

## **Desalination by Capacitive Deionization with Multiple Flow Channels**

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Increasing water scarcity is a major challenge of the 21st century, as periods of droughts are becoming longer and more frequent worldwide. Desalination of sea- and brackish water already provides 1% of the world's drinking water. Efficient desalination methods, thus, are in high demand. In this talk, I will demonstrate the entanglement between fresh water and energy as resources and I will provide a brief overview over current desalination techniques. Our research efforts focus on optimizing a new approach that is inspired by capacitive deionization. Here, ionic species are removed from the water through the application of an electric current, instead of removing the water from the salt, such as in reverse osmosis. I will show how by using multiple flow channels that are separated by microporous carbon electrodes, the capacitive deionization process can be performed semi-continuously. The aim is to provide an efficient, low-maintenance, and scalable approach towards clean water.