Evoqua Launches the Next Generation in Electrochemical Desalination

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Breakthrough Technology Can Lower Energy Costs By Up to 30% with Potential for More.

SHANGHAI & PITTSBURGH—(BUSINESS WIRE)—Evoqua Water Technologies today announced it has launched the next generation in electrochemical desalination that utilizes tunable technology that can reduce energy costs by as much as 30 percent in initial trials with the potential for even more (click to tweet http://ctt.ec/If61h).

Evoqua’s new Nexed™ module technology provides innovative features such as an advanced low-energy membrane, intelligent flow distribution, and tunable dissolved solids removal capability allowing new options for reduced energy use, costs, and facility footprint. This new gold-standard in electrochemical desalination was introduced this week at Aquatech-Shanghai, the largest water technology event in Asia. Nexed modules will initially be used in brackish water desalination applications and will shortly be expanded to seawater desalination applications.

Nexed modules provide cost-effective treatment options such as consistent water quality with variable feed water parameters or partial removal of contaminants without the need for blending. Because output quality can be manipulated by input power adjustments, this tunable feature also allows for options to minimize footprint and provide for optimized energy consumption. The base technology has proven unique features, including: low pressure, quiet operation, and tunable performance; and lays the groundwork for even more benefits in the future.

“Our Nexed system represents a breakthrough in electrochemical desalination,” said Ron Keating, Evoqua Water Technologies CEO. “Through our R&D efforts we have been able to bridge major technology gaps to make low-cost, effective and reliable desalination possible as well as lay the groundwork for even larger breakthroughs to come.

“By overcoming the challenges to make the technology adjustable for the end user, output quality can be manipulated by input power adjustments. This tunable feature also allows for options to minimize footprint and provide for optimized energy consumption. Nexed modules can be applied to a wide range of uses, including sea and brackish water, variable salinity applications, and water re-use options,” said Keating.

Technology Development History

A collaborative project between Evoqua’s Singapore and US R&D teams, engineers achieved new energy savings capabilities in a lab setting in 2008 which led to Evoqua winning the “Singapore Challenge” competition initiated by the country’s government. Since then, Evoqua has been developing a commercial version of its process which was launched today.

In December 2010, Evoqua demonstrated that its process could reach 1.65 kwh/m3 or nearly half the energy required with reverse osmosis at 3 kwh/m3. Successful technology development has continued, including the creation of a 50 m3/day demonstration system, laying the groundwork for today’s introduction as well as the potential for even greater energy savings in the future.

Applications

Nexed modules were designed as desalting engines and have many potential applications including:

- Brackish water TDS reduction
- Reverse osmosis reject recovery
- Small footprint bulk TDS removal
- Water reuse
- Variable salinity applications

Benefits and Core Technology Features

Nexed Advantages

- Optimized membrane for electrochemical desalination
- Cost driven design
- Low life cycle costs
Core Technology Feature

- Tunable - Intelligent TDS removal reduces energy requirements
- Adjustable - Optimized for low energy or small footprint
- Low Pressure - Only requires low pressure piping reducing installation costs
- Quiet Operation

How Evoqua’s Nexed™ modules work

Electrodialysis is a membrane process in which ions are transported through selective ion permeable membranes from one solution to another under the influence of an electrical potential gradient. Alternating ion selective membranes (anionic and cationic) can be configured to create separated streams of purified and concentrated water. For more information, visit [www.evoqua.com/nexed](http://www.evoqua.com/nexed) or [www.nexedwater.cn](http://www.nexedwater.cn).

About Evoqua Water Technologies

Evoqua Water Technologies is the global leader in helping municipalities and industrial customers protect and improve the world’s most fundamental natural resource: water. Evoqua has a more than 100-year heritage of innovation and industry firsts, market-leading expertise, and unmatched customer service, where it continues to transform water and wastewater. Its cost-effective and reliable treatment systems and services ensure uninterrupted quantity and quality of water, enable regulatory and environmental compliance, increase efficiency through water reuse, and prepare customers for next-generation demands. Evoqua’s unparalleled portfolio of proven brands, advanced technologies, mobile and emergency water supply solutions and service helps cities across the world provide and discharge clean water, and enable leisure and commercial industry to maximize productivity and profitability. For more information, visit [www.evoqua.com](http://www.evoqua.com).

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