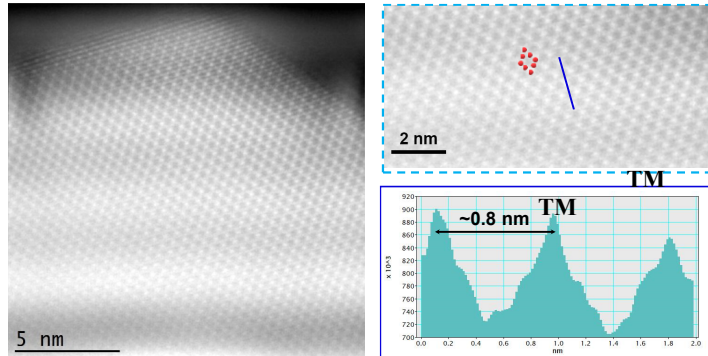
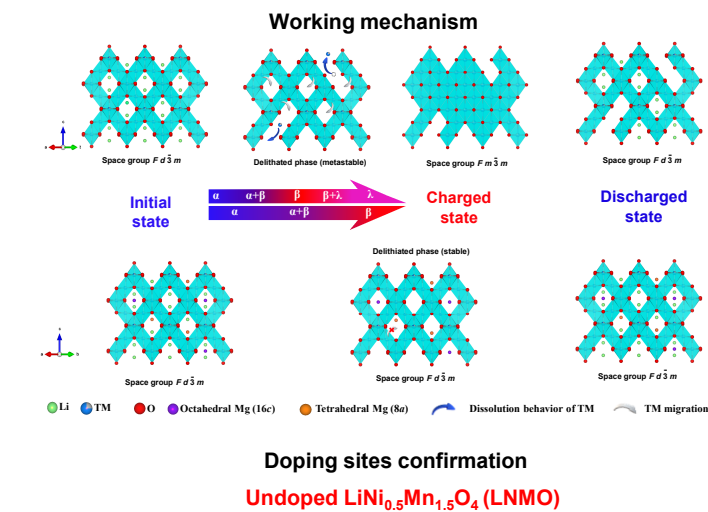
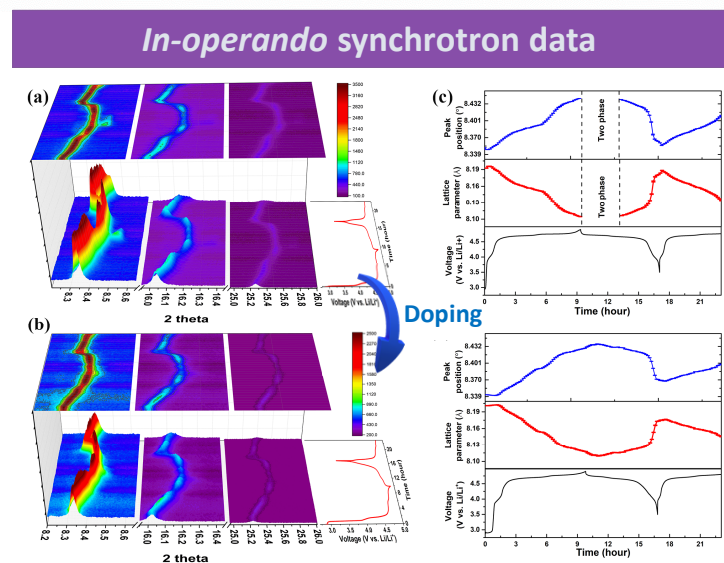
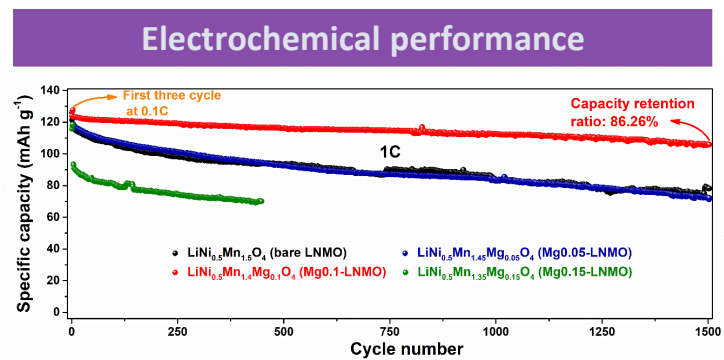
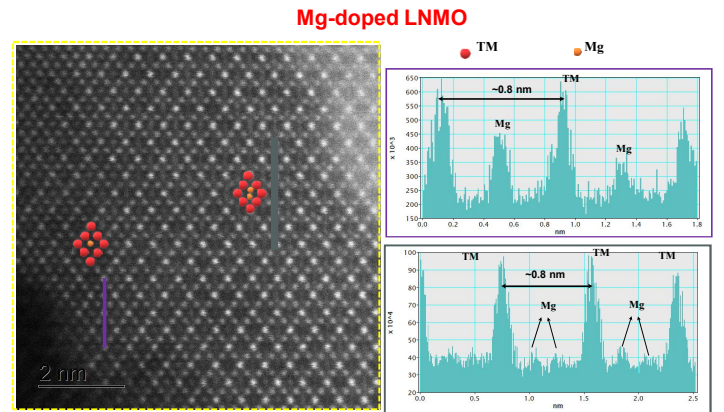
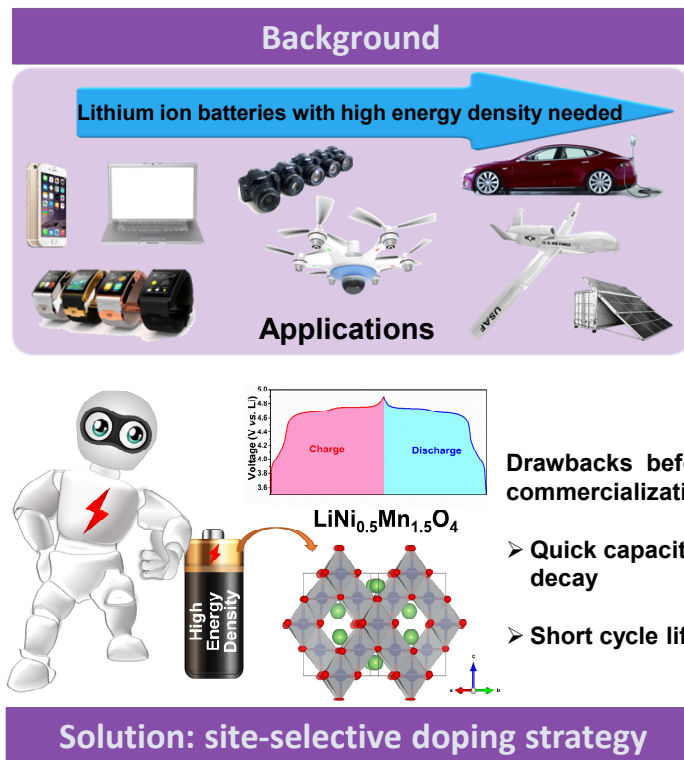


A high-performance and long-cycle-life spinel lithium-ion battery cathode achieved by site-selective doping

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Conclusion

We successfully employ site-selective Mg doping to stabilize LNMO during electrochemical processes. During cycling, Mg in the doped LNMO resides at both 8a and 16c crystallographic sites in the *Fd3m* structure, mitigating against the dissolution of transition metals, preventing the formation of the undesirable *Fd3m* rock-salt phase and subsequent two phase reaction, which in turn reduces the Jahn–Teller distortion and voltage polarization. This work provides a new strategy for the chemical modification of electrode materials that may be applied more generally in battery researches, whereby dopants may be used strategically to address specific electrode issues.

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