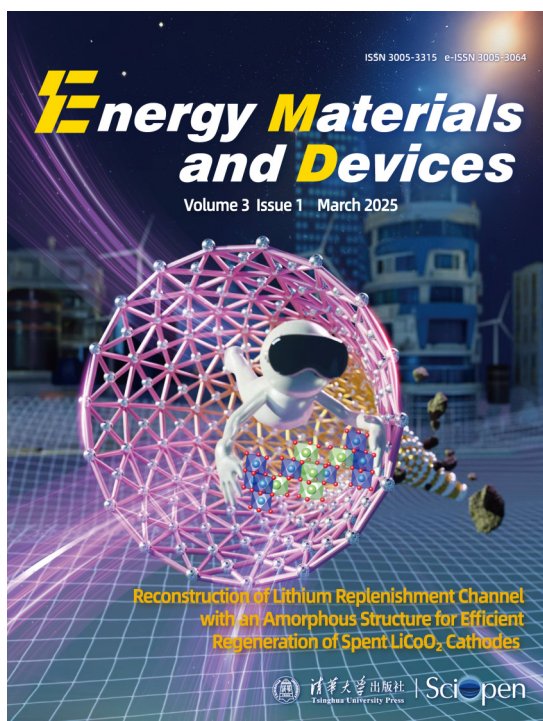




Front Cover Story

Ball milling was employed to disrupt the inherent structure of highly-degraded LiCoO_2 (LCO) and convert the surface spinel phase into a homogeneous amorphous structure to promote lithium replenishment and direct regeneration. The proposed treatment method is effective for highly-degraded LCO and outperforms pyrometallurgical and hydrometallurgical recycling methods, thus, it paves the way for the advancement of spent battery cathode material recycling. (see the article by Cao Y. et al. <https://doi.org/10.26599/EMD.2025.9370059>)

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**Back Cover Story**

This review aims to provide comprehensive insights into the self-healing mechanism in batteries and highlight strategies to overcome critical challenges, ultimately aiding in optimizing their performance, durability, and efficiency. (see the article by Quan Z. et al. <https://doi.org/10.26599/EMD.2025.9370058>)