SUPPORTING INFORMATION

Eu^{3+}-and Tb^{3+}-Dipicolinate Complexes Covalently Grafted into Kaolinite as Luminescent Functionalized Clay Hybrid Materials

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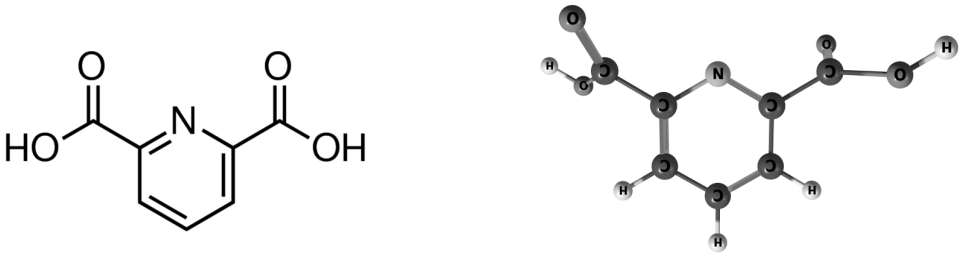


Figure S1. Formula and structure of dipicolinic acid.

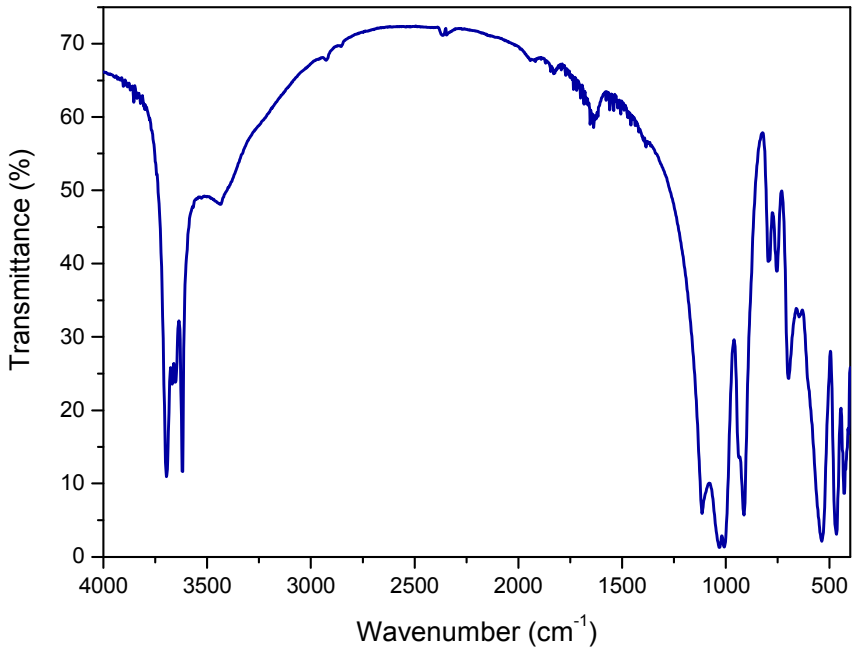
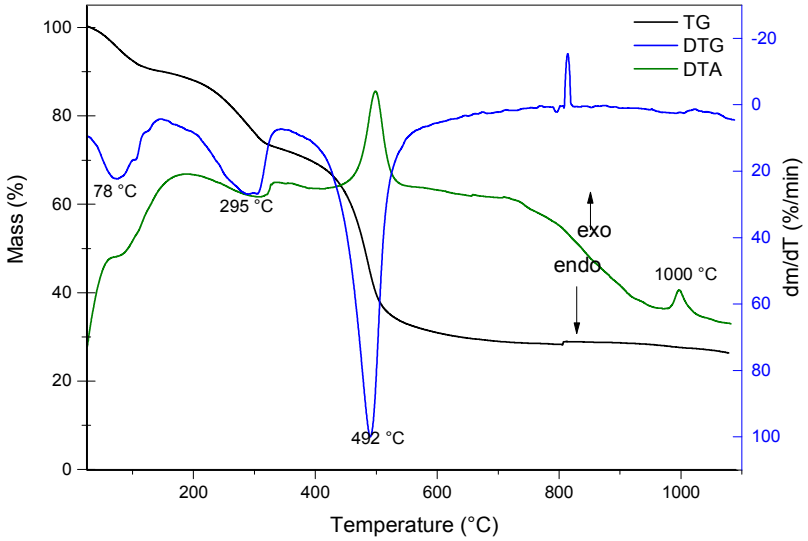
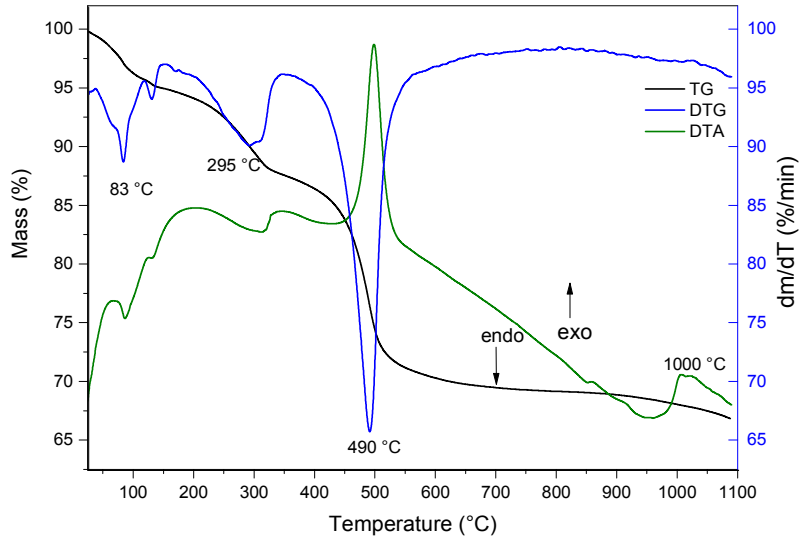


