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Consideration on the structure of Mo-based anode materials for improving lithium storage performance

Abstract： Mo-based compounds have drawn increasing interest because of their high theoretical specific capacity and cyclic stability. Our research group had synthesized several kinds of Mo-based compounds, such as H_xMoO_3, $MoO_{2.5}(OH)_{0.5}$, MoO_{3-x} in recent years, and explored their electrochemical properties. In the process, we noticed that the structure of Mo-based compounds is wide in tunability. There is no doubt that this offers us a lot of opportunities, for example, heteroatom doping and hybridization with carbon-based compounds, in the hope of changing the defects of the electrode material itself, such as their poor electrical conductivity and pulverization during charge-discharge, so as to improve the battery performance.

References

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[2] Y. Song, H. Wang, Z. Li, N. Ye, L. Wang, Y. Liu, Int. J. Hydrogen Energy, 9 (2015), 3613-3623.
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Figures

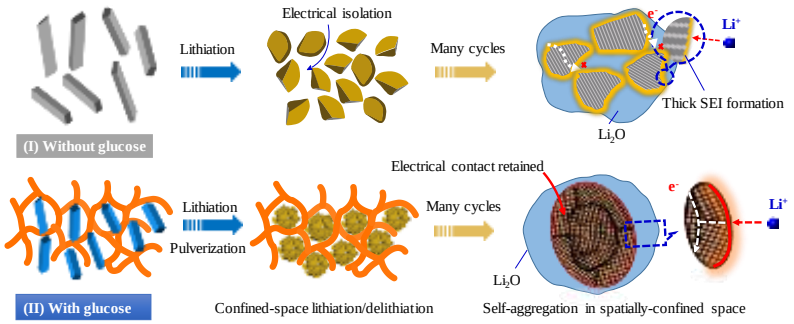

Figure 1: Spatially-confined electrochemical reactions of MoO_3 nanobelts were designed rationally for reversible high capacity by a green and simple vacuum drying method.