

Versatile 3D oxoanion framework for Li-ion intercalation

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A highly versatile novel oxanion framework for Li-ion intercalation chemistry has been developed. Unlike the majority of Li-ion systems, this framework permits fully three-dimensional diffusion of Li ions. The framework allows the incorporation of a variety of *3d* transition metals, and provides a very strong inductive effect. This framework is demonstrated to function as an effective cathode for rechargeable Li-ion batteries. The mechanism of Li-ion intercalation has been studied by a variety of *in situ* and *ex situ* techniques, as well as by density functional theory. This framework is shown to have good thermal stability for a variety of cation choices.