

KAUST focused on water desal and reuse research

3-day Saudi Water and Power Forum opens in Jeddah

K.S. RAMKUMAR | ARAB NEWS

JEDDAH: The King Abdullah University of Science and Technology's (KAUST) Water Desalination and Reuse Center is very much focused on contributing to research and development toward provision of fresh water supplies across the Kingdom. This pledge was made at the three-day Saudi Water and Power Forum (SWPF 2009) which opened at the Jeddah Hilton on Sunday.

In fact, the mission of the center is to contribute research and development toward the integrated and sustainable exploitation of impaired-quality sources with a minimization of energy use, chemical use, waste residuals, environmental impact and carbon footprint. This mandate will serve the Kingdom, deprived of sufficient fresh water supplies and already heavily involved in desalination, as well as the proximate region spanning the Gulf, the Middle East, northern and eastern Africa, and South Asia. "The center will help the Kingdom to reach the global forefront of desalination or reuse technology research, development, adaptation and dissemina-

tion," Gary Amy, director of the Water Desalination and Reuse Center and professor of environmental science and engineering at KAUST, said in the opening session of the SWPF 2009.

Participating in a discussion on "KAUST: A new partner for research and industrial collaboration in water and membrane technologies,"

Amy said constraints of impaired quality sources and corresponding water treatment challenges ranged from high salinity to organic micropollutants and emerging pathogens (wastewater effluent) to trace metals and anthropogenic chemicals (urban storm water runoff). Drinking water treatment processes potentially targeting these and other contaminants include both separation and transformation processes, with process selectivity being a key attribute.

The center's research coverage includes optimization of existing technologies and hybridization of existing technologies, development of new selective technologies, adaptation and resilience of technologies to local and changing conditions, knowledge dissemination, and contributions to global economic development and the UN millennium development goals in water and sanitation. "Such an ambitious research agenda requires a multidisciplinary approach of various engineering and scientific disciplines," he added. In wastewater reclamation or reuse, the center is emphasizing technology development to promote potable reuse — both direct (pipe-to-pipe) and indirect (through use of a natural system buffer) — as well as wastewater reuse for industry.

emphasizes selective adsorbents (targeting trace metals) and natural infiltration systems for treatment and augmentation and subsurface storage. The center is nurturing relationships with KAUST international partners and seeking potential new international partners developing and promoting these relationships based on envisioned synergies and leveraging of research funds.

Presenting an overview of national technology roadmap for water R&D, Omar A. Al-Harbi, director of National Center for Water Research, King Abdulaziz City for Science & Technology (KACST), said having a strong technological capability in a domestic water industry is both a national security and economic imperative to Saudi Arabia. "While improved water technologies are of highest priority to the Kingdom to ensure adequate water supplies, it is necessary to reduce dependence on foreign technology to improve the price/value efficiency of water production and treatment and to develop a domestic water technology industry that will contribute to national economic performance and provide employment opportunities.

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