



Fig. S3. X-ray diffraction patterns for CaFe-LDHs reacted with Na^+ -taurine salt via solid phase intercalation with respect to the amount of added water (a) 0 (b) 5 (c) 10 (d) 20 (e) 30 and (f) 40 μL . (★: Na^+ -taurine salt)

$(002)^1$: (002) for NO_3^- intercalated CaFe-LDH ($\text{Ca}_{2.01}\text{Fe}(\text{OH})_6(\text{NO}_3)\cdot 4.75\text{H}_2\text{O}$)

$(002)^2$: (002) for taurine intercalated CaFe-LDH ($\text{Ca}_{1.91}\text{Fe}(\text{OH})_{5.63}(\text{Tau})_{1.19}\cdot 5\text{H}_2\text{O}$)

$(002)^3$: (002) for CaFe-LDH with slightly expanded gallery space. (between NO_3^- intercalated phase and taurine intercalated phase)