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High Surface Area Lithium Electrodes EMILY LAUGHLIN, KEVIN LAUGHLIN, RITA FAN, STERLING BAIRD, ROBERT DAVIS, JOHN HARB, RICHARD VANFLEET, Brigham Young University — Modern advancements in technological fields including electric vehicles and high powered laptops rely on battery storage. Lithium is useful in creating high capacity batteries because it has high energy density. However, when cycling a battery at a fast rate, the lithium becomes unstable due to the small amount of accessible energy on the surface of the lithium electrode. The solution to this problem is to increase the surface area of the lithium electrode through electrodeposition techniques onto a carbon scaffolding. This increases the current density limit. Electrodeposition is beneficial because the user can control how much lithium is deposited onto the substrate. This enables researchers to cycle high capacity batteries at an accelerated rate.

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