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Regulating electrode/electrolyte interfacial chemistry enables 4.6 V ultra-stable fast charging of commercial LiCoO_2

High-voltage LiCoO_2 -based lithium-ion batteries have always been the primary power source for 3C portable electronics due to their high energy density. The difficulty of achieving fast-charging high-voltage LiCoO_2 arises from severely unstable electrode–electrolyte interfaces with sluggish kinetics. Our “cocktail electrolyte” based on the synergistic cooperation of multi-component additives enables commercial LiCoO_2 to achieve ultra-high stability both at fast-charging rate and under extreme temperature conditions, and demonstrates practical and general applicability.

As featured in:



See Yan Yu, Xinliang Feng, Zhong-Shuai Wu *et al.*, *Energy Environ. Sci.*, 2024, **17**, 3021.