

Effect of pressure control on the electrochemical characteristics of Lithium metal batteries

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Lithium electrode has a theoretical capacity of 3862 mAh g^{-1} and the lowest observed redox potential of -3.04 V (vs. SHE), so it has been attractive so it has been attractive electrode material for the high-energy-density lithium secondary batteries. However, successful commercialization of lithium secondary batteries has only been achieved with Li-insertion-based carbon electrode. Due to the safety problem caused by the non-uniform deposition of lithium metal, inducing dendrite formation on the surface of Li electrode and high reactivity, lithium metal anode still do not be used as commercial anode material until now.

To solve these problems, various researches to improve the performance of lithium metal batteries. Among them, controlling deposition of behavior of lithium metal is one of the important point of views to check because uniform deposition of lithium metal enables high reversibility, low reactivity, and dimensional stability of unit cell.

In this report, we investigate the case study of the effect of stack pressure on the deposition behavior of lithium metal and cell performance.