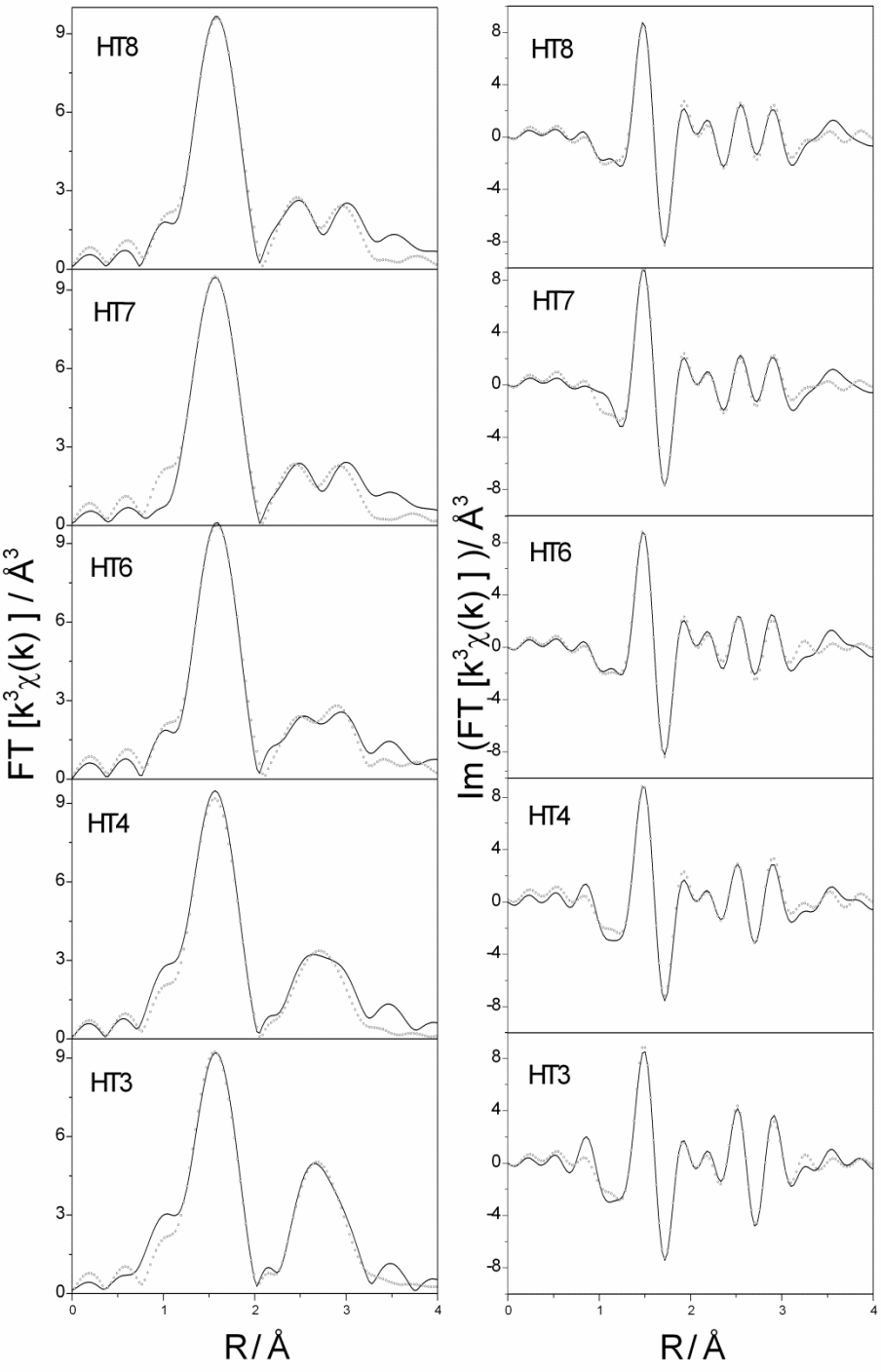

Figure S1 - Fourier-transformed magnitude and imaginary parts of the experimental and simulated spectra for NiAl-TA hydrotalcites.Left, Fourier Transform Magnitude; Right, Fourier Transform Imaginary Part; solid line, experimental spectra; dotted line, simulation

