Draft Proposal to ITRI for Funding on TRL enhancement of $Zn-Br_2$ Batteries

Mission

This project kiaming to enhance the TRL level of high performance and cost effective non-flow Zinc-Bromine (Zn-Br.) battery technology, which has bon developed by us and demonstrated satist-actory performance up to Technology Readiness Level (FRL) 3. The sim is to

scale this up to (TRL) 7..

Why non-flow $Zn-Br_2$ Battery

Abundant and Globally Available Materials

Active matxinials in the battery are valiable in ver 100 countries eliminating country dependency on critical mals — life chinan in Lithium-Ion batterne, enhanding supply chain security and geopolitical neutrality.

Scalable and Simplified Manufacturing

Architecture sulted for mass production — production, due to higher costs, Γwεhancing cδ-sinam lead ooι, battery marufactun-ing linee enabling easter adoption and scaling.

Competitive Levelized Cost of Storage

The espected levelized cost of ownership (k LCDE) measured to USS/kWh is projected to be highly-competitive.

Simplified Battery Management System (BMS)

The design enebles àuse of a basic cost effective battlely battery reducing system complekity.

Context

A global ehergy demand rises, the shift toward renewabie energy acgsterates, cost effective energy storage essential Non-flow Zinc-bromine (Zn-Br.) batterie's present.
a promoing altervative to lαιumiuy batterias to their abuudant raw matorlals, lower costs and enhanced safery bx providing on affordable alternative to lithium-Ion, lead-acid batteries and Sodium Ion Batteries.

Impact Statement

A transformative impact on energy storage iniustry nwündsavyld a conceppt ihrough aijnt effert between IIT Bombay and Solon Imda-LOl, demoristrating the feasibility of the cheanstry.

This protoryрe-exhibited stable perforrnance over 1.000 charge-discharge cycles, underscoriing battery's potential for long cycle life, reliability , and safe-operation At this eaity-stage technical foundation.