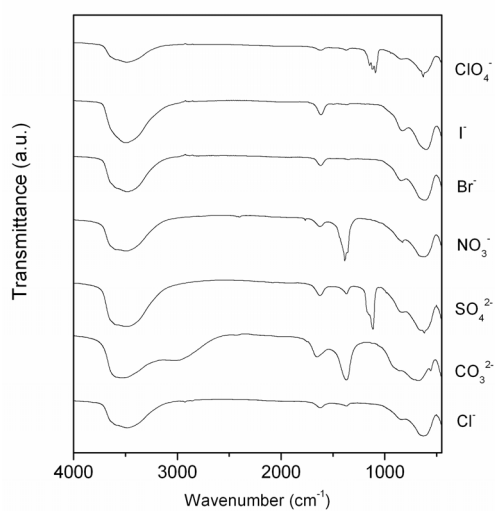


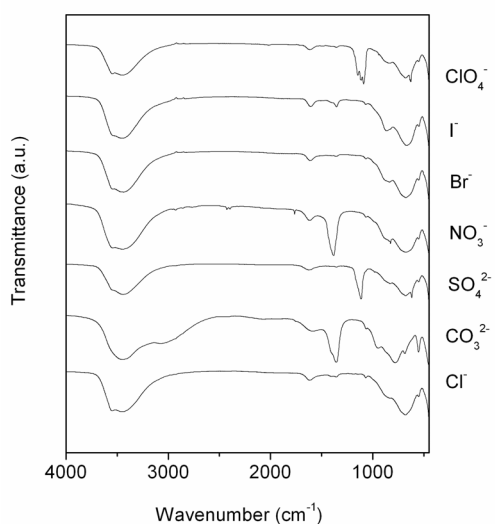
Electronic Supplementary Information

Preparation of highly-oriented organic-LDH hybrid films by combining the decarbonation, anion-exchange, and delamination processes

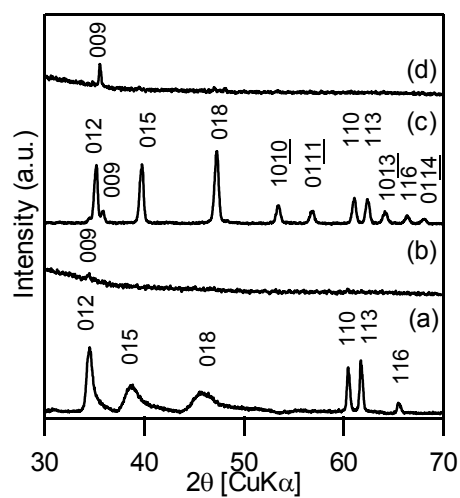
Kentaro Okamoto, Takayoshi Sasaki, Taketoshi Fujita and Nobuo Iyi



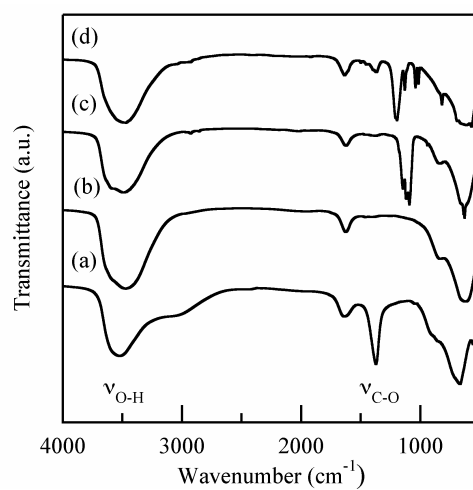
S-1. Infrared spectra of the obtained powdery LDH3s containing various inorganic anion ions.



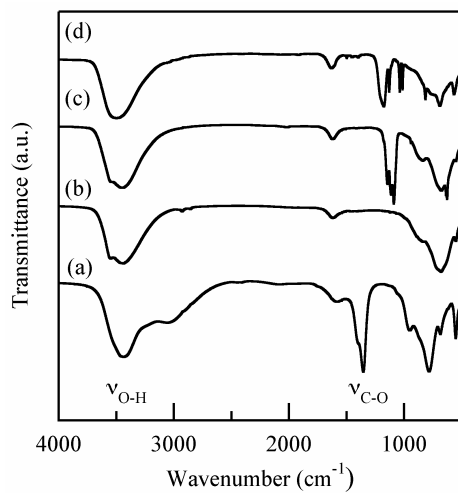
S-2. Infrared spectra of the obtained powdery LDH2s containing various inorganic anion ions.



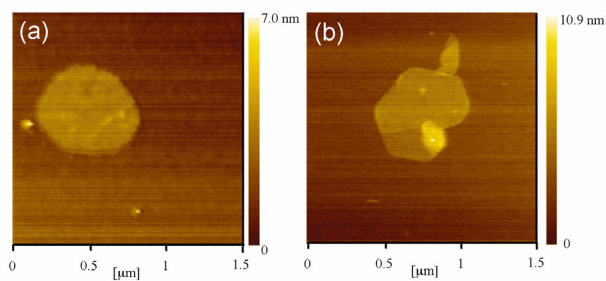
S-3. Magnified XRD patterns of (a) CO₃²⁻LDH3 powder, (b) CO₃²⁻LDH3 film, (c) CO₃²⁻LDH2 powder, and (d) CO₃²⁻LDH2 film on glass substrates.



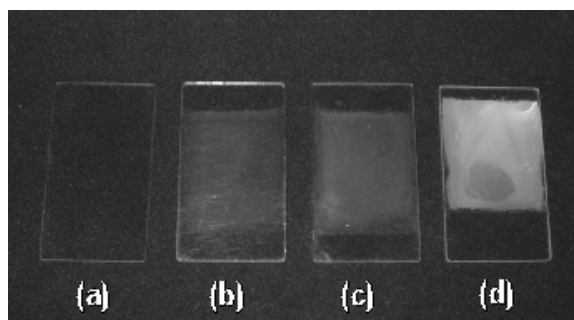
S-4. Infrared spectra of thin LDH3 films formed on glass substrates. (a) CO₃²⁻LDH3 obtained by casting its aqueous suspension and converted to (b) Cl⁻LDH3 by decarbonation, and to (c) ClO₄⁻LDH3, and (d) Tos⁻LDH3.



S-5. Infrared spectra of thin LDH2 films formed on glass substrates. (a) CO₃²⁻LDH2 obtained by casting its aqueous suspension and converted to (b) Cl⁻LDH2 by decarbonation, and to (c) ClO₄⁻LDH2, and (d) Tos⁻LDH2.



S-6. Tapping mode AFM images of delaminated (a) ClO₄⁻LDH3 and (b) ClO₄⁻LDH2 sheets deposited onto a silicon substrate.



S-7. Photos of a glass substrate, and thin films on the glass substrates: (a) Glass substrate only, (b) ClO_4^- LDH3 film (from ClO_4^- LDH3/FA colloidal suspension), (c) Tos^- LDH3 film (from Tos^- LDH3/FA colloidal suspension), (d) CO_3^{2-} LDH3 film (from formed using CO_3^{2-} LDH3/water suspension). Films (ca. 9.5 cm^2) were prepared by applying 100mL of LDH3/solvent (0.02 mol/L) to substrates.