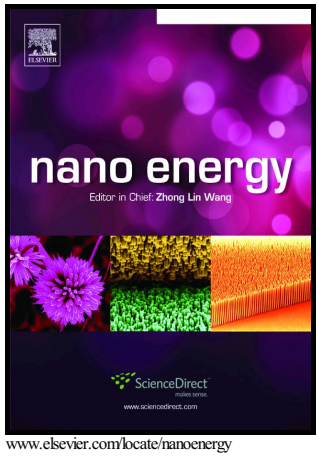

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Abstract

Lithium-manganese-rich transition metal oxides have attracted substantial R&D attention due to their potential for high energy-density lithium-ion batteries. In this work, in situ high-energy X-ray diffraction was deployed to investigate the phase evolution during the solid-state synthesis of $Li[Li_{0.2}Mn_{0.54}Ni_{0.13}Co_{0.13}]O_2$. A step-wise consumption of the starting materials was observed during the one-step heating process primarily due to the