Supporting Information:

As NO₃⁻ anion is Raman active, hydrotalcite containing NO₃⁻ are readily characterised by Raman spectroscopy.¹ LDH/APTES (Figure 1) sample has a spectrum consisting of two bands at 552 and 1045 cm⁻¹. The first band is due to the lattice vibration of the hydroxyl layer, similar to those observed in the IR spectra. The strong band at 1045 cm⁻¹ is assigned to symmetric stretching of non hydrogen bonded NO₃⁻ ions. Raman spectra of LDH/APTES is dominated by two prominent bands centred at 2880 and 2850 cm⁻¹, which are assigned to the antisymmetric and symmetric stretching modes of the methylene units.² The anti symmetric stretching mode of the terminal methyl group appears at 2959 cm⁻¹. Though H₂O is a poor Raman scatterer,¹ the peak just below 1600 cm⁻¹ is due to hydrogen bonded water present in the interlayer of LDH.³ The intensity of Raman peaks indicative of the amine functional group, observed around 3300 cm⁻¹. Bands due to Si-O vibrations are also observed at 798, 956, 1078 and 1147 cm⁻¹.

Figure 1. Raman spectra of LDH/APTES
