Supplementary material:

Capillary-based micro battery cell for *in situ* XRPD studies of working batteries: a study of the initial intercalation and deintercalation of lithium into graphite

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Figure S1 shows the changes in the *d*-spacing of the '002_{2H}' diffraction peak of the graphitic electrode material during an initial galvanostatic (I = 4.205 µA) discharging of another comparable lithium-graphite micro-battery-cell. Figure S2 shows the XRPD patterns of the graphitic electrode material from the comparable lithium-graphite micro-battery-cell before (t= 0 min) and after (t= 145 min) the initial galvanostatic discharging.

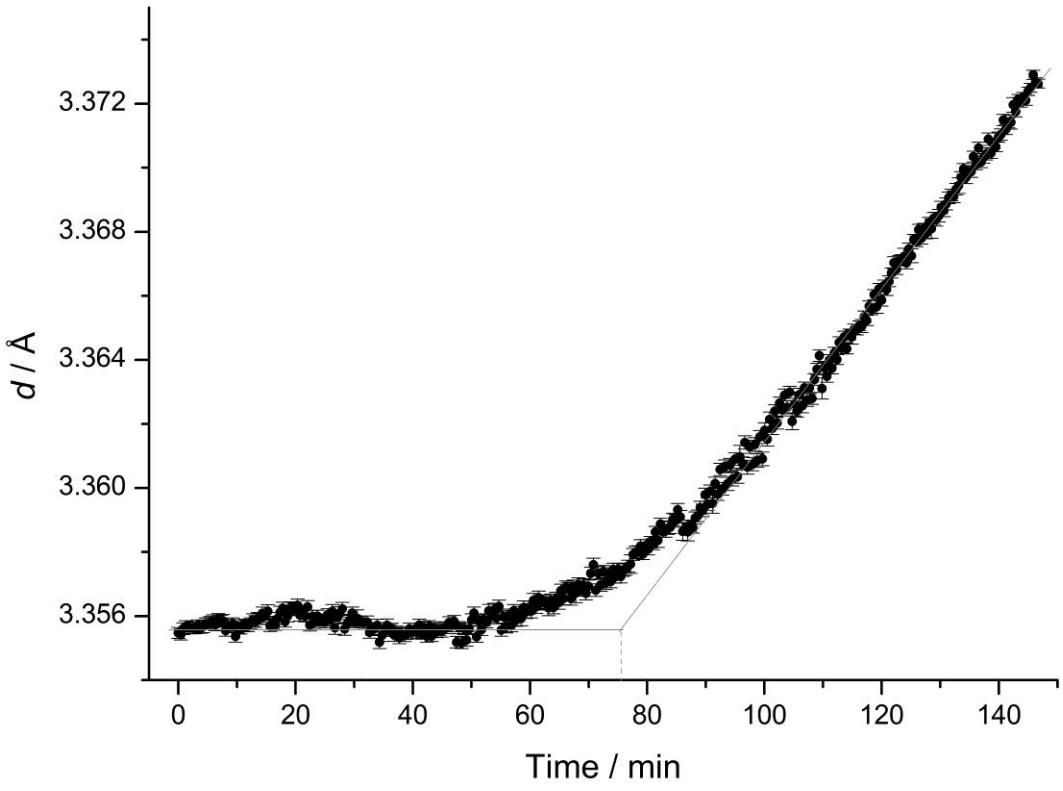

Figure S1. *d*-spacing of the '002_{2H}' diffraction peak as a function of discharging time.

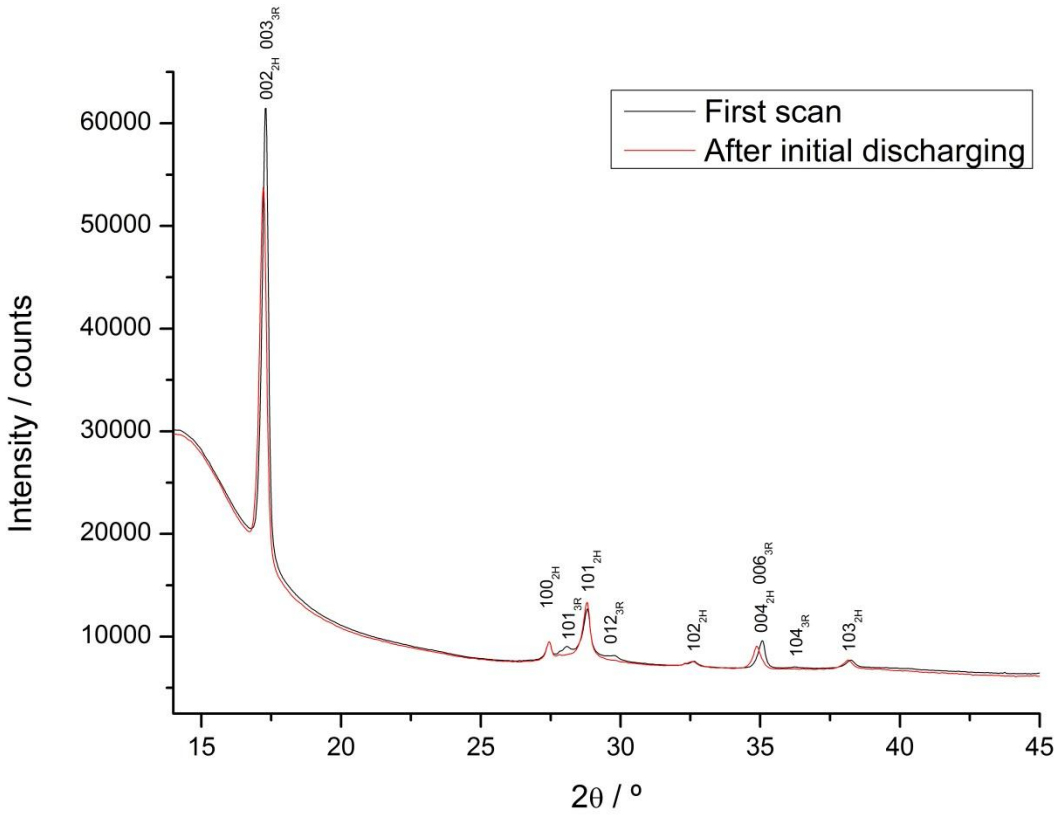

Figure S2. XRPD patterns of the graphite electrode in a lithium-graphite micro-battery cell.