Supporting Information

Hierarchically organized Li-Al-LDH nano-flakes: a low-temperature approach to seal porous anodic oxide on aluminum alloys

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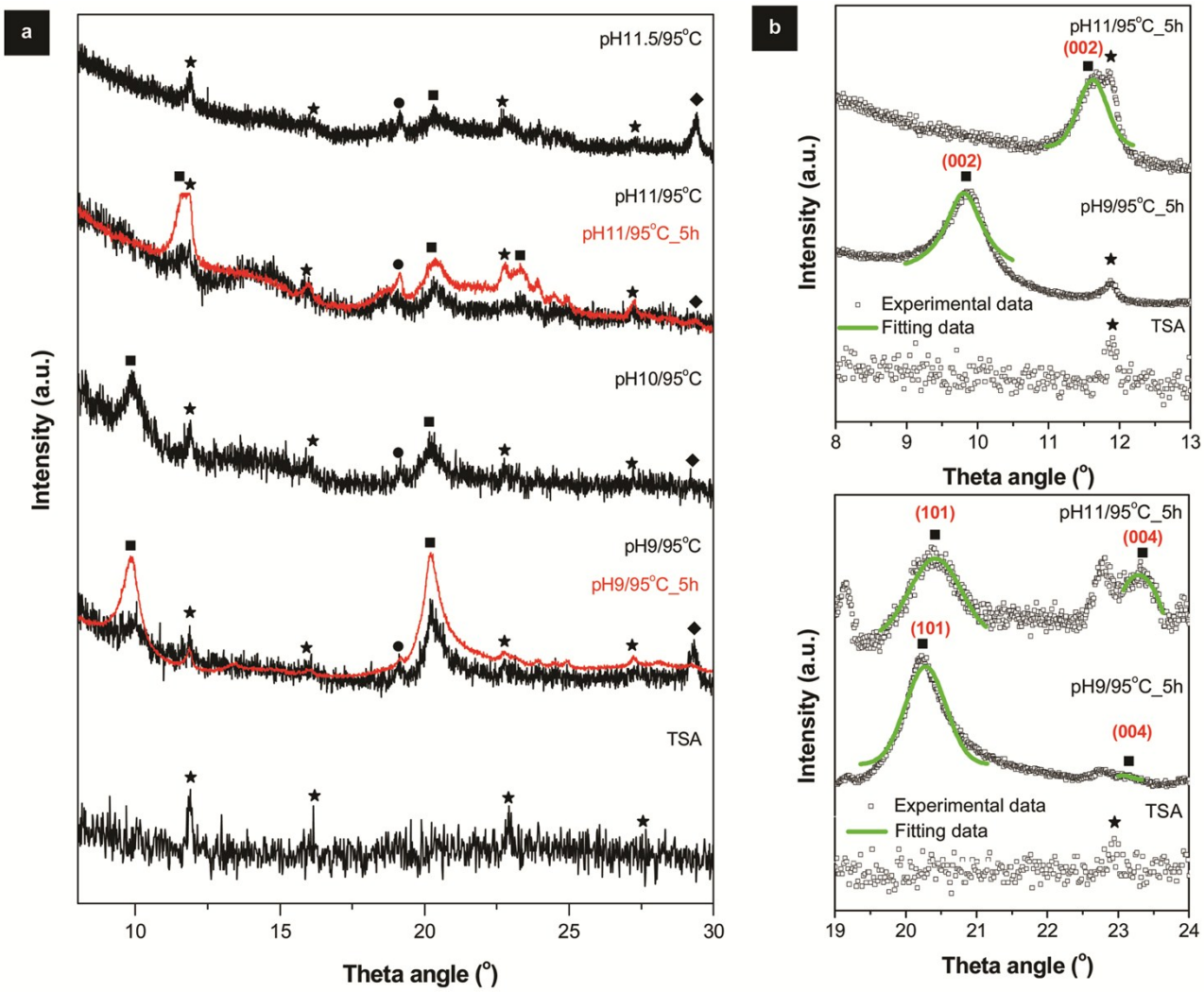

Figure S1 – (a) XRD spectra of the LDH layers and respective (b) fitting curves for layers grown at pH 9 and pH 11, respectively (■ LDH, ★ TSA, ● $Al(OH)_3$, ◆Li_2CO_3).

