Electronic Supplementary Material (ESI) for Materials Advances.

Supplementary Information-
Synthesis, Structure and Electrochemical Properties of a New Cation Ordered Layered Li-Ni-Mg-Mo Oxide

Bo Dong*[1,2], Javier Castells-Gil[1,2], Pengcheng Zhu[2,3], Laura L. Driscoll[1,2], Emma Kendrick[2,3], Phoebe K. Allan[1,2], Peter R. Slater*[1,2]

1. School of Chemistry, University of Birmingham, Birmingham B15 2TT, U.K.

2. The Faraday Institution, Harwell Science and Innovation Campus, Didcot OX11 0RA, U.K.

3. School of Metallurgy and Materials, University of Birmingham, Birmingham B15 2TT, U.K.

* b.dong@bham.ac.uk; p.r.slater@bham.ac.uk

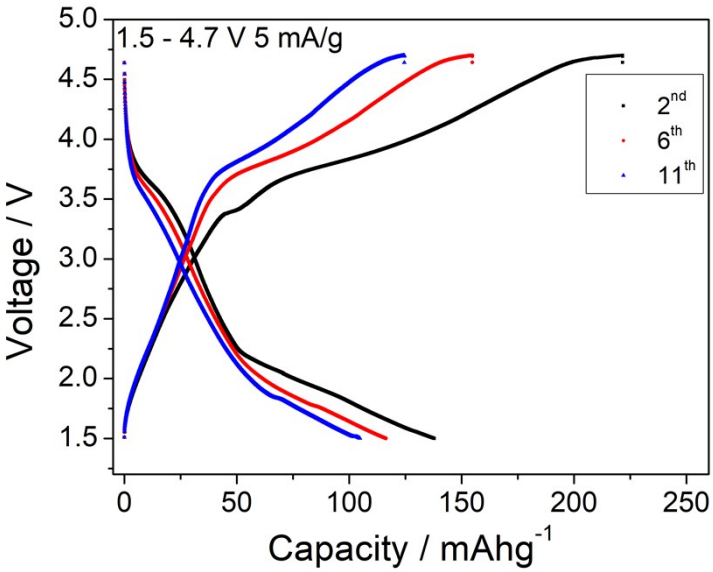

Figure S1 Charge/discharge curves of $Li_{1.2}Ni_{0.4}Ti_{0.4}O_2$ between at 5 mAg^{-1} at 40 ^oC.

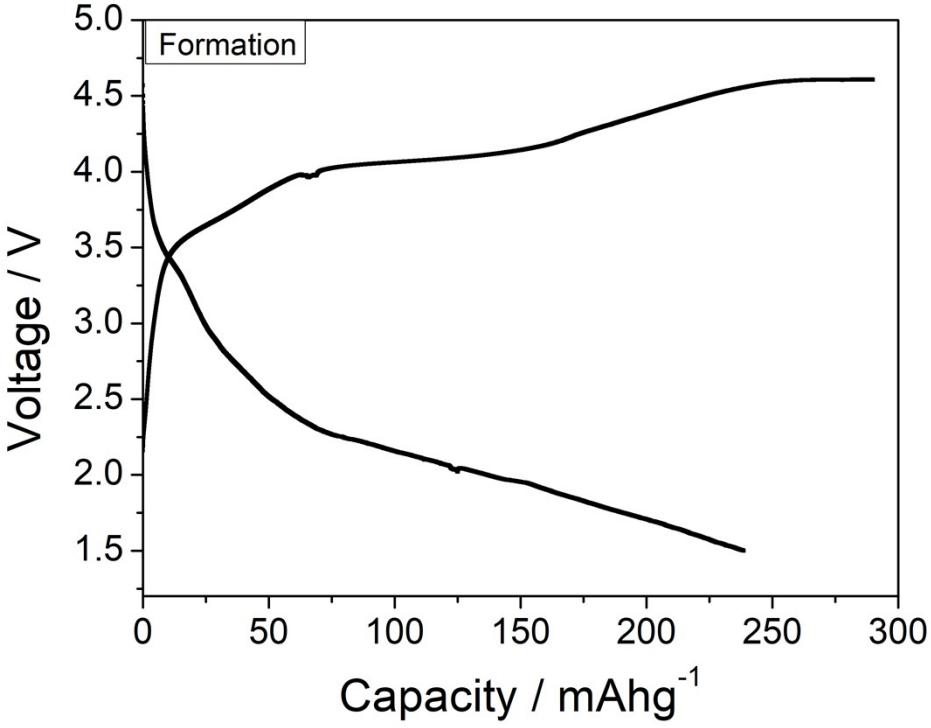

Figure S2. The initial 1st formation cycle of $Li_{1.2}Ni_{0.4}Mo_{0.2}Mg_{0.2}O_2$ at 5 mA/g at 40 ^{o}C.

