



Economic, Useful Anode Catalyst for Use in a **Redox Flow Battery**



The Problem

Current energy storage system batteries for stationary substation applications are extremely expensive.



The Solution

This innovation provides an anode catalyst having superior stability in a highly corrosive environment when operated in redox flow battery systems, while still exhibiting improved performance, and that is durable and cost-effective.



The Commercial Benefit

Our cutting-edge Hydrogen Bromine (HBr) RFB technology offers fundamentally:

- Economic storage solution,
- Fast kinetics,
- Reversible reactions,
- Low chemical costs.

The presented HBr has numerous advantages compared to solid-state electrolyte batteries:

- The possibility to scale the power input/output independently of the capacity of the system.
- The large-scale availability of both hydrogen and bromine.



Market Potential

The market for redox flow batteries will reach \$4 billion by 2027. The global market for flow batteries is expected to witness steady growth and the prospects for its growth will be driven by the rising utilization of flow batteries in various applications and government support such as funding and investment in R&D. Benefits such as its longer life cycle and discharge hours will result in its steady CAGR of more than 9% by 2020.



Target Markets/Industries

- Electrical Energy companies
- Chemical Industry
- Solar industry
- Wind industry



Intellectual Property

The patent covers the process for fabrication of the anode catalyst.



Team: Primary Inventor

Prof. David Zitoun

Prof. David Zitoun is Associate Professor in the Department of Chemistry and a member of the Bar-Ilan Institute of Nano-technology and Advanced Materials (BINA). Prof. Zitoun is leading a research group investigating advanced materials for energy applications; Li-ion batteries, fuel cells and other catalysts. His work has been highlighted in more than 70 publications, 8 patents. www.zitounlab.com



Future Research

The research laboratory develops electrocatalysts for a wide range of applications, fuel cells, redox flow batteries and water splitting.



The Opportunity

We invite industrial companies to license our patent through a licensing agreement with sponsored research.



Keywords

- Redox-flow batteries,
- electrocatalyst
- Energy storage systems,
- Hydrogen Bromine technology,
- HBr,
- RFB systems.