

Development of Never-Ending Rechargeable Batteries

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- Chemical Engineering
- Chemistry and Chemical Analysis

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- Electric Vehicles & Cars
- Lithium-Ion

High-energy batteries are attracting large amounts of attention due to their possible applications in electric vehicles and grid storage applications. Current lithium ion batteries are attractive as a potential high-energy battery source, but lack full scale implementation due to their high cost for a short lifetime.

Researchers at Purdue University have developed rechargeable lithium ion batteries that yield 100% recovered charge-discharge capacities with stable flat-voltage profiles. Through providing an additional lithium source within the battery, this technology provides the required amount of lithium ions necessary to boost its performance via interconnecting electrodes. Furthermore, this technology has high coulombic efficiency (99%) after tests of 100 cycles. This technology opens the door for further development of lithium ion, sodium ion, and potassium ion batteries for large-scale energy storage applications.

Advantages:

- No battery life decay
- High coulombic efficiency
- Stable

Potential Applications:

- Lithium ion batteries
- Electric vehicles
- Energy storage

People:

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