

## Supporting Information

### Carbonate coprecipitation preparation of Li-rich layered oxides using oxalate anion ligand as high-energy, high-power and durable cathode materials for lithium-ion batteries

*Long Xu,<sup>a</sup> Peiyu Hou,<sup>a</sup> Yantao Zhang,<sup>a</sup> Hongzhou Zhang,<sup>a</sup> Dawei Song,<sup>\*a</sup> Xixi Shi,<sup>a</sup> Xiaoqing Wang<sup>b</sup> and Lianqi Zhang<sup>\*a</sup>*

<sup>a</sup>Tianjin Key Laboratory for Photoelectric Materials and Devices, School of Materials Science and Engineering, Tianjin University of Technology, Tianjin 300384, China

E-mail: [songdw2005@mail.nankai.edu.cn](mailto:songdw2005@mail.nankai.edu.cn) (D.W. Song); [tianjinzhanglq@163.com](mailto:tianjinzhanglq@163.com) (L.Q. Zhang)

<sup>b</sup>School of Environment and Chemical Engineering, Tianjin Polytechnic University, Tianjin 300387, China.

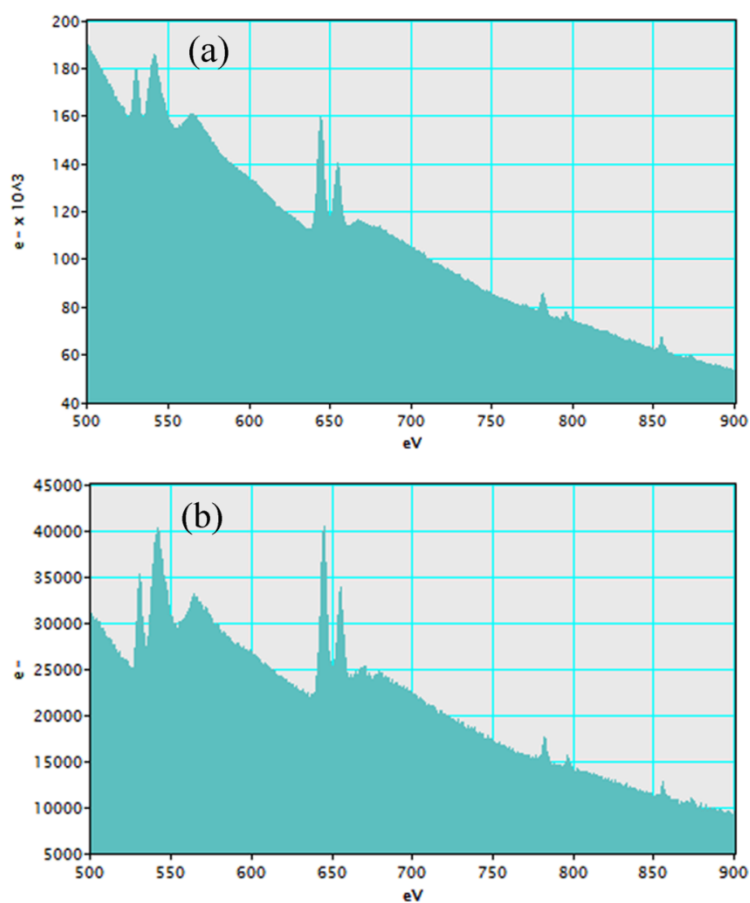


Fig. S1 EELS spectra of the core edges of O *K*, Mn *L*, Co *L* and Ni *L* of O-Li-rich oxides (a) and

A-Li-rich oxides (b).

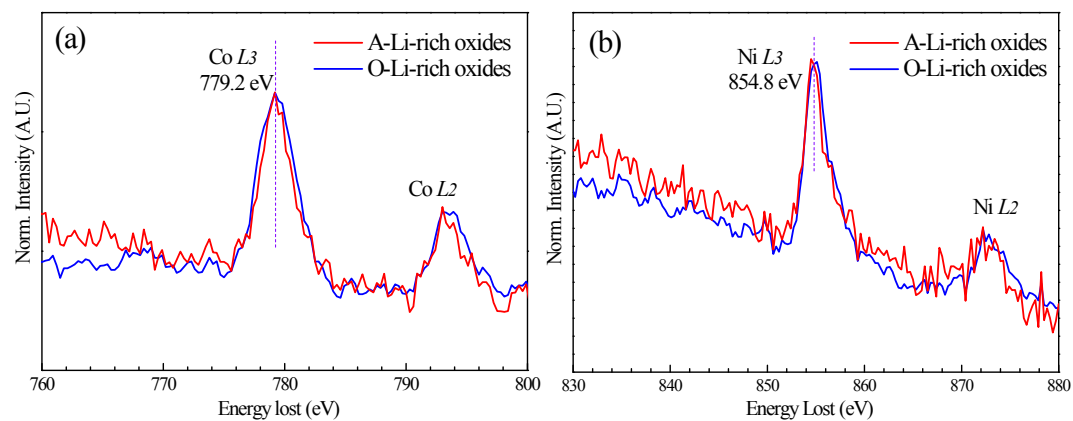


Fig. S2 Co *L* edge comparison normalized to Co *L*<sub>3</sub> peak (a) and Ni *L* edge comparison normalized to Ni *L*<sub>3</sub> peak (b) of as-prepared Li-rich materials.