Assembly of Hybrid Inorganic-Organic Materials from Octahedral Nb_6 clusters and metal complexes

Huajun Zhou, Cynthia S. Day and Abdessadek Lachgar

Supporting Information (CIF files for the three compounds have been submitted with the original manuscript)

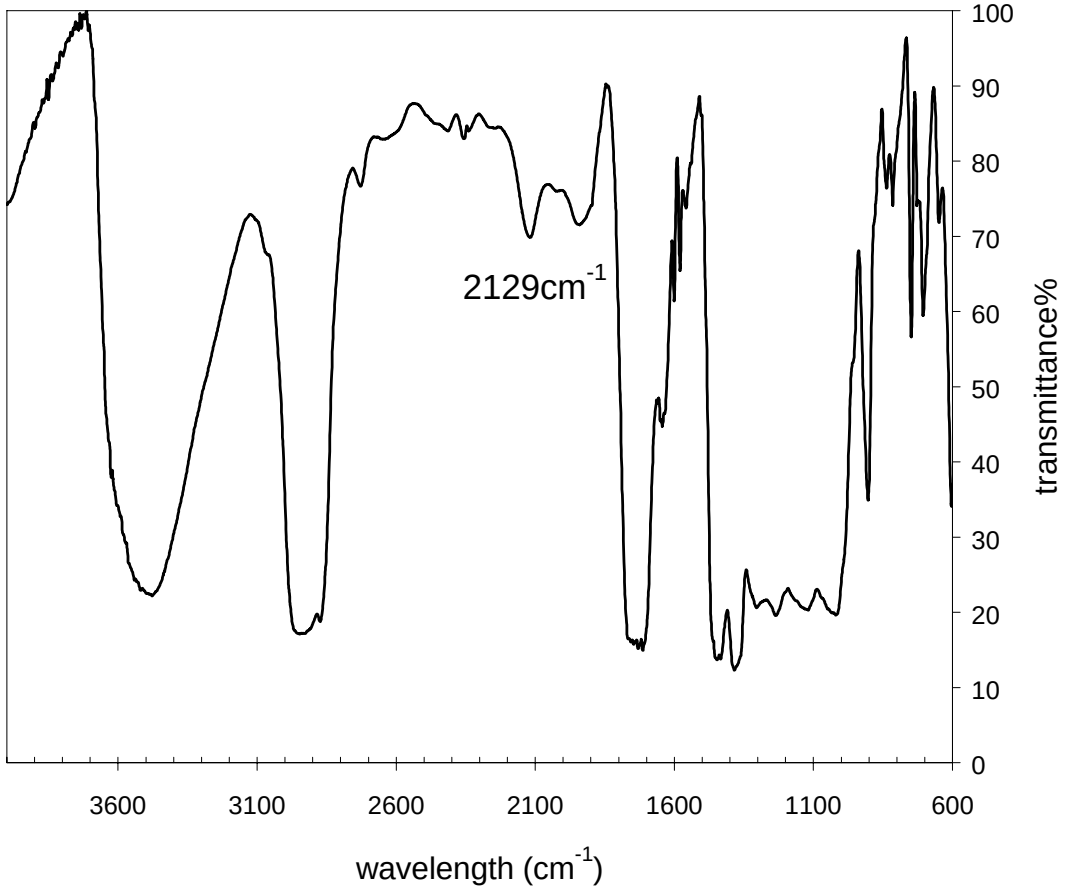

Figure 1. IR spectra of compound $[Me_4N]_4[Nb_6Cl_{12}(CN)_6]$.2MeOH.

