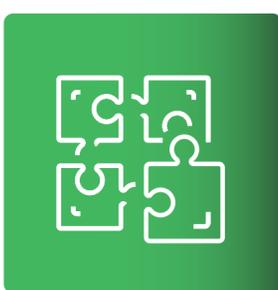




Efficient and Economic Selective Bromide Ions Removal and Recovery of Water



The Problem

Development of bromine compounds markets is strongly affected by new global environmental regulations that forbids the production of waste water containing bromide that are discharged to surface water systems. Furthermore, high bromide in conjunction with high organic carbon (OC) is widely recognized to be the worst-case scenario for drinking water plants. Inability to achieve low bromide concentrations by existing technological processes of water treatments will lead to annual addition of at least ~\$200 million. Also, forbiddance of use brominated flame retardants and biocides, hydraulic fracking ban will lead to loss of hundred million dollars every year.



The Solution

We developed simple, effective and cost-effective technology for specific removal and recovery of bromide ions from water. This cutting-edge technology removes and recovers bromide ions by electro-oxidation in the Asymmetric CDI (A-CDI) cells.



The Commercial Benefit

Our novel technology advantages are four-fold:

- It is simple
- It is efficient
- It is cost-effective
- And it meets the requirements of all regulations



Market Potential

- global bromine market



Target Markets/Industries

- global bromine market



Intellectual Property

Patent Pending



Team: Primary Inventor

Prof. Doron Aurbach

- Prof. Doron Aurbach is a professor in the Department of Chemistry
- He is a member of Bar-Ilan University (BIU) Senate
- Prof. Aurbach is a director of the Energy Center at the Bar-Ilan University Institute of Nanotechnology and Advanced Materials
- He is a leader of the Israel National Research Center for Electrochemical Propulsion, which includes 22 research groups from 5 leading academic institutions
- Prof. Doron Aurbach works systematically on R&D of a wide variety of power sources, electronically conducting polymers, and water desalination and purification
- He mentored 55 PhD students and 70 MSc students and has supervised 20 post-doctoral fellows
- Prof. Aurbach published more than 540 research papers in leading electrochemistry, materials science and physical chemistry journals



Future Research

Development of stable electrodes that allow long term processes including elaboration of effective cells and long term experiments that will prove stability.



The Opportunity

Companies are invited to license our patent through a licensing agreement with or without sponsored research.



Keywords

- Bromine compounds
- Organic carbon
- Oc
- Bromide concentrations
- Bromide ions
- Electro- oxidation
- Asymmetric cdi
- A-cdi cells