

Room temperature deposition of oxide solid ionic films

Thin film deposition technology by plating oxide solid ion battery

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).

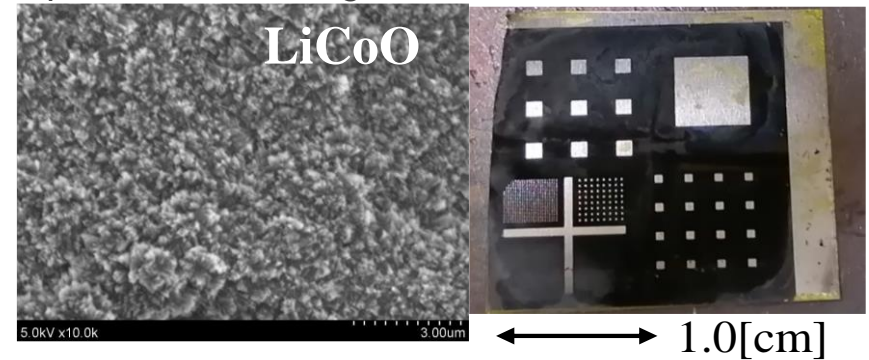
Product Application

- Solid ion battery
- Ionic sensor
- Ionic device

IP Data

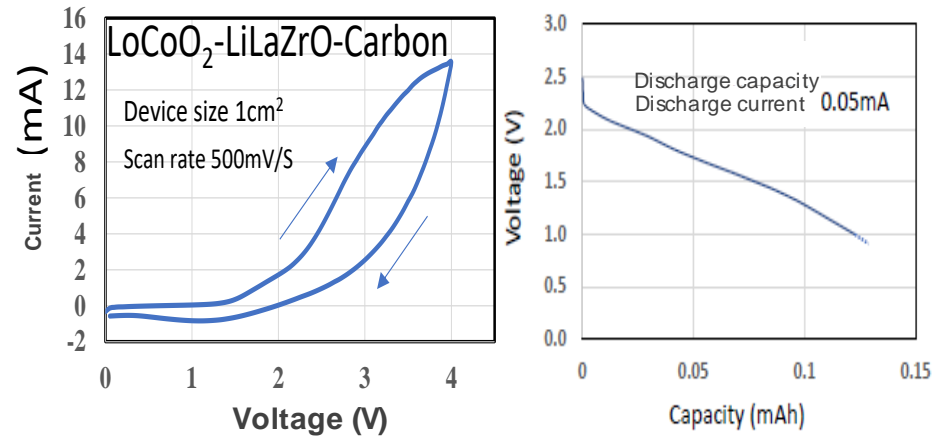
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Deposition Patterning of oxide cathode electrode film



Performance Evaluation of Solid Ionic Films

Li-ion solid-state battery produced by this technology



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