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Novel Quinone-Based Couples for Flow Batteries BRIAN HUSKINSON, Harvard School of Engineering and Applied Sciences, SARAF NAWAR, Harvard College, MICHAEL AZIZ, Harvard School of Engineering and Applied Sciences — Flow batteries are of interest for low-cost grid-scale electrical energy storage in the face of rising electricity production from intermittent renewables like wind and solar. We will report on investigations of redox couples based on the reversible protonation of small organic molecules called quinones. We will report half-cell measurements of current density vs. potential for aqueous solutions of various quinones and hydroquinones in sulfuric acid, facilitated by a variety of electrocatalysts. For a subset of these we will report full fuel cell measurements as well.

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