M.Sc. Position in Cutting-Edge Water Desalination Research

The laboratory of Assistant Professor Matthew Suss is searching for a highly motivated M.Sc. student to conduct innovative research in capacitive deionization (CDI) for water desalination applications. The research focuses on ion-ion selectivity, the preferential removal of particular ionic species relative to others present in solution (for example, K⁺ to Li⁺ as shown in the figure). Understanding the various mechanisms of ion-ion selectivity will be highly useful for treating complex wastewater and agricultural water systems in order to remove undesirable ions (like excess sodium and heavy metals) while retaining desirable minerals (such as magnesium and calcium).

Interested candidates should contact Eric Guyes at eguyes@campus.technion.ac.il. Students from the Grand Technion Energy Program (GTEP) and Russell Berrie Nanotechnology Institute (RBNI) are eligible.

**Research Description**

- Investigating surface functionalization methods for carbon-based electrodes
- Conducting CDI experiments to characterize the effectiveness of electrode treatments
- Collaborating with a senior PhD student to analyze electrode treatment effectiveness and performance
- Publishing findings in well-respected scientific journals

**MINIMUM REQUIREMENTS**

1. B.Sc. in engineering (mechanical, chemical, and environmental preferred) or science (chemistry preferred)
2. Ability to excel in a fast-paced team environment

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**Pristine Micropore**
**Modest size-based selectivity**

**Functionalized Micropore**
**Enhanced size-based selectivity**

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