

Decoupled All-Iron Flow Battery

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- The all-iron battery technology

- $3Fe^{2+} \xrightarrow{\text{charging}} 2Fe^{3+} + Fe^0 \quad \Delta E = 1.12V$
- Domestically abundant, non-toxic materials
- Low cost: target \$200/kW, \$50/kWh (4 hrs)

- Project Approach: Slurry Electrode

- Decouples energy capacity and power by plating onto flowing particles
- Enables higher current density operation

- Status

- Demonstrated electrode performance
- Characterized slurry rheology and predicted acceptably low pumping and shunt current losses

- Future Work

- Materials selection and design optimization for enhancing performance and reducing cost
- Scale-up and test a 400 cm² prototype cell

