

הנדך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ה' 29.08.2018 (יח' באלול, תשע"ח), בניין דן קאהן, אודיטוריום 1, 13:30.

מרצה: תום דוד

מנחה: פרופ"מ רנה ואן האוט

על הנושא:

Time resolved PIV measurements of the vortex shedding characteristics of stationary rough and smooth spheres in a uniform flow

The seminar will be given in Hebrew

תקציר ההרצאה:

An idealized model of a 3D axi-symmetric bluff body is a smooth sphere whose wake characteristics (e.g. vortex shedding frequency, critical Reynolds number) have been studied in the past mainly using flow visualizations and point-wise measurements as well as numerical simulations. In this study, time resolved, high-speed (50-3000 Hz) Particle Image Velocimetry (LaVision GmbH) was used to compare between the vortex shedding characteristics in the wake of several smooth and bio-inspired rough spheres (diameters, $D \approx 8$ and 12 mm), rigidly mounted in a closed-loop water channel. The roughness on the spheres was modeled as spiraling patterns (the number of spirals according to Fibonacci series), widely found in nature (e.g. on pine cones) having different roughness depth and width. Subsequently, the "rough" spheres were 3D printed. Measurements were taken in a horizontal laser sheet plane positioned at the sphere's center at Reynolds numbers not exceeding 5000. Results will be presented on the Strouhal/Reynolds number dependence, wake length and vortex shedding dynamics. The latter are characterized by hairpin shaped vortices and the present work maps their shedding cycle..

בברכה,

ד"ר איתן סאס

מרכז הסמינרים