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Title: Size effect realizes flow battery

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To improve the flow mass transfer inside the electrodes and the efficiency of an all-iron redox flow battery, a semi-solid all-iron redox flow battery is presented experimentally.

OverviewHistoryDesignEvaluationTraditional flow batteriesHybridOrganicOther typesA flow battery, or redox flow battery (after reduction-oxidation), is a type of electrochemical cell where chemical energy is

provided by two chemical components dissolved in liquids that are pumped through the system on separate sides of a membrane. Ion transfer inside the cell (accompanied by current flow through an external circuit) occurs across the membrane while the liquids circulate in their respective spaces.

This research focuses on the improvement of porosity distribution within the electrode of an all-vanadium redox flow battery (VRFB) and on optimizing novel cell designs.

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However, flow batteries suffer from a lower cycle energy efficiency (50-80%). This drawback stems from the need to operate flow batteries at high ( $>= 100 \text{ mA/cm}^2$ ) current densities to ...

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