



News release

23 October 2007

Novel technology to increase desalination energy efficiency

"New discoveries in microbiology and nanotechnology applied to reverse osmosis (RO) membrane technology will allow increased energy efficiency of desalination and water recycling plants around the world", said Dr David Garman, Environmental Biotechnology CRC Executive Director and the President of the International Water Association. Dr Garman opened the World Congress on Desalination & Water Reuse in Spain yesterday.

"Membrane fouling is one of the greatest contributors to increased energy usage and cost in the desalination and water recycling processes. Reducing fouling will significantly decrease operating costs through reduced energy consumption, a reduction in chemical usage and an overall reduction in a plants environmental footprint", Dr Garman continued.

Bacterial slime known as a biofilms is the main contributor to fouling in membrane systems and cause of corrosion of pipes. Environmental Biotechnology CRC (EBCRC) has discovered an effective natural cell signalling system that initiates dispersal in established biofilms and prevents the formation of new biofilms.

"Novel biofilm control technology is one of the significant and essential new developments that enable the development and exploitation of alternative sources of water. I believe that multi-disciplinary research will provide further breakthroughs in the near future", Dr Garman said.

"As climate change and urbanisation put a strain on global fresh water resources, water utilities are increasingly moving to desalination, exploiting poorer quality sources and incorporating high levels of recycled water. Such changes are posing many challenges as not only are these sources more energy intensive, they are also more expensive to treat", Dr Garman concluded.

About EBCRC biofilm control technology:

Pathogen harbouring biofilms are associated with persistent infections as well as fouling and corrosion in fluid processes. Current technologies used to deal with biofilms are largely ineffective, costly and based on toxic biocides.

Using knowledge of cell to cell signalling within biofilms, EBCRC is developing a range of biofilm control formulations that will stimulate natural bacterial dispersal events. The technology is applicable across many industries including pipe and membrane fouling control, cleaning and disinfection solutions, fresh produce washing, medical implant coatings and for use in infection control.

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