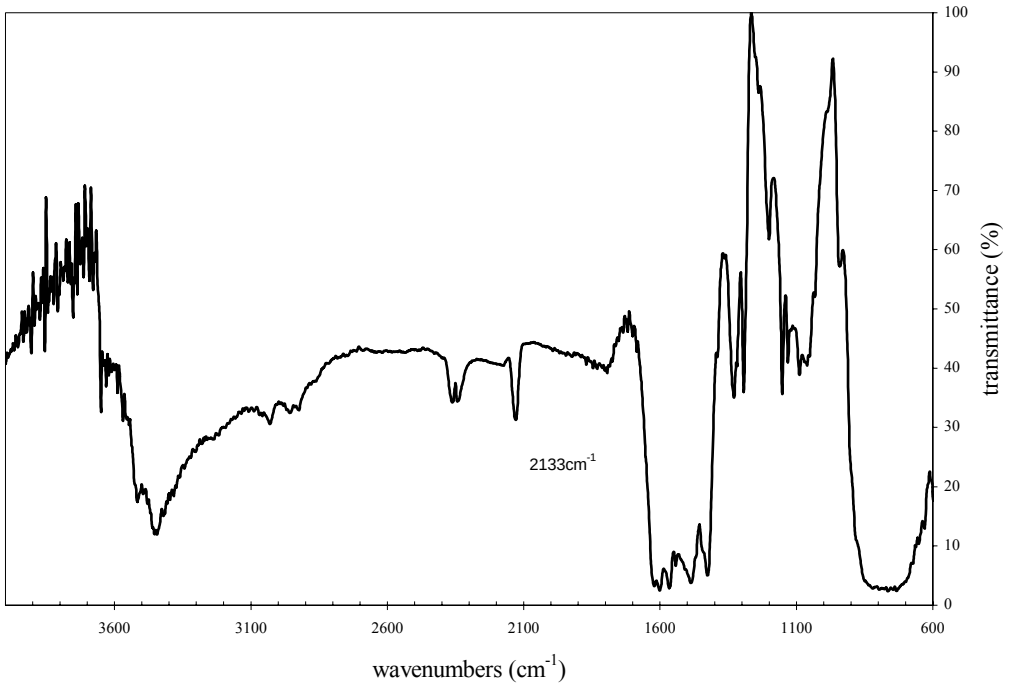

Figure 2. IR spectra of compound $[Me_4N]_2[Mn(salen)]_2[Nb_6Cl_{12}(CN)_6]$.

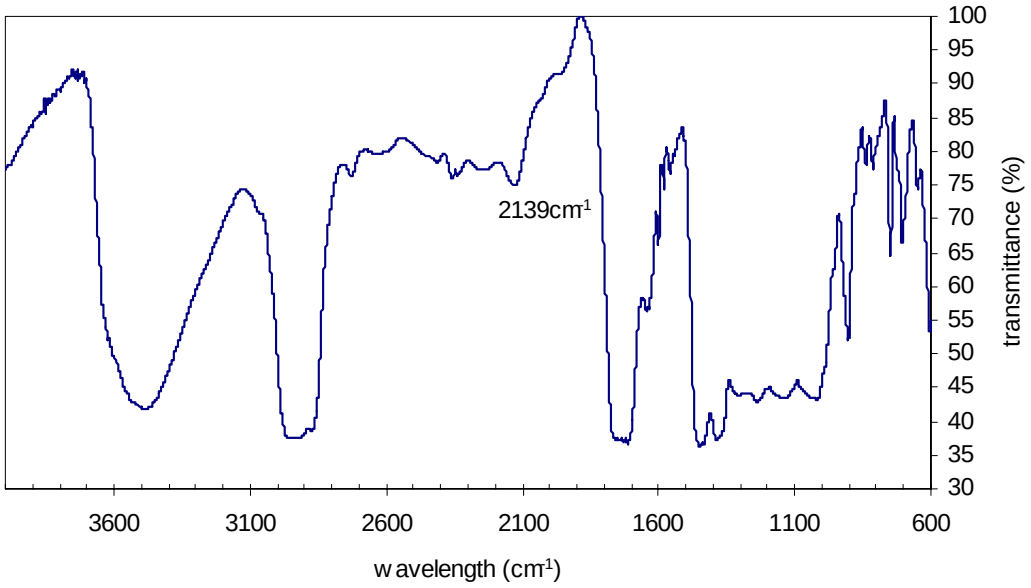

Figure 3. IR spectra of the materials of compound $[Me_4N]_2[Mn(salen)]_2[Nb_6Cl_{12}(CN)_6]$ after TGA (470°C), indicating the existence of C≡N