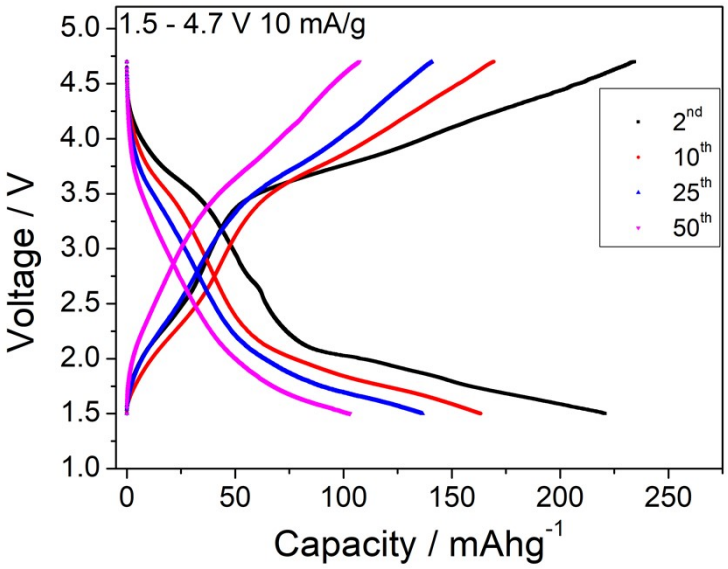

Figure S3. Charge/discharge curves of $Li_{1.1}Ni_{0.6}Mo_{0.15}Mg_{0.15}O_2$ between 1.5 and 4.7 V at 10 mAg^{-1} at room temperature.

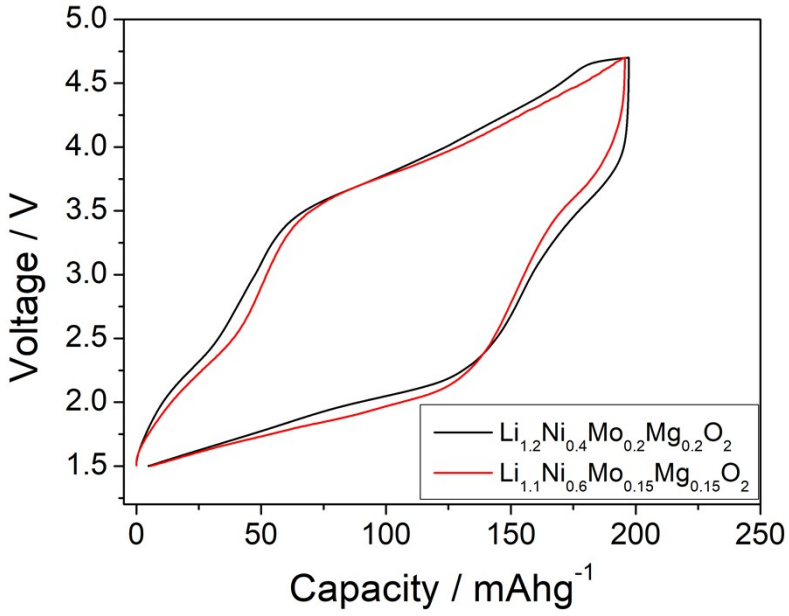

Figure S4. Charge/discharge curves of $Li_{1.2}Ni_{0.4}Mo_{0.2}Mg_{0.2}O_2$ A {5 mAg^{-1} (≈C/40) at 40 °C} and $Li_{1.1}Ni_{0.6}Mo_{0.15}Mg_{0.15}O_2$ {10 mAg-1 (≈C/25) at room temperature} between 1.5 and 4.7 V.