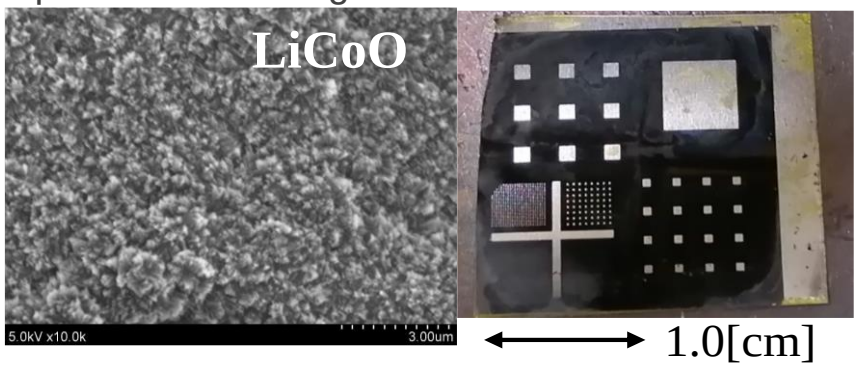
Tohoku Univ. Technology

Room temperature deposition of oxide solid ionic films

Thin film deposition technology by plating oxide solid ion battery

Deposition Patterning of oxide cathode electrode film



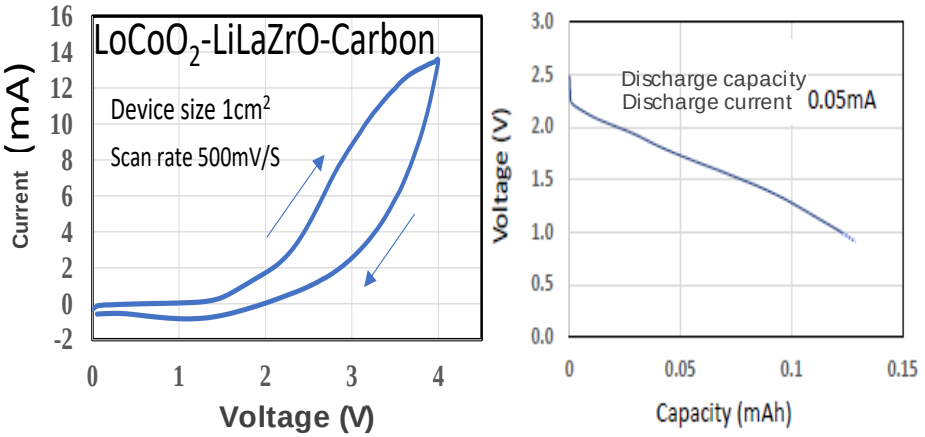
Overview

We have developed a technology to deposit solid-state ionic films used in solid oxide secondary batteries at room temperature by electroplating. This technology makes it possible to integrate small solid-state ionic batteries, which has been difficult until now. Some oxide solid-state ionic batteries are fabricated by powder sintering or sputtering, but they require a high temperature process, so the separation by thermal stress is a problem. The present invention provides a technique for depositing a solid ionic film (Cathode electrode and solid electrolyte films) by electroplating without requiring a high temperature process.

The films of the cathode active materials and solid electrolytes were successfully deposited and patterned by electroplating at room temperature. In addition, an ionic solid-state battery was fabricated using this technology, and its operation was confirmed (right figure).

Performance Evaluation of Solid Ionic Films

Li-ion solid-state battery produced by this technology



Product Application

- Solid ion battery
- Ionic sensor
- Ionic device

Related Works

IP Data

IP No.	:	PCT/JP2022/041647
Inventor	:	ONO Takahito
Admin No.	:	T22-111

Contact

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