

An investigation into electrolytes and cathodes for room-temperature sodium-sulfur batteries

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ADDITIONAL EXPERIMENTAL DATA

Galvanostatic discharge-charge cycling at different C-rates

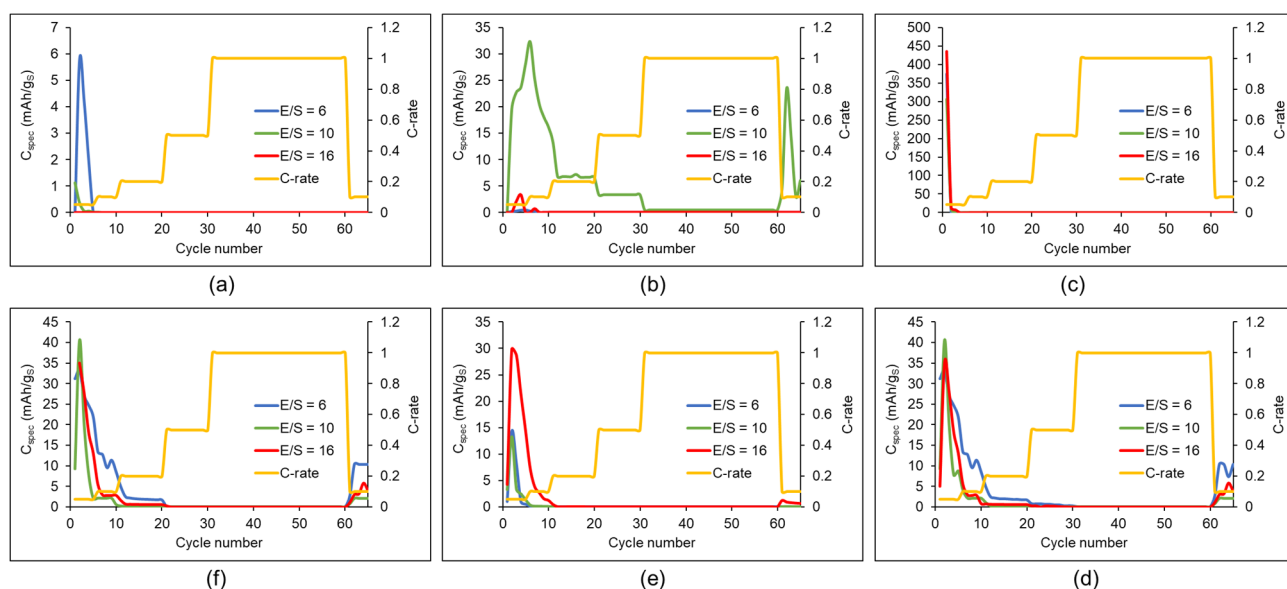


Figure S1. Specific capacity at discharge versus cycle number in the galvanostatic discharge-charge tests at different C-rates of Na-S cells with cathode of 44 wt% sulfur with host AC MSC 30, for all six electrolytes and different E/S ratios (in ml/mgs): (a) 1M NaTFSI in DOL/DME; (b) 1M NaTFSI in TEGDME; (c) 1M NaFSI in DOL/DME; (d) 1M NaFSI in TEGDME; (e) 1M NaCF₃SO₃ in DOL/DME; (f) 1M NaCF₃SO₃ in TEGDME.

Na-S cells with cathode of 44 wt% sulfur with host AC MSC 30 and different electrolytes at different E/S ratios:

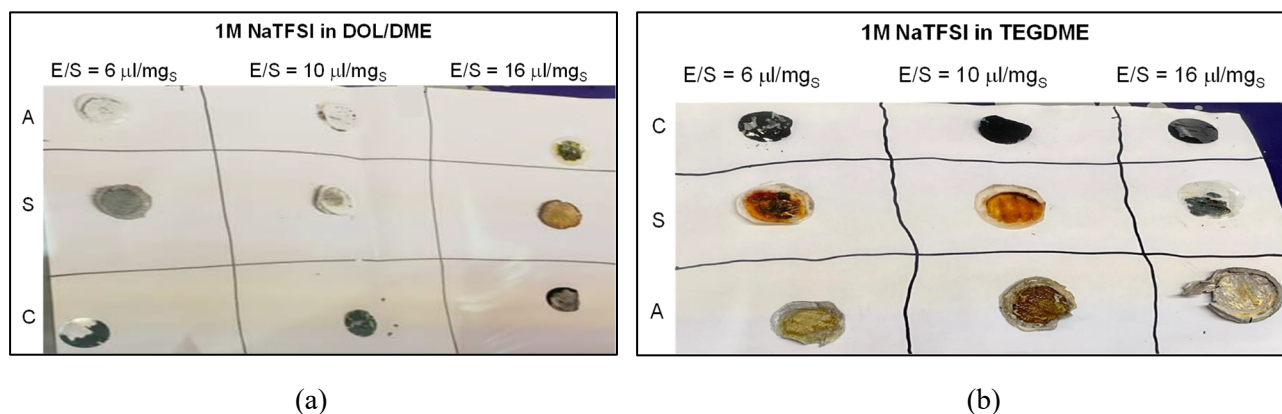


Figure S2. Photos of Na-S cell components, postmortem after cycling (65 cycles) and electrochemical testing: A = anode, S = separator (surface facing cathode), C = cathode. (a) Na-S cell with electrolyte 1 M NaTFSI in DOL/DME at three E/S ratios; (b) Na-S cell with electrolyte 1 M NaTFSI in TEGDME at three E/S ratios.