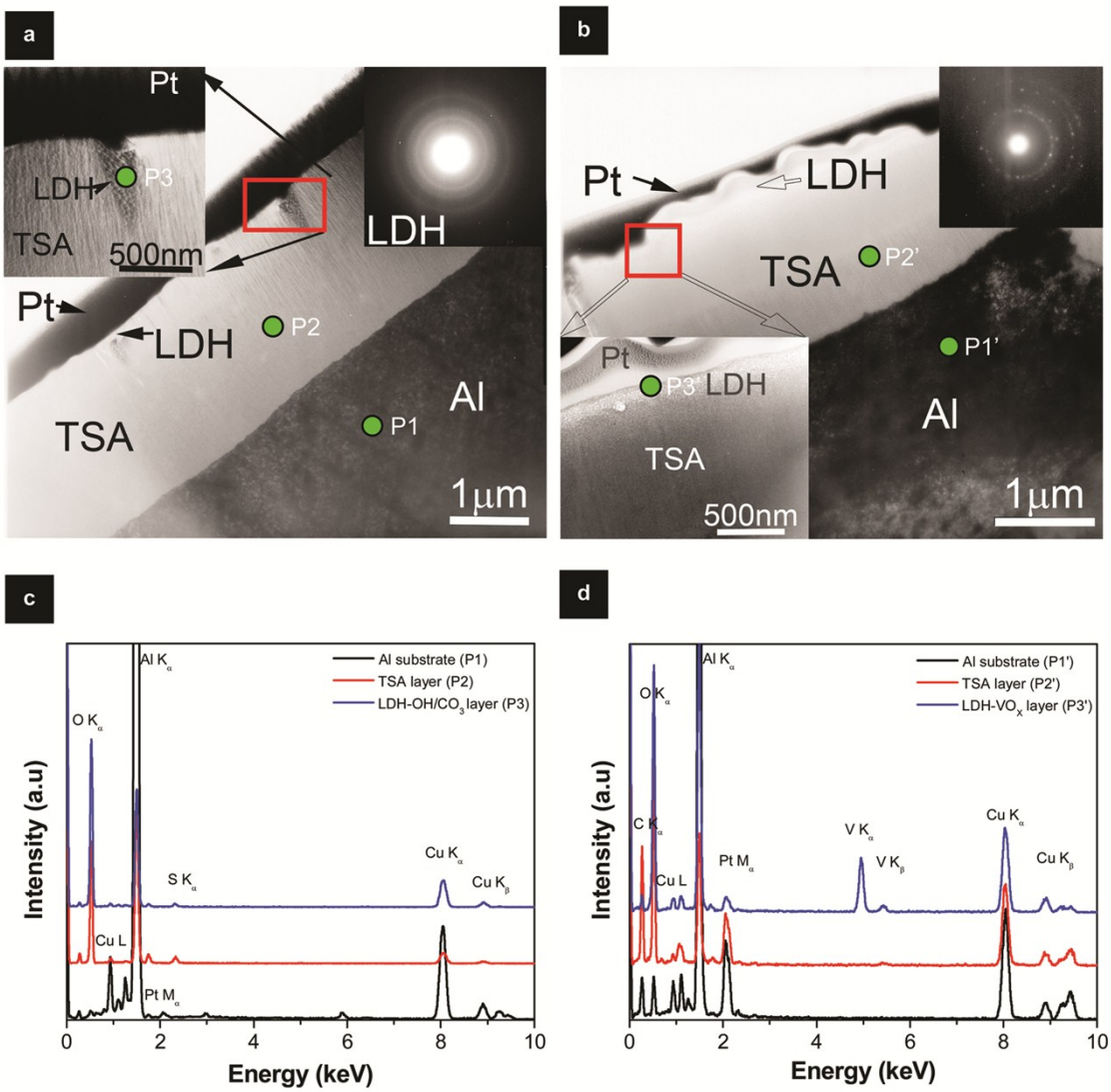

Figure S2 – Cross-sectional TEM images of the (a) LDH-OH/CO_3 and (b) LDH-VO_x sealing layers (with respective inset images of the diffraction patters) and related (c and d) EDX spectra.

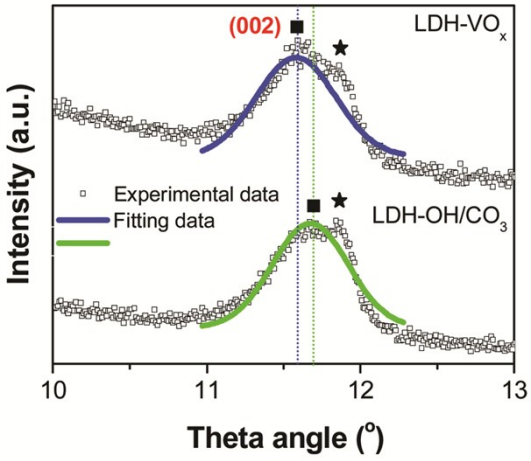

