Carboxylate- Intercalated Layered Double Hydroxides for H₂ Sorption

Yu-Wei Huang and Soofin Cheng*

Department of Chemistry, National Taiwan University, No. 1, Sec. 4, Roosevelt Road, Taipei,
10617, Taiwan
Figure S1. SEM micrographs of LDHs with different anions (a) CO3, (b) aa, (c) TA, (d) pTA, (e) TA/aa, (f) TA/2aa, (g) TA/4aa, (h) TA/6aa, (i) pTA/aa, (j) pTA/2aa, and (k) pTA/3aa.
Figure S2. (A) TGA and (B) DTG profiles of LiAl-LDHs with different interlayer anions (a) aa$^-$  (b) TA$^{2-}$  (c) CO$_3^{2-}$; and (d) pTA$^-$.
Figure S3. DTG profiles of LiAl- LDHs with mixed acetate and arylate anions (A) TA/aa and (B) pTA/aa.
Figure S4. (A) N$_2$ adsorption-desorption isotherms and (B) BJH desorption pore size distribution of LiAl-LDHs with different interlayer anions:

(a) CO$_3$, (b) aa, (c) TA, (d) TA/4aa, (e) pTA, and (f) pTA/3aa.
Figure S5. Relationship between the hydrogen uptake at 298K /100 atm and (A) microporous surface area, (B) micropore volume of LDHs with different interlayer anions.