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Supporting Information:

As NO_3^- anion is Raman active, hydrotalcite containing NO_3^- 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 NO_3^- 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 H_2O 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}.

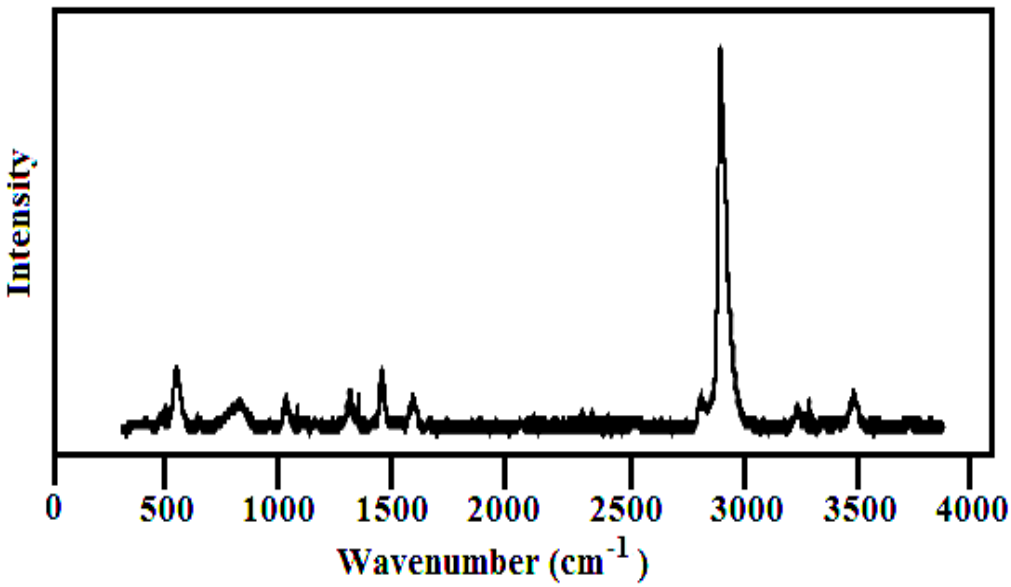

Figure 1. Raman spectra of LDH/APTES

1 R. L. Frost and K. L. Erickson, *Spectrochimica Acta*., 2005, **61**, 2919.

2 R. G. Snyder, H. L. Strauss and C. A. Elliger, *J. Phys. Chem*., 1982, **86**, 5145.

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3 J. T. Kloprogge, M. Weier, I. Crespo, M. A. Ulibarri, C. Barriga, V. Rives, W. N. Martens and R. L. Frost, *Journal of Solid State Chemistry.*, 2004, **177**, 1382.