

סמינריון

הנדך מוזמנת/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ב' 7.12.2020

(כ"א בכסלו, תשפ"א), בשעה 14:30 באמצעות הזום :

<https://technion.zoom.us/j/93629127059>

מרצה : איל שלם גלעד

מנחה : פרופ' ח מתיו סאס

על הנושא :

Determination of flowable electrode electric conductivity

The seminar will be given in English

תקציר ההרצאה :

Flowable electrodes consist of flowing suspensions of conductive particles in an electrolyte, while static electrodes are typically comprised of conductive particles bound together with binder. Typical redox flow batteries utilize static electrodes, but an emerging area of study involves flowable electrodes. The electric conductivity of static electrodes are often several orders of magnitude higher than flowable electrodes, but flowable electrodes offer distinct operational advantages, such as dendrite-less metal deposition and the complete de-coupling of power and energy.

We demonstrate the discovery of a novel operational regime, at intermediate electrode flow velocities where large-scale particle motion through vortex-like formation occurs, which enables exceptionally high electric conductivity in the flowable state. We expect this new approach could enable the creation of a more versatile electrode which can form the basis of future electrochemical systems for energy storage, conversion, or water desalination. Furthermore, we investigate a tilted suspension electrode operating in this large-scale motion regime to create a cheaper and more robust suspension electrode design.

בברכה,

פרופ' ח מתיו סאס

מרכז הסמינרים