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Plant Technology for the Industrial Coating Process for Sulfide-Based All-Solid-State Batteries

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Abstract

Sulfide-based all-solid-state batteries could enable applications with higher demands for safety and energy density. To support their market entry, the upscaling of current laboratory fabrication to industrial high-throughput production is necessary. This paper introduces a concept for an industrial coating process facing the sulfides' main challenge – their reactivity with water in ambient air and the emerging toxic H_2S. To produce cells cost-effectively and safely, different housings and atmospheres for the plant technology are evaluated. Adequate sensors, which measure the critical H_2S content with regard to occupational safety during production, are addressed.

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