

Insight in the Atomic Structure of Cycled Lithium-rich Layered Oxide $\text{Li}_{1.20}\text{Mn}_{0.54}\text{Co}_{0.13}\text{Ni}_{0.13}\text{O}_2$ using HAADF STEM and Electron Nano Diffraction

Cécile Genevois ^{1,§}, Hideyuki Koga ^{2,3}, Laurence Croguennec ^{2,*}, Michel Ménétrier ²,
Claude Delmas ² and François Weill ^{2,*}

¹ *Groupe de Physique des Matériaux, Université et INSA de Rouen, UMR6634 CNRS, avenue de l'Université, BP12, F-76801 Saint Etienne du Rouvray, France*

² *CNRS, Univ. Bordeaux, ICMCB UPR9048 and IPB-ENSCBP, F-33600 Pessac, France*

³ *TOYOTA MOTOR EUROPE NV/SA - Hoge Wei 33, B-1930 Zaventem, Belgium*

Supplementary information

Table S1: Description of the cationic distribution in the transition metal layers, by analogy with Li_2MnO_3 , in the C2/m space group

C2/m	Li_2MnO_3 ($\text{Li}_{4/3}\text{Mn}_{2/3}\text{O}_2$) $[\text{Li}]_{\text{Interslab}}[\text{Li}_{1/3}\text{Mn}_{2/3}]_{\text{Slab}}$		$\text{Li}_{1.20}\text{Ni}_{0.13}\text{Mn}_{0.54}\text{Co}_{0.13}\text{O}_2$ $[\text{Li}]_{\text{Interslab}}[\text{Li}_{0.20}\text{Ni}_{0.13}\text{Mn}_{0.54}\text{Co}_{0.13}]_{\text{Slab}}$	
Slab's crystallographic sites	2b (α site)	4g (β site)	2b (α site)	4g (β site)
Slab's composition	$\text{Li}_{1/3}$	$\text{Mn}_{2/3}$	$\text{Li}_{0.20}\text{Ni}_{0.13}$	$\text{Mn}_{0.54}\text{Co}_{0.13}$

