

October 31, 2019

## **Toyobo and Saline Water Conversion Corporation sign MOU on joint pilot test aimed at accelerating use of new membrane technology for reusing concentrated brine**

Toyobo Co., Ltd. has signed a memorandum of understanding (MOU) on joint pilot test with Saline Water Conversion Corporation (SWCC) to realize the practical application of a new brine concentration (BC) membrane technology that efficiently uses concentrated brine discharged by seawater desalination plants. Toyobo's consolidated subsidiary Arabian Japanese Membrane Company, LLC (AJMC) also joined the two companies in signing the MOU on October 9, 2019.



Signing Ceremony

[from left to right] Saeed Al Harthi, CEO of AJMC;  
Ali A. Al Hazmi, Governor of SWCC;  
Seiji Narahara, President of Toyobo

In the Middle East, where rainwater and groundwater are scarce, many seawater desalination plants operate to make drinking water. Saudi Arabia has a high demand for desalination plants due to the harsh weather conditions and the nation's growing population and economy. Since the 1980s, Toyobo has provided its hollow fiber reverse osmosis (RO) membranes for desalination plants in the region. These membranes produce about 1.6 million tons of fresh water a day – enough to meet the needs of 6.4 million people.

The three companies aim to put into practical use a “brine concentration (BC) membrane technology” for treating highly concentrated brine. BC membrane, which was developed based on Toyobo's hollow fiber RO technology, is capable of separating concentrated brine discharged from seawater desalination plants into diluted seawater and highly concentrated brine. Using diluted seawater for desalination again will help make more fresh water, while the process of

evaporation and crystallization is expected to efficiently collect useful substances from the highly concentrated brine. The BC membrane technology, therefore, will boost efforts to fully reuse concentrated brine from desalination plants.

Following the MOU signing, Toyobo, SWCC and AJMC will start operating pilot test unit at SWCC's seawater desalination plant in Al Jubail soon. The three parties aim to put the technology to practical use as soon as possible by comprehending the membrane's basic properties and building expertise in operation of the equipment.

SWCC, which has focused on developing revolutionary technologies to treat concentrated seawater, is determined to address environmental burdens that concentrated brine from desalination plants impose on the sea. This endeavor to establish a sustainable seawater desalination technology is highly anticipated in Saudi Arabia's "Vision 2030," a plan to diversify its economy and develop public sector services. Toyobo will help develop and make practical technologies through the use of its membrane technology, which has crafted an excellent reputation over the years.

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