Electronic Supplementary Material (ESI) for ChemComm.

SUPPORTING INFORMATION

Direct Li^+ incorporation into anodic TiO_2 during its formation

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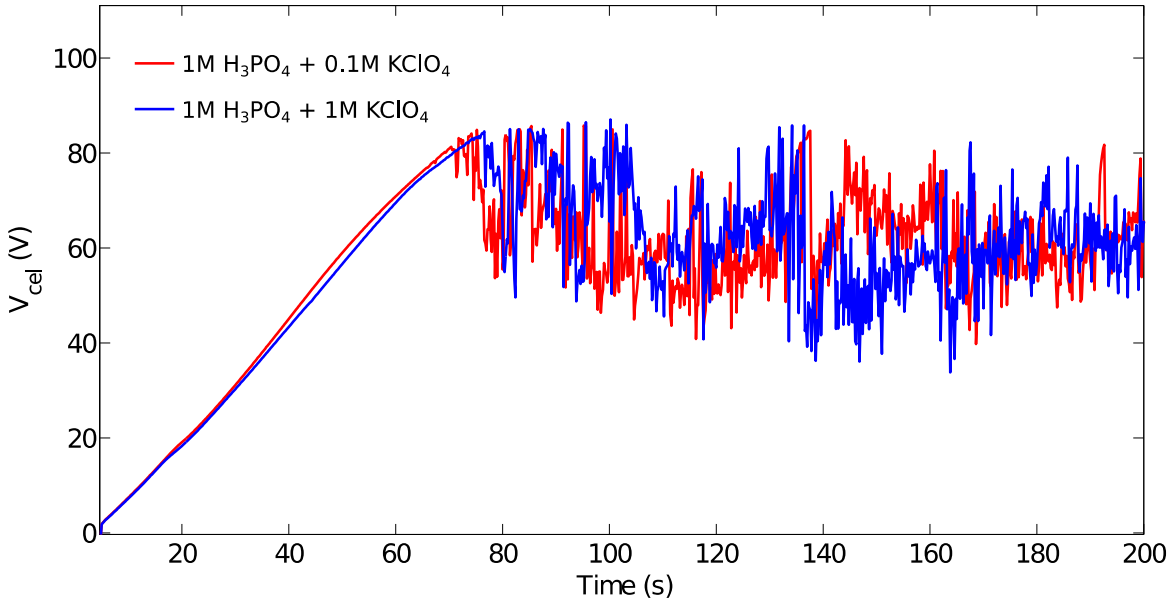

Figure S1. Transient cell voltage response (Vcel) for galvanostatic anodization with 6.3 mA cm^{-2} of Ti in 1 M H_3PO_4 with different $KClO_4$ concentrations.

