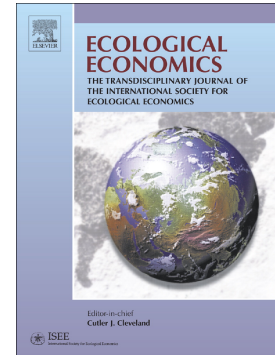


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Non-successive degradation in bulk-type all-solid-state lithium battery with rigid interfacial contact

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Abstract

Bulk-type all-solid-state lithium battery adopting garnet structured electrolyte has been successfully realized by improving the state of interface contact between cathode/electrolyte, as well as cathode particles in the composite layer. The cycle life of the battery has been examined at room temperature, and at elevated temperature of 80°C and 150°C. It exhibits that under high tested current density, the cell exhibits non-successive degradation during cycling, whereas successive degradation under low current density. Impedance spectroscopy measurements, as well as cross-sectional SEM images have been used to complement the electrochemical data in examining structural changes. The results indicate that the destructive damage of cracks originated from the volume change of LiCoO₂ particles in the composite layer are

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