Figure S3 – XRD spectra of thick sealing layers (growth time of 5 hours) of LDH-OH/CO_3 and LDH-VO_x (■ LDH, ★ TSA).

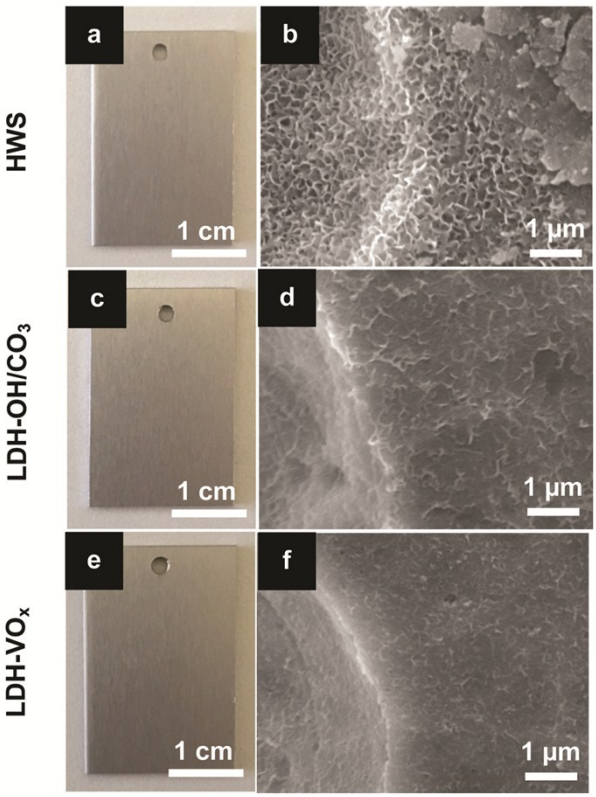

Figure S4 – Photographs and SEM images of (a,b) hot-water sealed TSA (reference sample), and (c,d) LDH-OH/CO_3 and (e,f) LDH-VO_x sealed TSA.

