The increase in the relative intensity of the 006 reflection relative to the 003 is an indication of the increased electron density in the interlayer, resulting from the incorporation of a heavy scatterer such as I in the place of light atoms, NO₃⁻. The decrease in c-parameter from 8.9 Å to 8.2 Å is on account of substitution of NO₃⁻ in the interlayer by I⁻.
SI. 2. IR spectrum of Mg/Al-NO₃ (x = 0.33) LDH (a) before and (b) after I⁻ exchange.
SI 3. $\text{Br}^-$ uptake isotherms of Mg/Al-NO$_3$ and Mg/Al-Cl LDHs

![Graph showing $\text{Br}^-$ uptake isotherms for Mg/Al-NO$_3$ and Mg/Al-Cl LDHs.](image-url)