H2O Desalination and Purification Using CNT and Silver Nanoparticles

Alqassem, Hind (School: Al Khaleej National School)
Almheiri, Hamda (School: Al Khaleej National School)

A membrane made from multi-walled carbon nanotubes proved after 3 trials its ability to decrease the salinity of seawater. First, the membrane underwent formation and impregnation with silver nitrate. Second, it underwent calcination and was formed using a hydraulic hard press with a pressure of 55 MPa. Third, it was inserted into a syringe to mimic a desalination unit. This project involved the use of three different desalination membranes made from carbon nanotubes, graphite, and zeolite respectively. The membranes made from graphite and zeolite served as a comparison mean to prove the effectiveness of a carbon nanotube membrane. The desalination membrane made from carbon nanotubes proved to be superior to membranes made from graphite and in terms of decreasing salinity. Carbon nanotubes have the potential to open new doors for maintaining sustainability in the desalination industry.