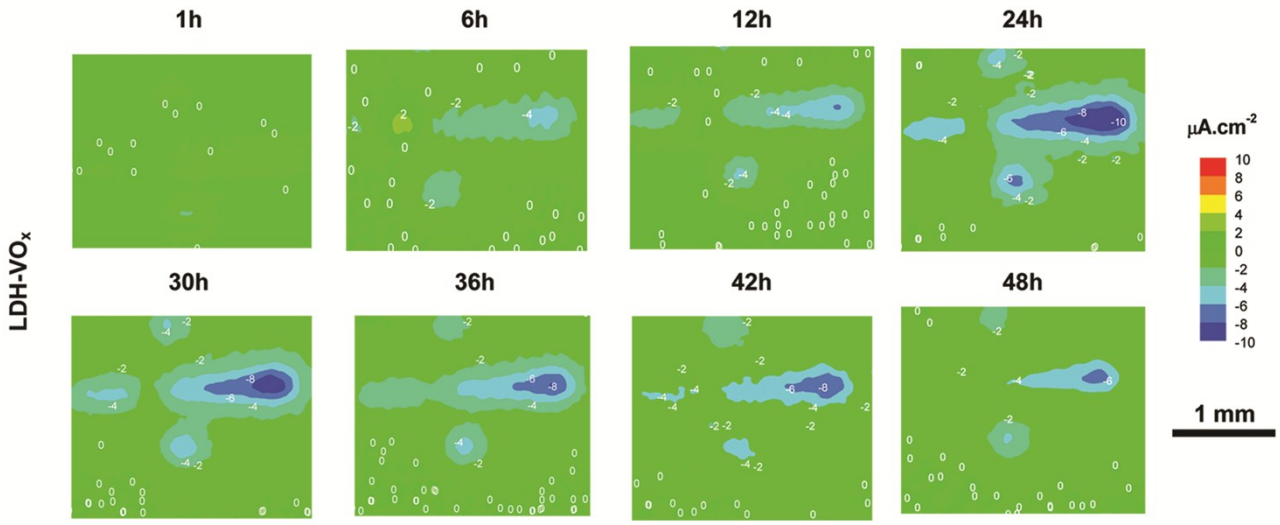

Figure S5 – SVET maps evolution over immersion time of LDH-VO_x layers with artificial defects.