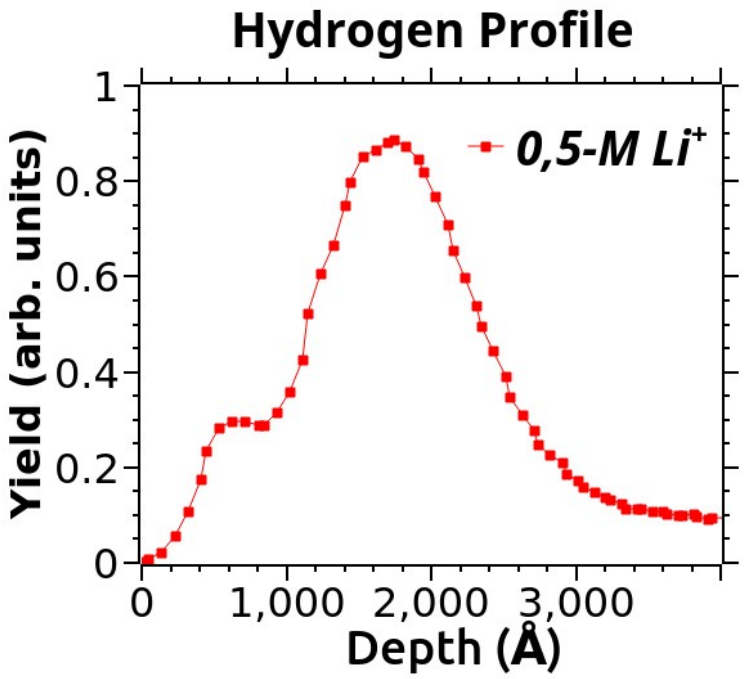

Figure S2. Hydrogen depth profile calculated from ERDA of anodic TiO_2 grown in 1M H_3PO_4 + 0.5 M $LiClO_4$. The surface layer (≈ 100 nm) with a lower H concentration corresponds to the anodic oxide. Fig. S3 of the RBS measurement demonstrates that the TiO_2 layer has about this thickness.

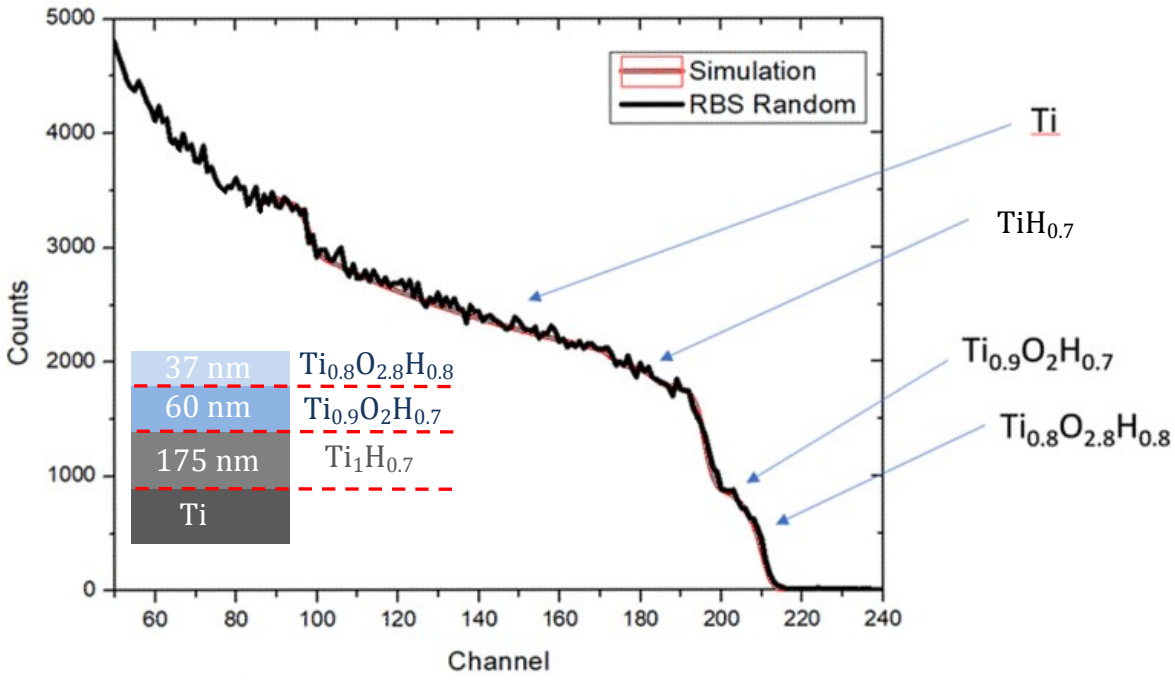

Figure S2. RBS spectrum carried out by using a 1.2 MeV He^{2+} ion beam. Along with the measured RBS spectrum, the red line presents a RBS simulation performed by the RUMP code [1]. The simulation was obtained using as input the model of sample shown in the Figure inset. The model proposed fits well the experimental RBS spectrum, which means that the thickness and the average composition of the anodized layer is 97 nm and $Ti_{0.86}O_{2.3}H_{0.72}$, respectively.

References for SI

1. L. R. Doolitle, A semiautomatic algorithm for Rutherford Backscattering analysis, Nucl. Instr. Meth. B 15 (1986) 227-231