Recognizing the pioneering role of Sultan Qaboos University (SQU) in the Sultanate’s higher education sector as the most prominent institution for teaching, research and community service, the first Chair of Oman’s Research Council (TRC) was granted to SQU in order to meet the increasingly changing needs of development in the Sultanate and leverage the existing and future capacity in Nanotechnology, with a special focus on Water Desalination.

Activities of the TRC Chair in Nanotechnology at SQU include, research and development focused on the application of nanoparticles, nanomaterials and desalination processes. The chair strives for innovative research suited to the region, education and training of highly qualified personnel and in increasing public and industrial awareness of nanotechnology, amongst others. According to Prof. Joydeep Dutta, Chair in Nanotechnology for Water Desalination, the research group is involved in developing applications that address the needs of those who are without clean drinking water, cheap energy, unspoiled food, and the other necessities required for providing for a decent living. The Chair is focusing on dedicated research and development issues addressing water desalination both of seawater as well as brackish water.

A state-of-the-art laboratory of the Chair, containing wet-chemistry facilities, Analytical equipment room and electronics bench has been built in a single workspace at the College of Engineering premises. At present, a few broad themes for research were identified in consultation with the technical committee and work is continuing along these themes. The research themes are “Designer metal-oxide nanostructures”, “Capacitive desalination with functionalized nanostructures”, “Condensation induced renewable desalting”, and “Functionalized micro or nano membranes”. The unifying concept in the laboratory is to make use of inexpensive wet-chemical methods to fabricate innovative materials and futuristic device components with an eye on its application in water desalination and water treatment.

Potential applications research
Prof. Dutta said that nanotechnology-based research, education and training program at SQU will be focused towards developing nanomaterials for applications ranging from water desalination and purification, to energy and environment. “Our research group will attempt to address some of these aspects of creating knowledge in niche areas relevant to Oman and the region and develop a knowledgeable workforce for future development of Nanotechnology in local industries and finally in increasing public and industrial awareness of nanotechnology, amongst others. According to Prof. Joydeep Dutta, Chair in Nanotechnology for Water Desalination, the research group is involved in developing applications that address the needs of those who are without clean drinking water, cheap energy, unspoiled food, and the other necessities required for providing for a decent living. The Chair is focusing on dedicated research and development issues addressing water desalination both of seawater as well as brackish water.

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