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Ding, Junwei; Du, Tao; Smedskjær, Morten Mattrup

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Constructing artificial metal-organic framework glass layer to regulate lithium plating and stripping

Junwei Ding, Tao Du, Morten M. Smedskjaer

Department of Chemistry and Bioscience, Aalborg University, Aalborg, Denmark

Abstract

The zeolitic imidazolate framework (ZIF) glass is used as artificial solid electrolyte interface layer. Simulations reveal that the ZIF glass features faster and more uniform lithium-ion conduction compared to the ZIF crystal. The symmetric battery tests show that the ZIF glass layer exhibits low ion migration energy barrier, enabling stable lithium deposition/stripping. The ZIF glass based full batteries have high capacity, excellent rate performance, and long cycling stability.

