

MECHANICAL ENGINEERING STUDENT SEMINAR

Wednesday, August 28 2024 at 13:30, D. Dan and Betty Kahn Building, Room 217.

Static and dynamic mechanical behavior of the pig bone rib and correlation to its morphological characteristics

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This research concerns the mechanical behavior and failure of pig rib bones in order to find a correlation between the failure region(s) and the morphological characteristics. The rib is specifically selected due to the clear separation between the **cortical** (outer, harder shell) and **trabecular** parts (inner, spongy region) and its similarity to human jawbones with relevance to dental mechanics. The work is divided into 2 parts, each corresponding to a different loading regime – quasistatic and dynamic. DIC (digital image correlation) software is used to allow investigation of the specimens' failure along with micro-CT to characterize the initial three-dimensional microstructure. In the dynamic part specifically, IR cameras were utilized along with ultrahigh-speed imaging to pinpoint an unreported manifestation of thermal activity during failure.

Note: the seminar will be given in Hebrew