shown to be a highly effective shock mitigating material, with potential applications to the prevention of lethal internal injuries caused by shock waves (e.g. ballistic impacts or explosive blasts).

Yet, shock attenuation behavior of AMCS (Aqueous Methyl Cellulose Solutions) is not fully characterized, especially its mechanical properties and attenuation mechanism(s).

In this work, a phenomenological modeling of AMCS *momentum* attenuation as a function of the gel's thickness, concentration and frequency is investigated and modeled.

Next, we report the results of the systematic characterization of the *energy* mitigation characteristics of the gel, as an addition to the previously investigated shock momentum attenuation.

Finally, a study of shock-induced bubble formation in the AMCS and its potential correlation to the shock energy dissipation, under current investigation by using image processing and ultra-high-speed imaging, will be presented.

בברכה,

פרופ' י"ח איתי סאס
מרכז הסמינרים