סמינריון

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות **במסגרת הדוקטורט** שתתקיים

ביום ד' 25.11.2020 (ט' בכסלו, תשפ"א), בשעה 13:30 באמצעות הזום :

https://technion.zoom.us/j/93753605899

מרצה: אורן ריז'נסקי

מנחה: פרופ' דניאל ריטל

על הנושא:

Polyurea coating as a protective layer against hydrodynamic shockwaves

The seminar will be given in Hebrew

תקציר ההרצאה :

In this seminar, we will present experimental results as well as numerical simulation results regarding the optimal use of polyurea coating as a protective layer for structures subjected to hydrodynamic shocks.
Polyurea is a block co-polymer with unique micromechanical structure. It is comprised of two alternating monomers, making two phases, one of them soft at room temperature (rubbery) and the other hard (glassy). The hard phase forms hydrogen bonds crosslinks between chains, thus creating a microstructure similar to a fiber reinforced composite material but on the molecular level. This microstructure gives it remarkable properties, like high strain rate hardening, pressure sensitivity and shock mitigation via glassy transition. These unique properties can be exploited to mitigate shock waves and protect structures against various dynamic loading threats (from blast waves, wave slamming and projectile penetration to name a few).
The first part of the talk will address experimental results aimed at designing hull plates for high speed planing boats. Next, we will present and discuss results obtained from a second experimental setup designed to simulate explosions in water, i.e. much higher applied pressures. Finally, numerical simulations' results will be reported, that show the importance of the interface between the polyurea layer and the base metal, such to ensure optimal shock performance of the composite plate while fully understanding the nature and the meaning of the experimental results.

בברכה,

פרופ'/ת מתי מאס
מרכז הסמינרים