

Supplementary Materials

Sulfur dioxide and sulfolane as additives in organic electrolytes to develop room-temperature sodium batteries

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Evolution of cyclic voltammetry for each SO₂ concentration and each electrolyte.

From Figure S1 to S3, the evolution of the cyclic voltammograms for each SO₂ concentration and each electrolyte is shown. In particular, ten successive cycles are displayed in both the presence and absence of SO₂ additive. All experiments were carried out in a three-electrode electrochemical cell using three sodium rods as electrodes. The geometrical area in contact with the electrolyte was approximately 1 cm² for each sodium electrode.

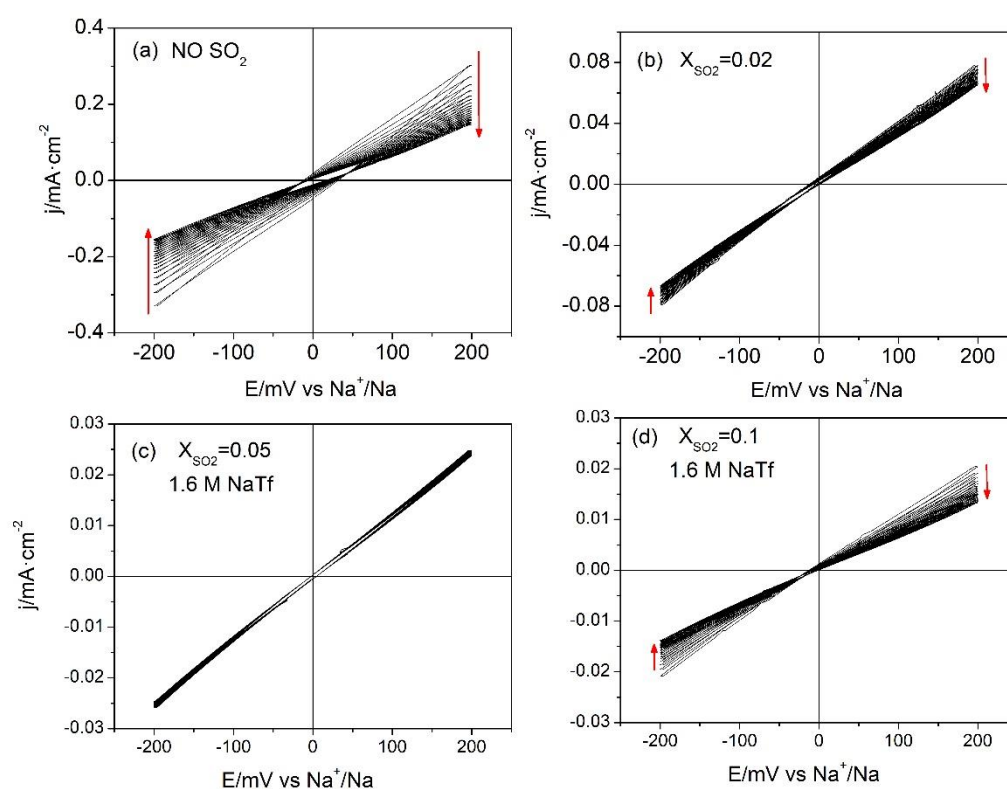


Figure S1. CVs for Na-on-Na deposition/stripping in: (a), (b) 2M NaTf /DOL:DME without and with 0.02 SO_2 mole fraction. (c), (d) 1.6 M NaTf /DOL:DME with 0.05 and 0.1 SO_2 mole fraction.