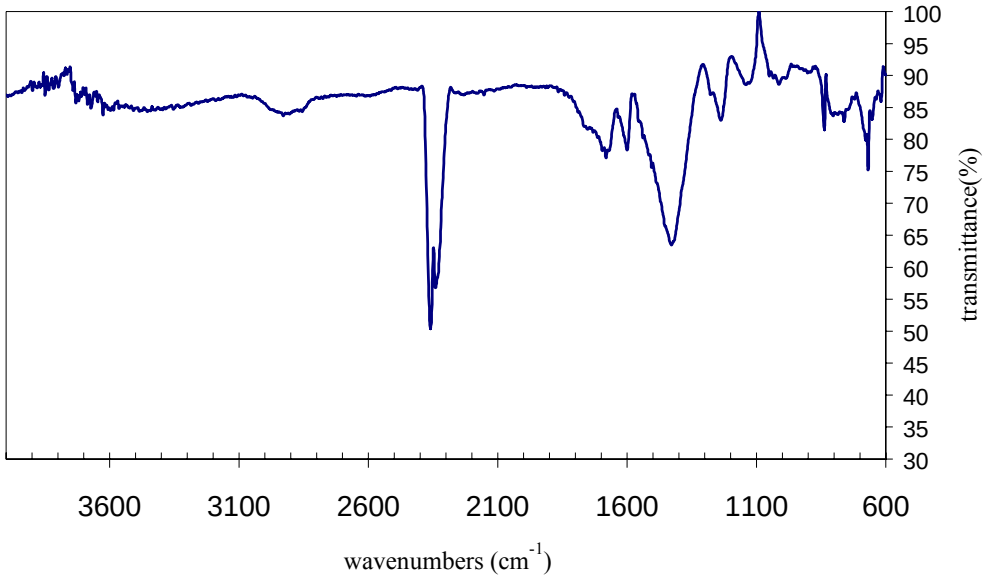

Figure 4. IR spectra of the materials of compound $[Me_4N]_2[Mn(salen)]_2[Nb_6Cl_{12}(CN)_6]$ after TGA (600°C), indicating the complete loss of C≡N.

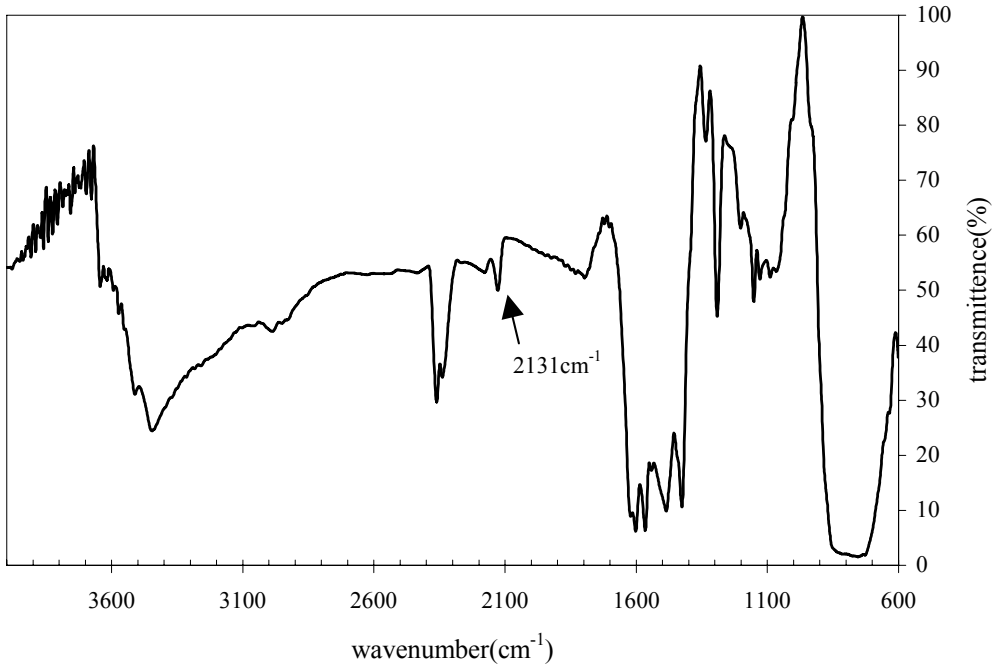

Figure 5. IR spectra of compound $[Et_4N]_2[Mn(salen)]_2[Nb_6Cl_{12}(CN)_6]$.2MeOH