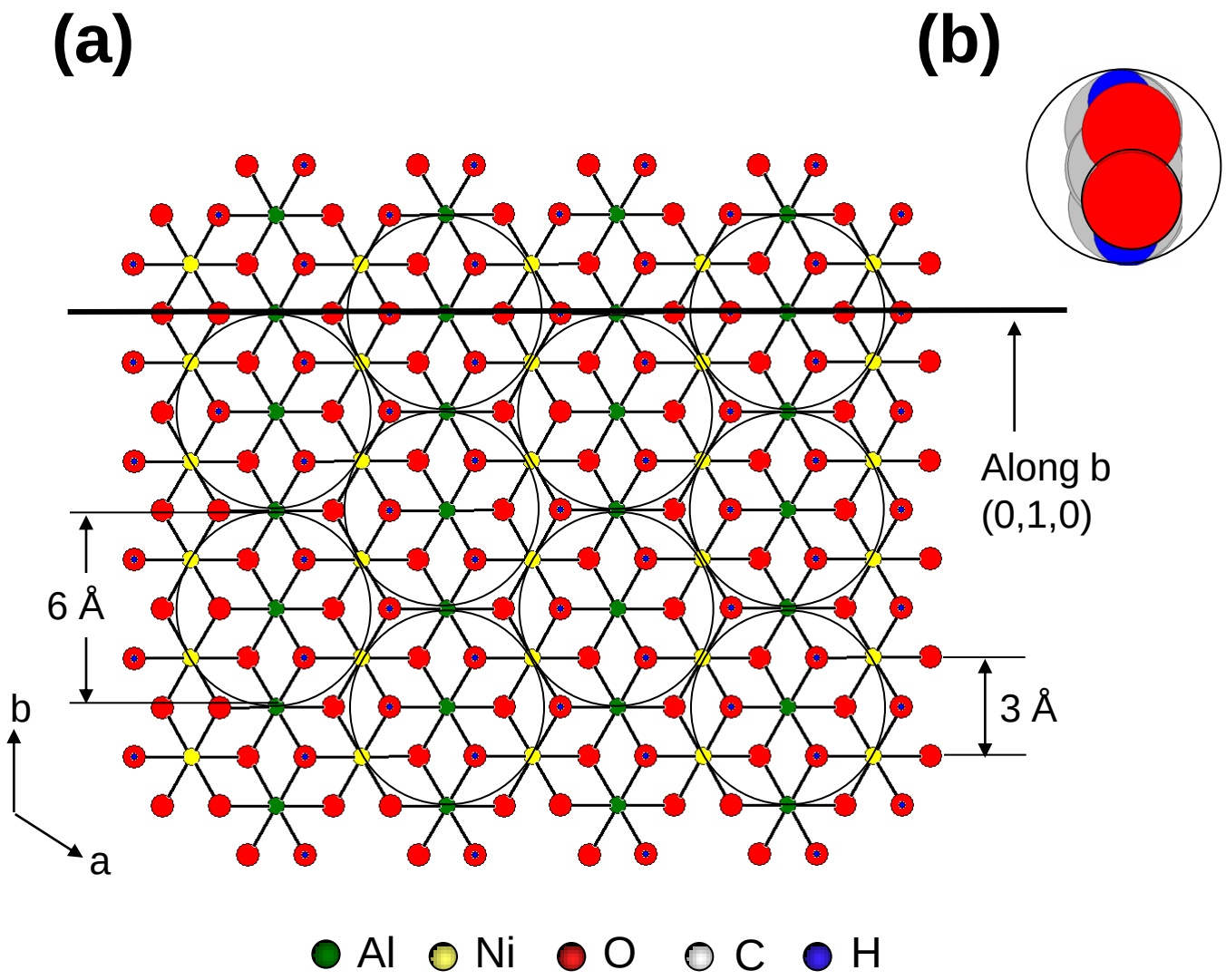

Fig. S2 – (a) Model view of a Ni-Al-terephtalate layer with x = 0.5 along the c axis. The circles have the same diameter as the one in Fig. S4(b). Figure drawn using crystallographic data for Mg-Al-CO_3^{2-} hydrotalcite from Inorganic Crystal Structure Database (ICSD) code 81963; **(b)** Space-filling view of the therephtalate anion along the carboxyl axis. Figure drawn using crystallographic data for cobalt terephtalate from James A. Kaduk, *Acta Cryst.* 2002, **B58**, 815-822. The circle represents the area sweeped by a freely rotating anion. Van der Waals radii taken as 1 Å for H, 1.77 Å for C and 1.52 Å for O. The cut along the *b* axis is shown in Fig. S3.