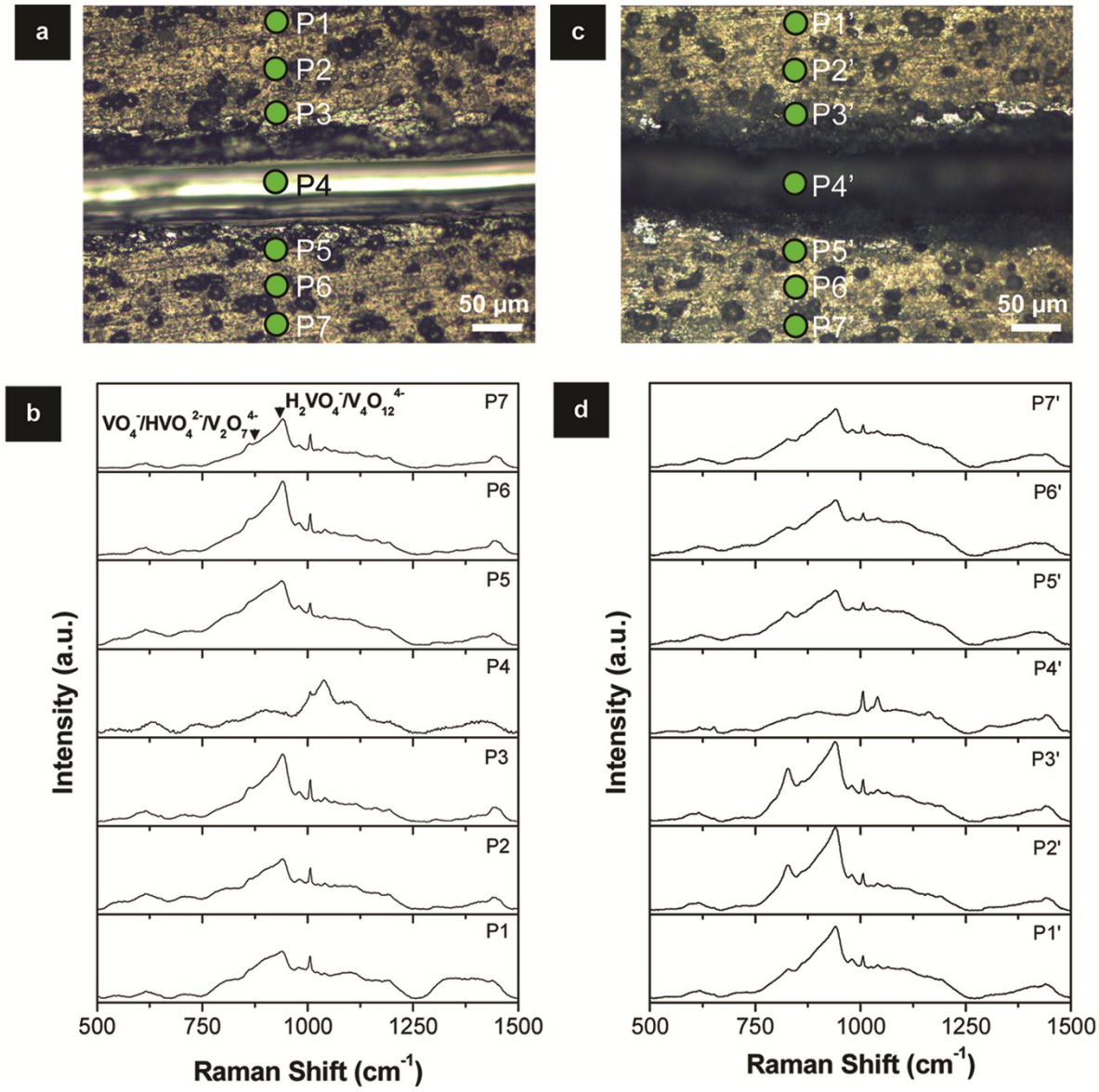

Figure S6 – Optical images and Raman analyses of samples with artificial scribe before and after 48 h immersion in 0.05 M NaCl: (a,b) LDH-OH/CO_3 and (c-d) LDH-VO_x sealed TSA.