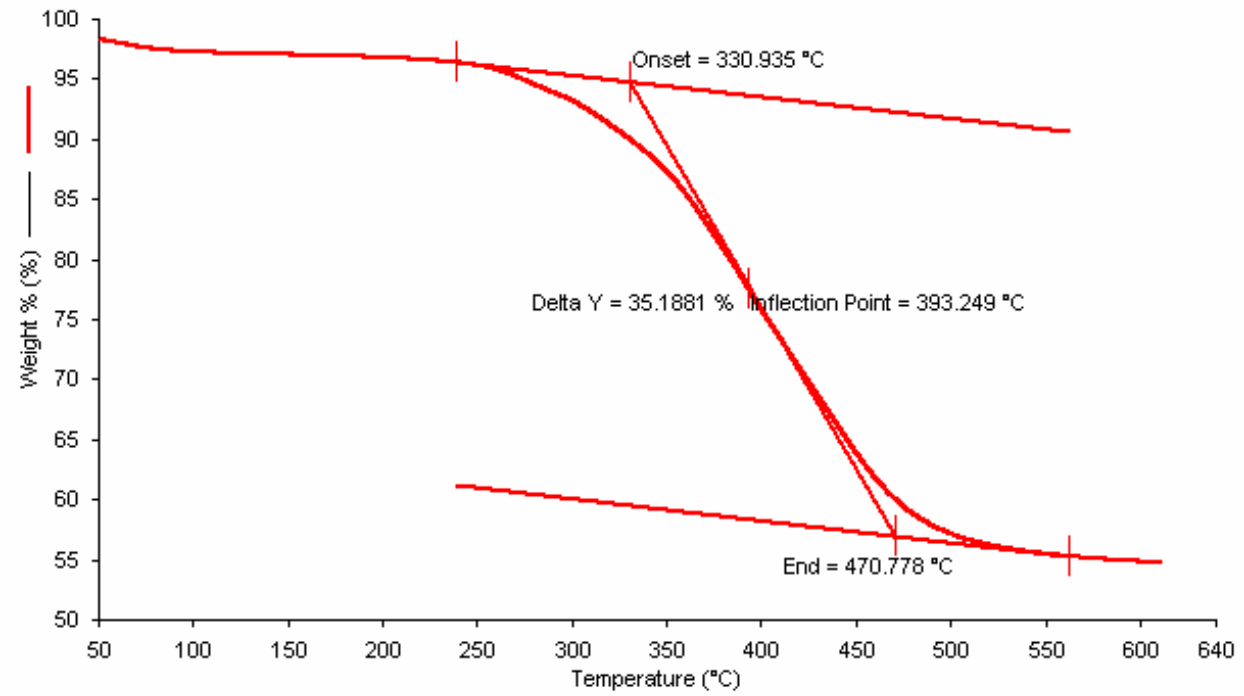

Fig 6. TGA plot for compound $[Me_4N]_2[Mn(salen)]_2[Nb_6Cl_{12}(CN)_6]$, heat from 50 °C to 600 °C at 5 °C /min under a flow of nitrogen (40 mL/min).

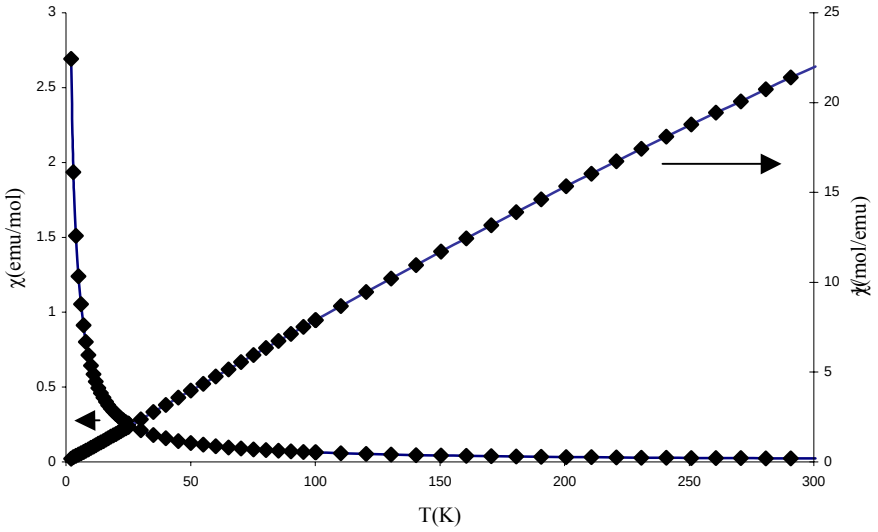

Figure 7. Reciprocal magnetic susceptibility data of compound **1**, as measured in an applied field of 5000G.

