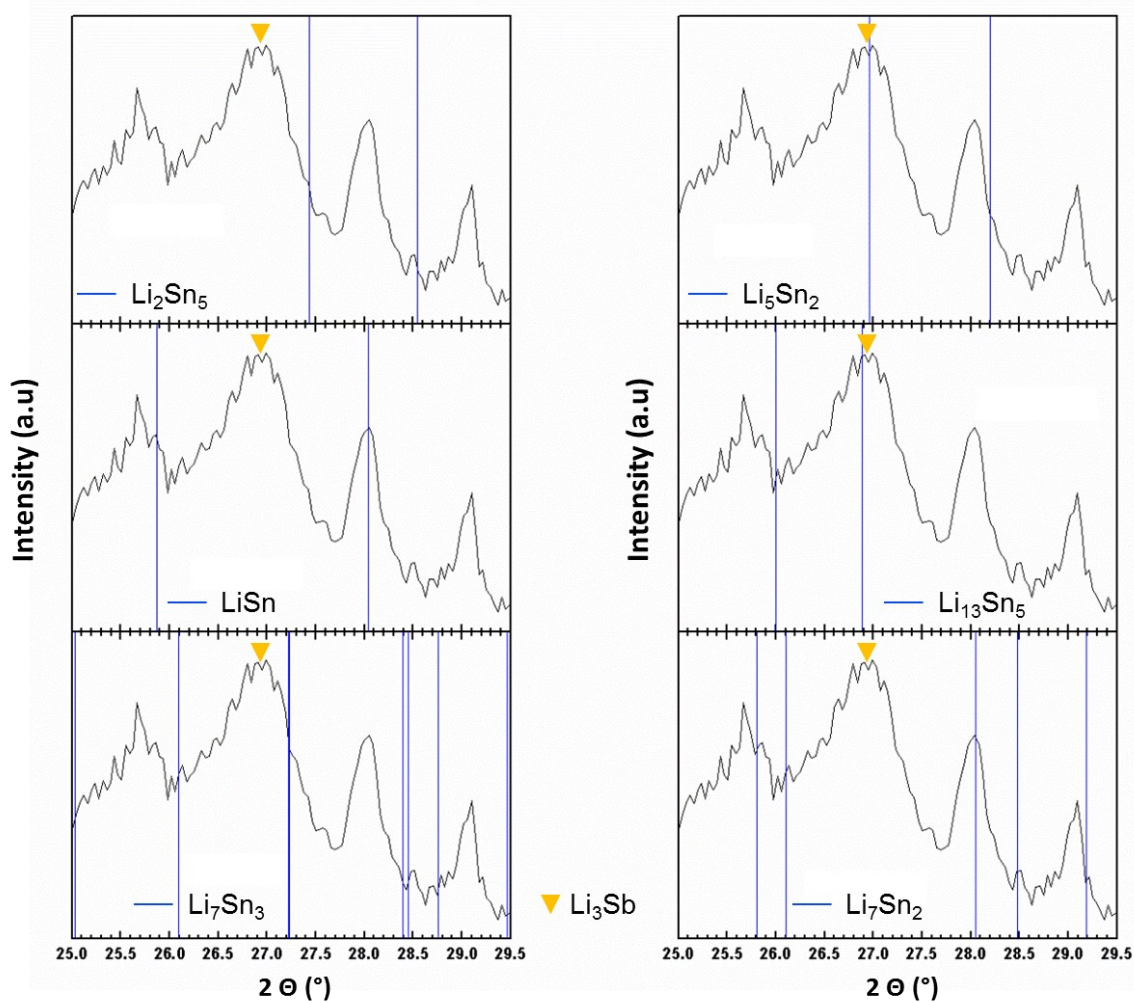
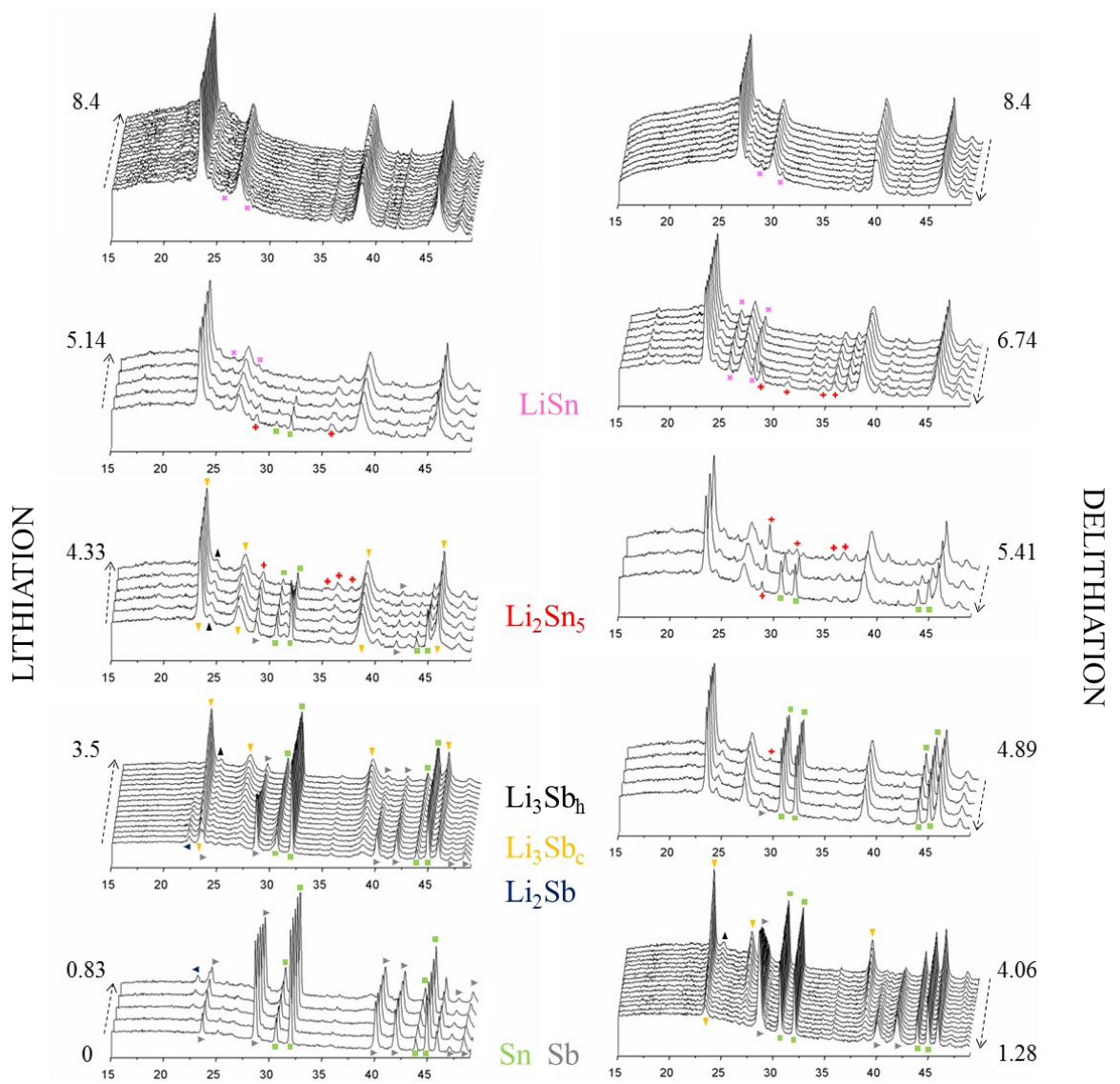


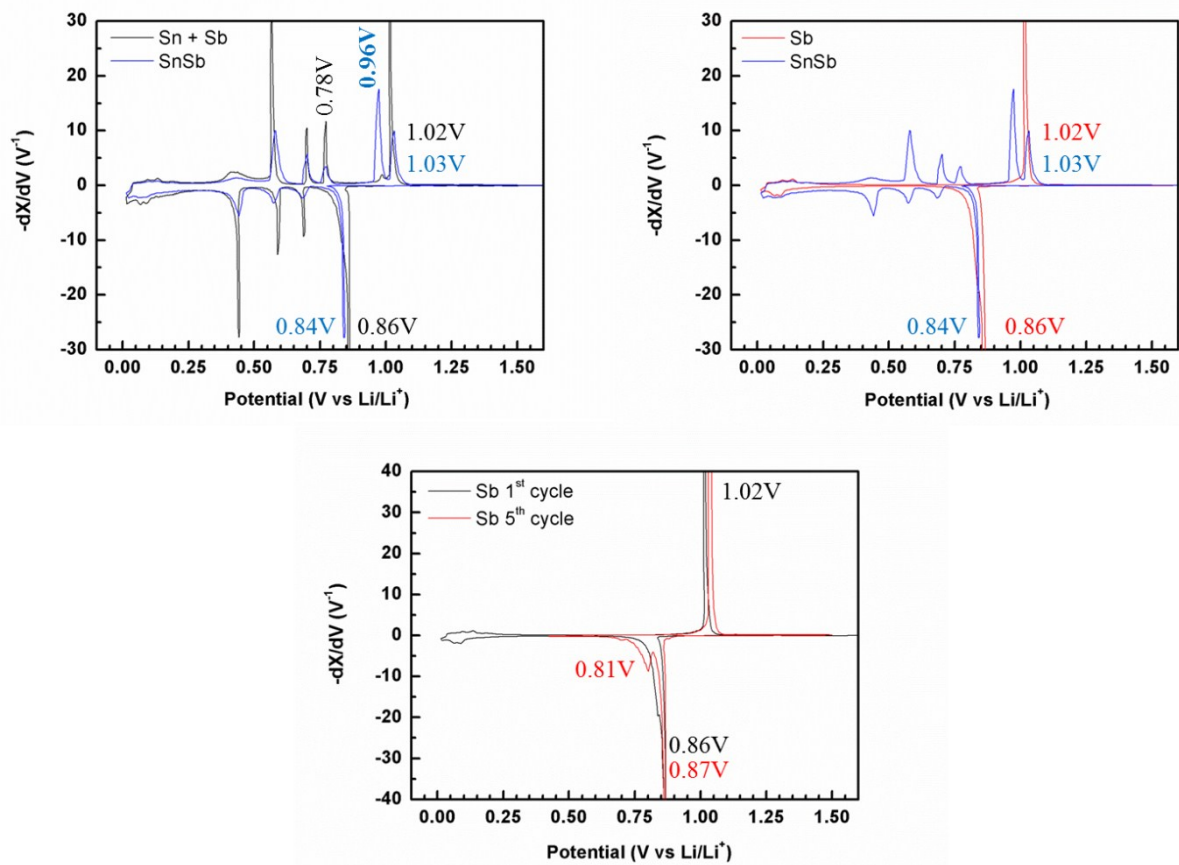
### Supplementary Information



**Figure S11:** comparison of the 25-29.5 $^\circ$  angular range in situ XRD of SnSb/Li at the end of discharge (from  $x=3.8$  to  $4.3$ ) with different  $\text{Li}_x\text{Sn}$  calculated XRD: the best agreement is obtained with  $\text{LiSn}$ .



**Figure S12:** Magnified regions of the *in situ* X-ray diffraction patterns of the (Sn+Sb)/Li cell.



**Figure S13** : a) Galvanostatic derivative curves for SnSb/Li, (Sn+Sb)/Li and Sb/cell.