Supplemental Information for

Dynamic Behavior at the Interface between Lithium Cobalt Oxide and an Organic Electrolyte Monitored by Neutron Reflectivity Measurements

Taketoshi Minato,[†] Hiroyuki Kawaura,[†] Masaaki Hirayama,[§] Sou Taminato,[§] Kota Suzuki,[§] Norifumi L. Yamada,[¶] Hidetaka Sugaya,[†] Kentaro Yamamoto,[‡] Koji Nakanishi,[†] Yuki Orikasa,[‡] Hajime Tanida,[†] Ryoji Kanno,[§] Hajime Arai,[†] Yoshiharu Uchimoto[‡] and Zempachi Ogumi[†]

[†] Office of Society-Academia Collaboration for Innovation, Kyoto University, Gokasho, Uji, Kyoto 611-0011, Japan
[§] Department of Electronic Chemistry, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8502, Japan
[¶] High Energy Accelerator Research Organization (KEK), 2-4 Shirane Shirakata, Tokai-mura, Naka-gun, Ibaraki 319-1195, Japan
[‡] Graduate School of Human and Environmental Studies, Kyoto University, Sakyo-ku, Kyoto 606-8501, Japan

Table S1. Calculated values of scattering length density (SLD) of species formed by reactions of a $LiCoO_2$ surface and an electrolyte (1 M $LiClO_4$ in a vol. 1:2 solution of deuterated ethylene carbonate (EC):dimethyl carbonate (DMC)).

Species	Calculated SLD / nm^{-2}
$C_{30}D_{62}O_{16}$ (PEO)	7.51×10^{-5}
$C_{300}D_{602}O_{151}$ (PEO)	7.51×10^{-5}
$C_{3000}D_{6002}O_{1501}$ (PEO)	7.51×10^{-5}
Li_2CO_3	3.48×10^{-4}
LiOD	3.88×10^{-4}
LiCl	2.26×10^{-4}
$LiOCO_2CD_3$	4.74×10^{-4}
$(LiCO_2CD_2)_2$	4.45×10^{-4}