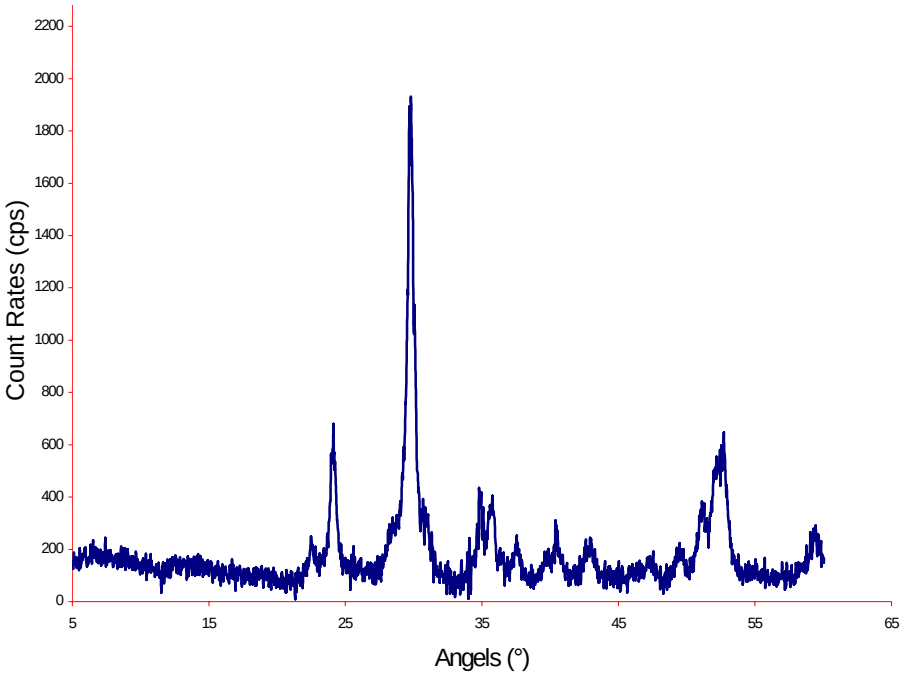

Figure 8. Powder XRD pattern of the materials obtained after the TGA of $[Me_4N]_2[Mn(salen)]_2[Nb_6Cl_{12}(CN)_6]$ to 600°C.

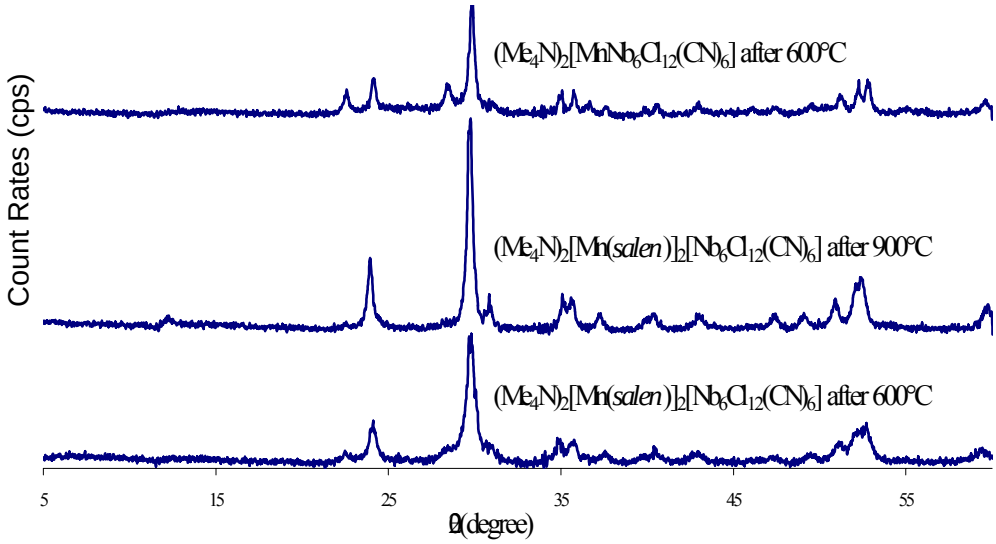

Figure 9. PXRD pattern comparison of the three materials obtained after TGA of $(Me_4N)_2[Mn(salen)]_2[Nb_6Cl_{12}(CN)_6]$ and $(Me_4N)_2[MnNb_6Cl_{12}(CN)_6]$.