



**Wolfson Department of Chemical Engineering Special Seminar
Lecture Hall 3, Wolfson Department of Chemical Engineering,
Thursday July 19 at 11 am**

Prof. David Jassby

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**Electrochemistry and Membrane-Based Water Treatment: Synergies and
Challenges**

The treatment and recovery of water from highly contaminated sources remains a serious challenge across multiple sectors and industries. While existing treatment technologies can produce the desired water quality, the costs in terms of energy, chemicals, and physical footprint, are often unacceptably high. Electro-active polymeric membranes offer significant advantages over traditional membrane materials, including fouling elimination, electrooxidation and electroreduction of aqueous contaminants, and self-heating properties. The goal of our research program is the development of innovative electrically conducting polymeric membrane materials and the characterization of their electronic and transport properties. Furthermore, we are interested in scalable manufacturing methods that can be used to fabricate large-area membrane materials, and the development of novel treatment processes that utilize the unique properties of our membranes. This talk will cover two ongoing research projects, including (1) the fabrication and characterization of carbon nanotube-based polymeric membrane materials; and (2) harnessing electrochemical reactions for enhanced water treatment processes. These projects rely on a combination of experimental and theoretical studies, and build on our expertise in colloidal science, electrochemistry, microbiology, and membrane separations.

Refreshments will be served at 10:45am