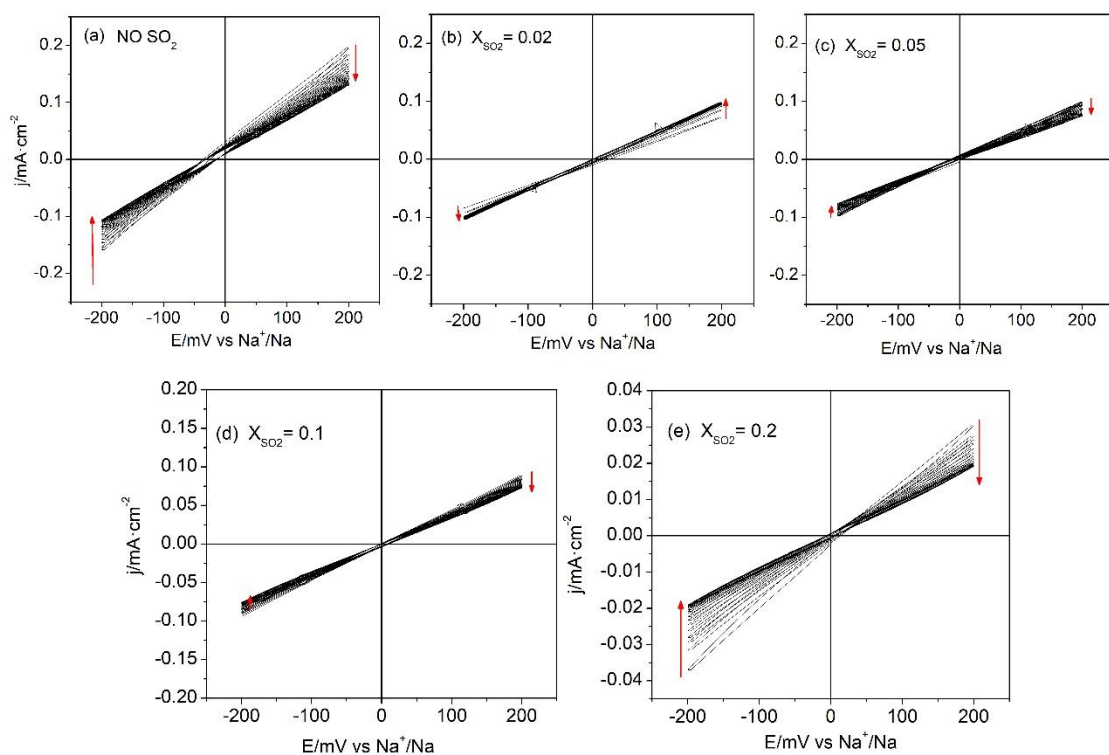


Figure S2. Figure S2. CVs for Na-on-Na deposition in 2 M NaSCN/DOL:DME containing SO_2 mole fractions of (a) 0, (b) 0.02, (c) 0.05, (d) 0.10 and (e) 0.20

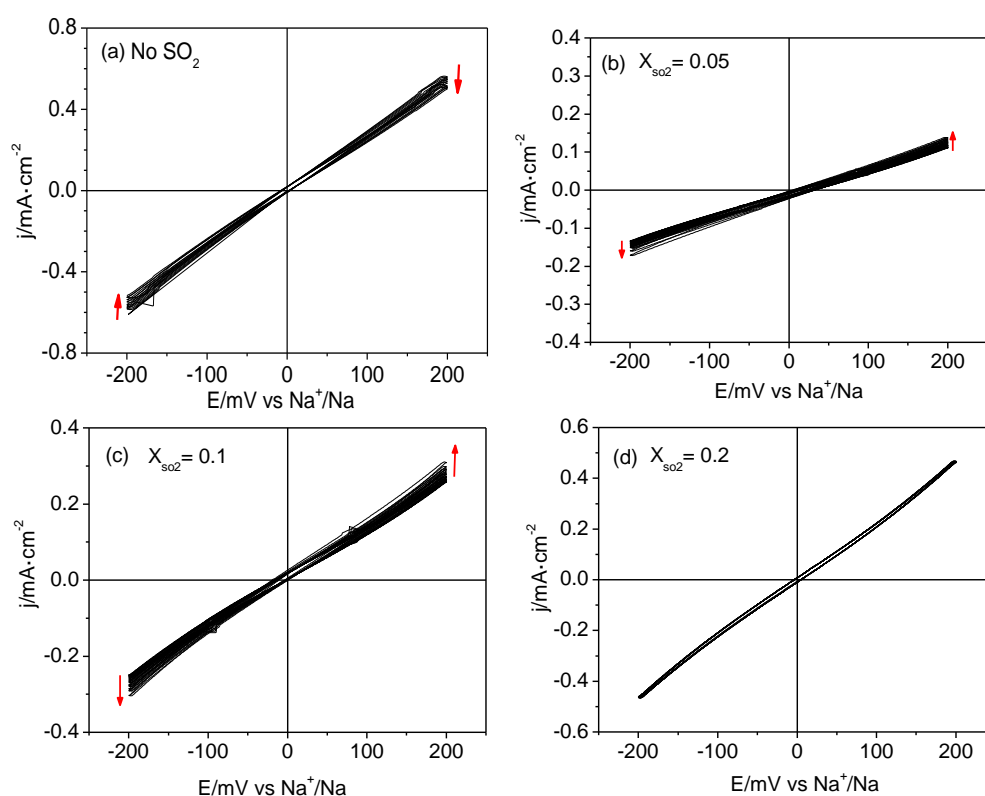


Figure S3. Cyclic voltammograms for Na-on-Na deposition/stripping in 1M NaClO₄/PC containing SO₂ mole fractions of (a) 0, (b) 0.05, (c) 0.10 and (d) 0.20.