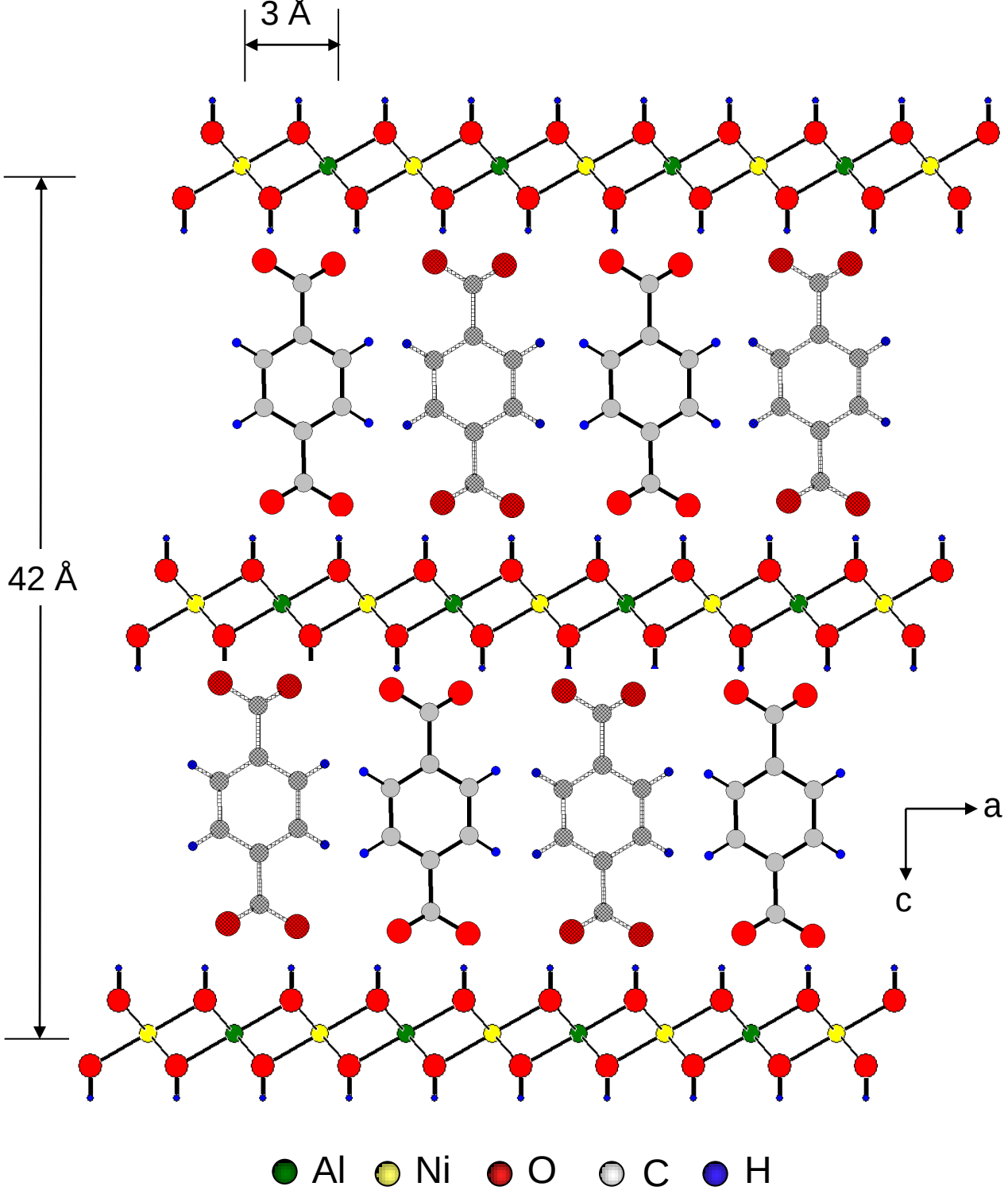

Fig. S3 – Layer chart for Ni-Al-tereftalate HDL with x = 0.5 along the b axis. Figure based on the same crystallographic data for each layer and for the terephtalate anion as in Fig. S2. Shaded terephtalate anions are at the background plane and unshaded ones at the foreground plane.