Tohoku Univ. Technology

Cathode material for rechargeable magnesium batteries

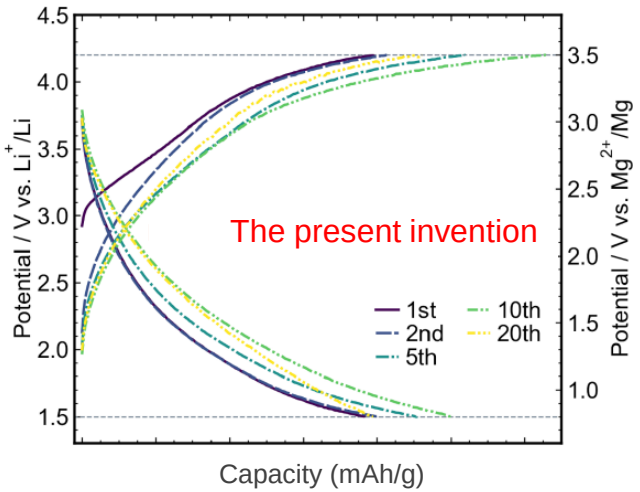
Activating disordered rocksalt oxides for cathode materials

Overview

Rechargeable magnesium batteries (RMBs) have been developed as post lithium-ion batteries. Previously, only the Chevrel compounds were known to be available as a cathode material for RMBs. However, practical RMBs require cathode materials, which could deliver high capacity with higher electrochemical potential.

The present invention provides cathode materials with a disordered rocksalt structure for RMBs. The novel chemical composition of the present material successfully enables reversible and substantial Mg intercalation, which has been previously believed to be difficult, especially in the rocksalt structure. The materials of this patent will expectedly yield cathode materials with higher capacity and electrode potential.

Battery Test



Reversible and substantial intercalation of Mg has been successfully achieved.

Product Application

- Rechargeable magnesium batteries
- Multivalent cation rechargeable batteries
- Dual-salt batteries

Related Works

[1] T. Kawaguchi, M. Yasuda, N. Nemoto, K. Shimokawa, H. Li, N. Okamoto, T. Ichitsubo,「Cathode material for battery using high entropy oxide」, the 90th Annual Meeting of the Electrochemical Society of Japan

IP Data

IP No. : JP2023-041425
Inventor : ICHITSUBO Tetsu, KAWAGUCHI Tomoya, YASUDA Masaya
Admin No. : T22-266

Contact

Tohoku Techno Arch Co., Ltd.
Please visit CONTACT here