Figure S2: FTIR spectrum of natural kaolinite.


TG
DTG
DTA
Mass (%)
dm/dT (%/min)
Temperature (°C)
78 °C
295 °C
492 °C
exo
endo
1000 °C


TG
DTG
DTA
Mass (%)
dm/dT (%/min)
Temperature (°C)
83 °C
295 °C
490 °C
endo
exo
1000 °C

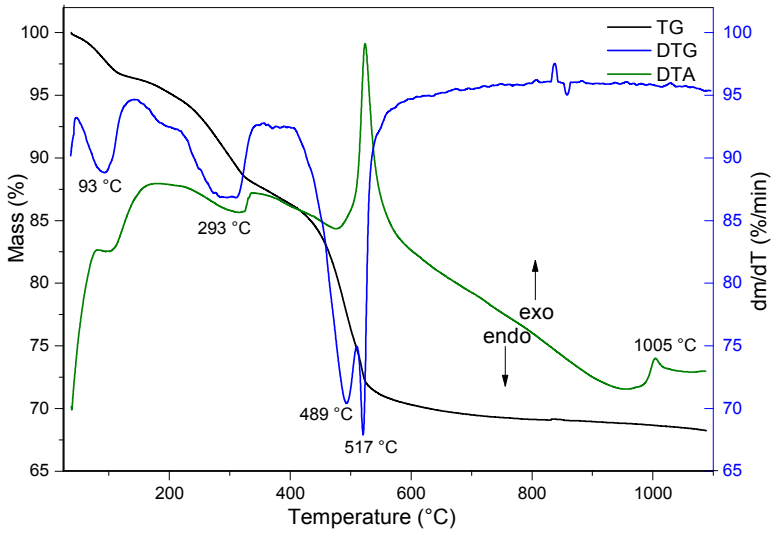


Figure S3. TG (black), DTG (blue), and DTA (green) curves of, from top to bottom, Eu(Ka-dpa)-1, Eu(Ka-dpa)-2 and Tb(Ka-dpa), recorded under air atmosphere and at a heating rate of 20 ºC/min.

Table S1. Reaction Ratio (α) for the Different Solids

Sample	α*
Ka-dpa	86
(Ka-dpa)Eu-1	96
(Ka-dpa)Eu-2	77
(Ka-dpa)Eu-3	75
(Ka-dpa)Tb	77

*The reaction ratio (α) was determined by using the relation $\alpha = I/(I + I_0)$, where I is the d_{001} intensity of the products, and I_0 is the d_{001} intensity of pure kaolinite.

Table S2. Assignment of the Infrared Absorption Bands for Ka-dpa before and after Complexation with Eu^{3+} or Tb^{3+} Ions

	Ka-dpa (cm^{-1})	Ln(Ka-dpa)* (cm^{-1})
ν $(OH)_{intra}$	3620	3629
ν $(OH)_{inter}$	3698	3698
Si-O	1029, 1050, 1088	1025, 1046, 1091
ν Al-OH_{intra}	912	912
ν Al-OH_{inter}	–	–
SiO_2 or quartz	795	795
δ Si-O-Al	755	760
δ Si-O-Si *out of plane*	685	698
δ Si-O-Al_{oct}	536	536
δ Si-O-Si *in plane*	467	467
Si-O	432	432
ν_{as} COO	1487, 1545, 1684	1575, 1548
ν_{sym} COO	1334	1400
ν C=C or C=N *(aro)*	1614	1618
β C–H	1295, 1161, 1117, 1090	1295, 1161, 1117, 1090

*Ln = Eu^{3+} or Tb^{3+}