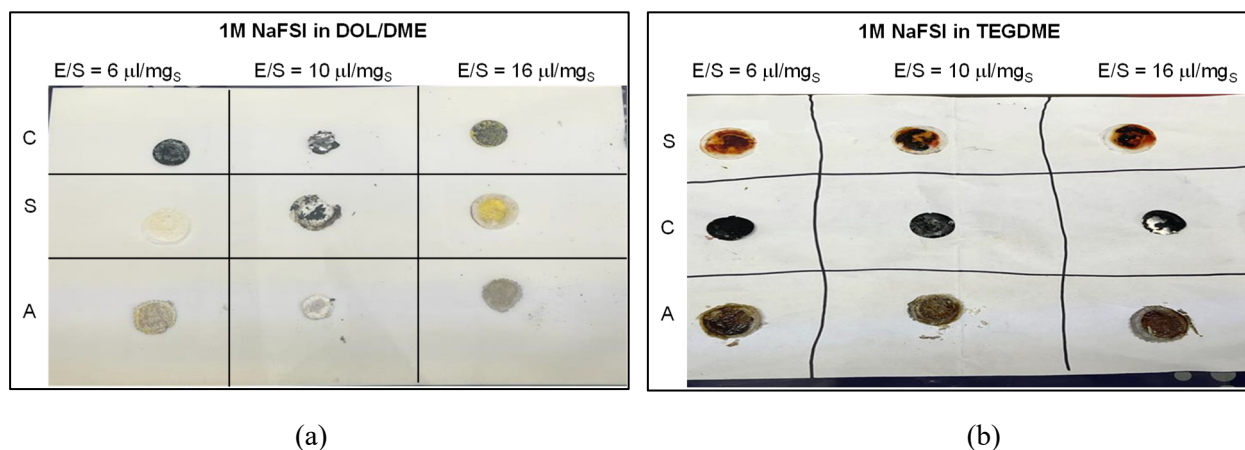


Figure S3. Photos of Na-S cell components, postmortem after cycling (65 cycles) and electrochemical testing: A = anode, S = separator (surface facing cathode), C = cathode. (a) Na-S cell with electrolyte 1 M NaFSI in DOL/DME at three E/S ratios; (b) Na-S cell with electrolyte 1 M NaFSI in TEGDME at three E/S ratios.

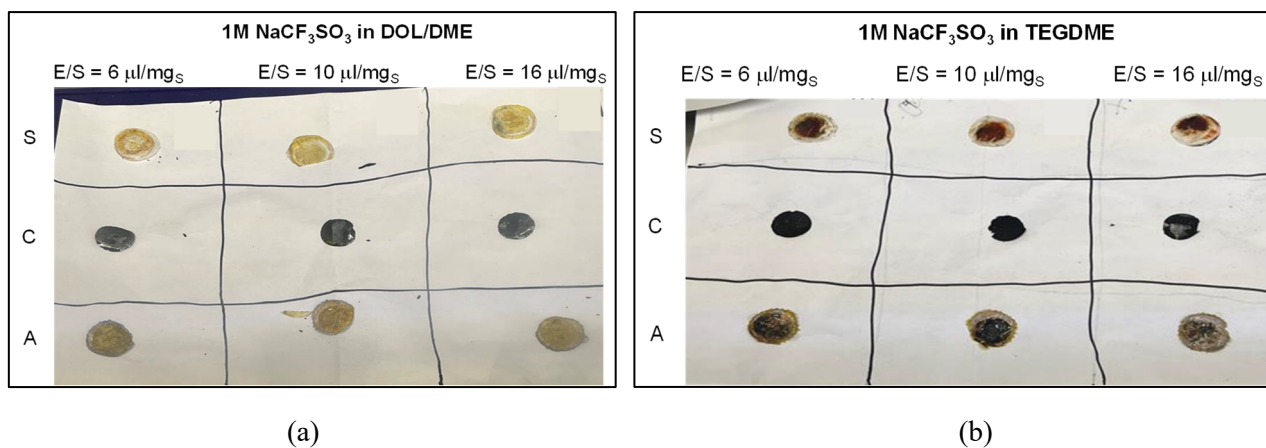


Figure S4. Photos of Na-S cell components, postmortem after cycling (65 cycles) and electrochemical testing: A = anode, S = separator (surface facing cathode), C = cathode. (a) Na-S cell with electrolyte 1 M NaCF₃SO₃ in DOL/DME at three E/S ratios; (b) Na-S cell with electrolyte 1 M NaCF₃SO₃ in TEGDME at three E/S ratios.