

Water Production and Energy Storage by Salinity Gradient

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Categories:

- Green Technology
- Mechanical Engineering

Keywords:

- Clean Energy
- Clean Water
- Cost Efficient
- Drinking Water
- Energy Production
- Green Technology
- Mechanical Engineering
- Renewable
- Wastewater
- Water
- Water Treatment

Researchers at Purdue University have created a grid-scale salinity gradient for water production and energy storage. Desalination is the most energy intensive and costly step in the entire water production process, and there remains a need to create the supply necessary to meet the world's demand for drinking water. Currently, water systems operate at constant power, which is often wasteful and inefficient. Most facilities are not adapted for price fluctuations or seasonal changes as a result. By implementing new configurations for reverse osmosis in water management facilities, Purdue researchers were able to control water supply based on load. This approach, by splitting the recovery ratio of the feed into steps, can make RO both demand response capable and more energy efficient. In addition, this economical, reliable, and environmentally friendly solution is not limited by geographical or elevation constraints, unlike conventional plants.

Advantages

- Economical
- Reliable
- Ecofriendly

Potential Applications

- Water Production

-Energy Storage
-Renewable Energy

People:

- Warsinger, David Martin (Project leader)
- Cordoba, Sandra Patricia

Intellectual Property:

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Contact OTC:

Purdue Office of Technology Commercialization
The Convergence Center
101 Foundry Drive, Suite 2500
West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: otcip@prf.org