

WATER DESALINATION REPORT

The international weekly for desalination and advanced water treatment since 1965

Volume 47, Number 16

25 April 2011

Technology Idol

PORTABLE DESAL UNIT GETS NOD

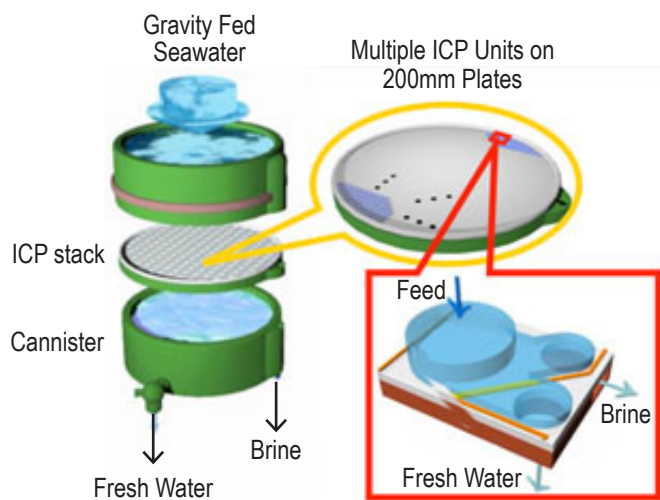
After hearing presentations from five participants, the Global Water Summit audience selected Sung Jae Kim's "nanofluidic desalination process" as this year's Technology Idol. Dr Kim is a research scientist in the Massachusetts Institute of Technology's (MIT) Department of Electrical Engineering & Computer Science.



Dr Sung Jae Kim

The process relies on nano-fluidics and ion concentration polarization to desalinate water. This membrane-less process uses an electrical potential, creating a repulsion zone to separate charged particles from flowing seawater. Dr Kim explained how the process could be used to provide an inexpensive, portable method of desalinating up to 0.3 L/min of water using a photovoltaic cell or small battery. He estimated that such a unit could be commercially available in two or three years.

The process relies on nano-fluidics and ion concentration polarization to desalinate water. This membrane-less process uses an electrical potential, creating a repulsion zone to separate charged particles from flowing seawater. Dr Kim explained how the process could be used to provide an inexpensive, portable method of desalinating up to 0.3 L/min of water using a photovoltaic cell or small battery. He estimated that such a unit could be commercially available in two or three years.



MIT's Nanofluidic Desalination Unit

This was the fourth year that the Technology Idol event has been held, and included the following unusually strong group of participating technologies:

Dr Dileep Agnihotri (Advanced Hydro) described a polymeric coating with anti-fouling properties to enhance the protection of wetted parts in a membrane system.

Dr Rick Stover (Desalitech) described his company's approach to reducing RO energy consumption that eliminates the need for an energy recovery device.

Bob Wright (Watervap) described a vapor compression evaporative that incorporates a fluidized bed heat exchanger to reduce scaling.

Dr Cees Buisman (WETSUS) introduced a microbial fuel cell that produces electricity and desalts water while bio-treating wastewater.

California

CONTRACTOR PICKED FOR REUSE EXPANSION

West Basin Municipal Utility District's (WBMWD) board has awarded Parsons with the Phase V Expansion of the Edward C. Little Water Recycling Facility in El Segundo. The 16 MGD (60,560 m³/d) expansion will increase the capacity of the plant, originally built in 1995, to 30 MGD (113,550 m³/d).

Under the expansion, the MF/RO/UV water purification facilities will be enlarged to produce an additional 5 MGD (18,925 m³/d) of water to prevent seawater intrusion and recharge groundwater supplies. The existing single pass BWRO system at the District's Chevron facility will also be enlarged by an additional 0.5 MGD (1,892 m³/d), and it will provide water to NRG's El Segundo Power Plant.

An ozone pre-treatment facility, irrigation water facilities and solids handling facilities will also be added.

The design-build contract is valued at \$60,565,000 and scheduled for completion in April 2013.

Technology

ADC CONCLUDES ITS ENERGY TESTING

After five years of operations to demonstrate energy efficient brackish and seawater RO alternatives, the Affordable Desalination Collaboration (ADC) has completed its final