Technion-Israel Institute of Technology
Faculty of Mechanical Engineering

הטכניון-מכון טכנולוגי לישראל
הפקולטה להנדסת מכונות

סמינריון

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ד' 20.02.2019 (טו' באדר א', תשע"ט), בניין דן קאהן, אודיטוריום 1, 13:30.

מרצה: נדב יצחק

מנחה: פרופ'/ח דוד גרינבלט

על הנושא:

Aerodynamic Factors Associated with Rebreathing in Infants

The seminar will be given in Hebrew

תקציר ההרצאה :

A fundamentally new aerodynamics-based approach was developed to study rebreathing, namely the re-inspiration of expired CO_2-rich/O_2-poor air, in infants. Rebreathing causes asphyxia and is implicated in unexplained Sudden Infant Death Syndrome (SIDS) when infants sleep in a prone position. Using dynamically-scaled water-based experiments the effects of Reynolds, Strouhal and Froude numbers were isolated by considering different anatomical, physiological and environmental factors. Contrary to conventional wisdom, vortex rollup associated with expired air-jets impinging on a surface is the dominant mechanism leading to impeded transport of expired air and hence rebreathing (https://doi.org/10.1152/japplphysiol.00784.2018). Recent data elucidates decisive effects of infant nostril diameter and bedding texture on rebreathing. Apart from scientific findings, water-based flow visualization experiments are an excellent vehicle for "messaging," namely alerting the wider public to the dangers of placing an infant to sleep in the prone position (https://www.safesleepacademy.org/why-back-to-sleep/).

בברכה,

פרופ"א מתי סאס
מרכז הסמינרים