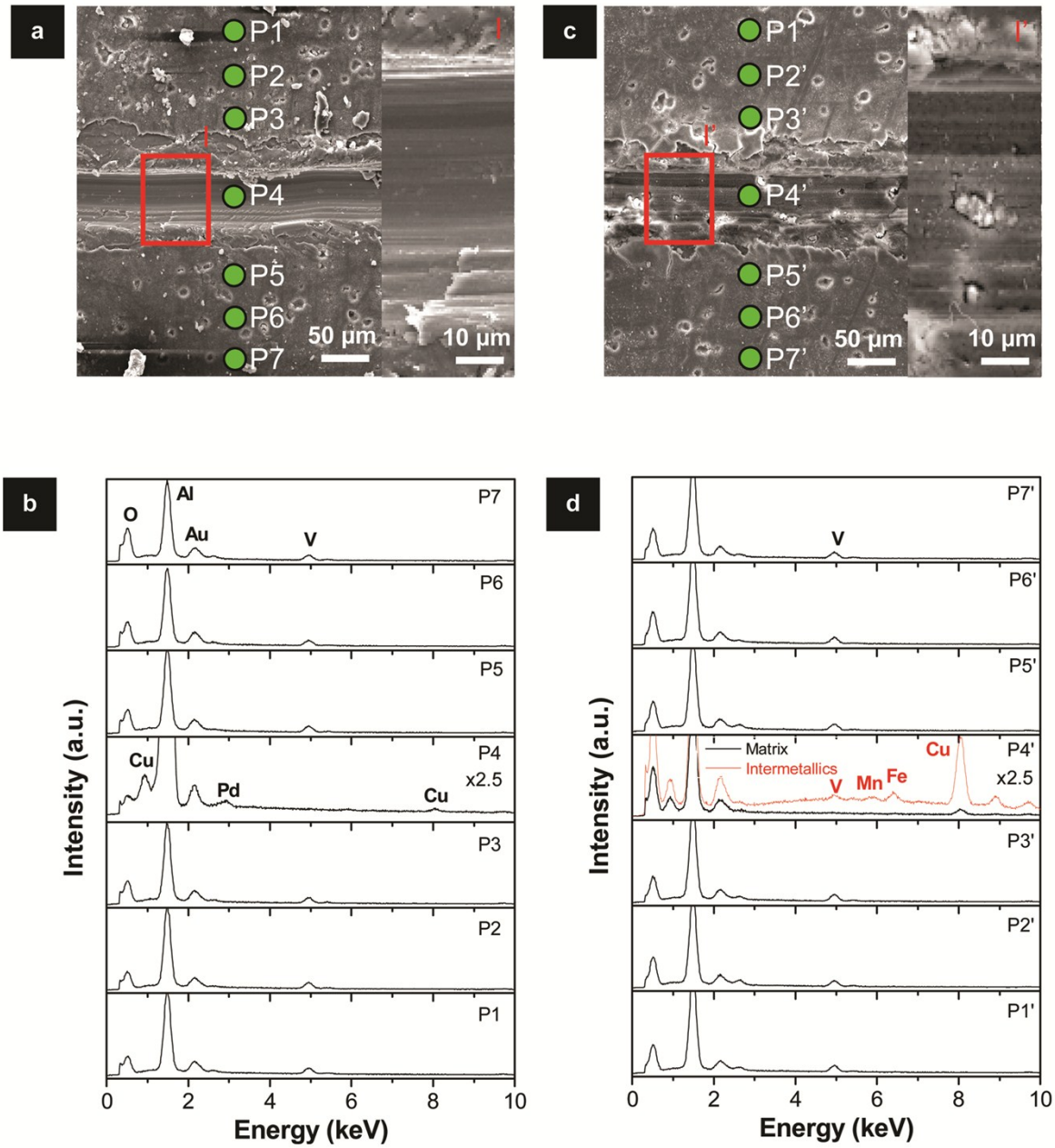

Figure S7 – SEM images and EDX analyses of samples with artificial scribe before and after 48 h immersion in 0.05 M NaCl: (a,b) LDH-OH/CO_3 and (c-d) LDH-VO_x sealed TSA.

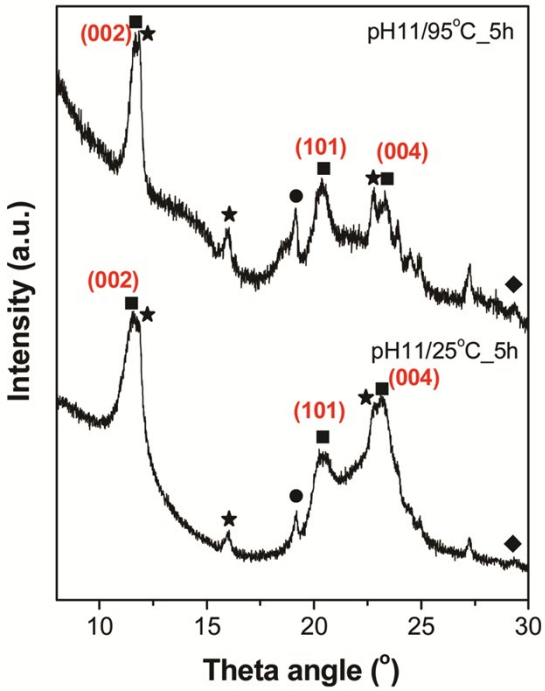

Figure S8 – XRD spectra of thick sealing layers (growth time of 5 hours) of LDH-OH/CO_3 prepared at 95 °C and 25 °C (■ LDH, ★ TSA, ● $Al(OH)_3$, ◆Li_2CO_3).