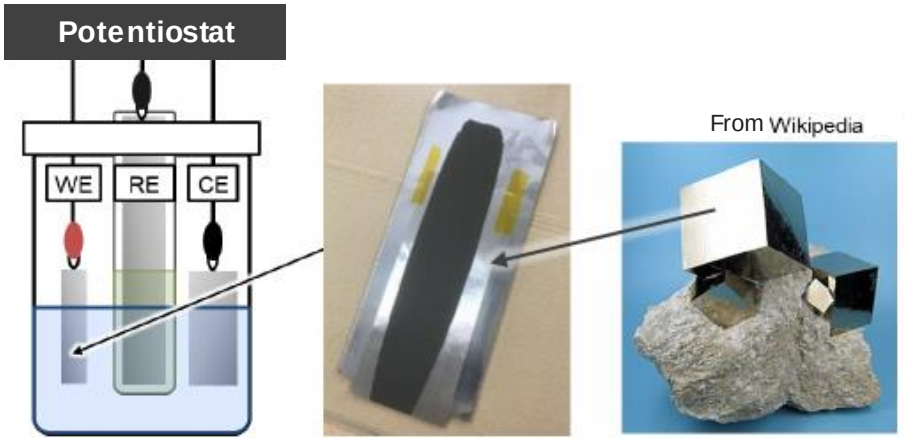
Tohoku Univ. Technology

Positive electrode material for magnesium storage battery

Realization of sulfur-based positive electrode material from sulfide!

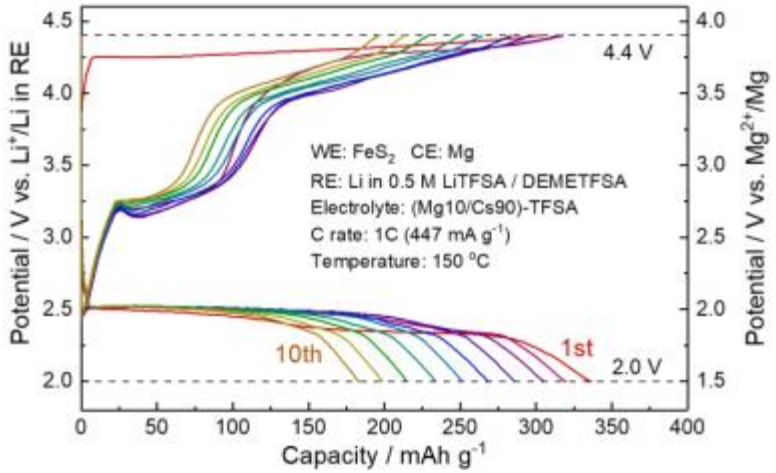


Overview

Magnesium battery has being researched and developed as a promising candidate for post lithium ion battery due to its abundant reserve and high capacity per volume. Up to now, a material with chevrel structure was almost the only known positive electrode material for practical magnesium battery. However, the electromotive force is about 1 V which is low, and a material that can generate high electromotive force has been searched.

This invention is about a sulfur-based positive electrode material made by electrochemical desorption from sulfide, which can solve above issues. Based on the invention concept, it is able to fabricate a "porous frame + active substance" composite material, and to provide a cathode material with a higher working potential and improved cycle characteristic than conventional material.

Features･Outstandings



Realization of high capacity & high potential!

Product Application

- Magnesium storage battery
- Expected to be applied to multivalent cation storage battery

Related Works

[1] Kohei Shimokawa, Tetsu Ichitsubo et al. ,Electrochemically Synthesized liquid-sulfur/sulfide composite materials for High-Rate Magnesium Battery Cathodes, J. Mater. Chem. A 9, 16585-16593 (2021)

IP Data

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