



Special Seminar

Matthew Suss
The Technion



Tuesday, February 14, 2023
4 pm Room 66-360

**Simultaneous Generation of Clean Water and Electricity
via Desalination Fuel Cells.**

The Cleantech Innovations Lab at Technion is developing a new technology which desalinates water and provides net electricity simultaneously from a single electrochemical cell, driven by the hydrogen/oxygen redox couple. We termed this device a “desalination fuel cell”. We will describe the operating principle, lab-scale cell results, and the fundamental thermodynamics to quantify the energy efficiency of any such cell performing a combined chemical reaction-separation process. We will also discuss the development of chloride-tolerant non-platinum group metal oxygen reduction catalysts promising for dealination applications, and the achievement of $> 95\%$ thermodynamic energy efficiency. The technology promises to extend the concept of the hydrogen economy to water purification, and we will discuss the outlook on this technology and potential application areas.

For further details, contact
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