

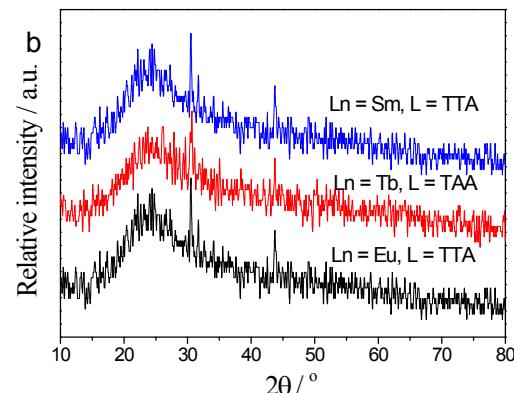
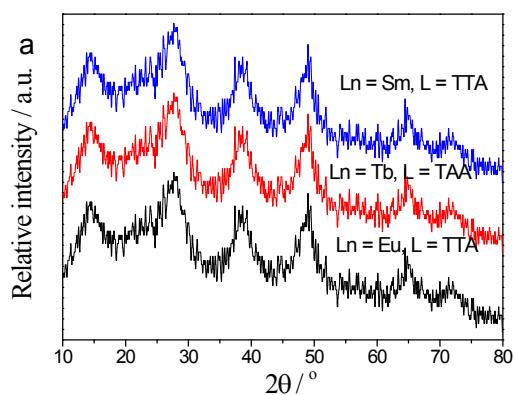
## Novel organic–inorganic hybrid soft xerogels with lanthanide complexes through an ionic liquid linkage

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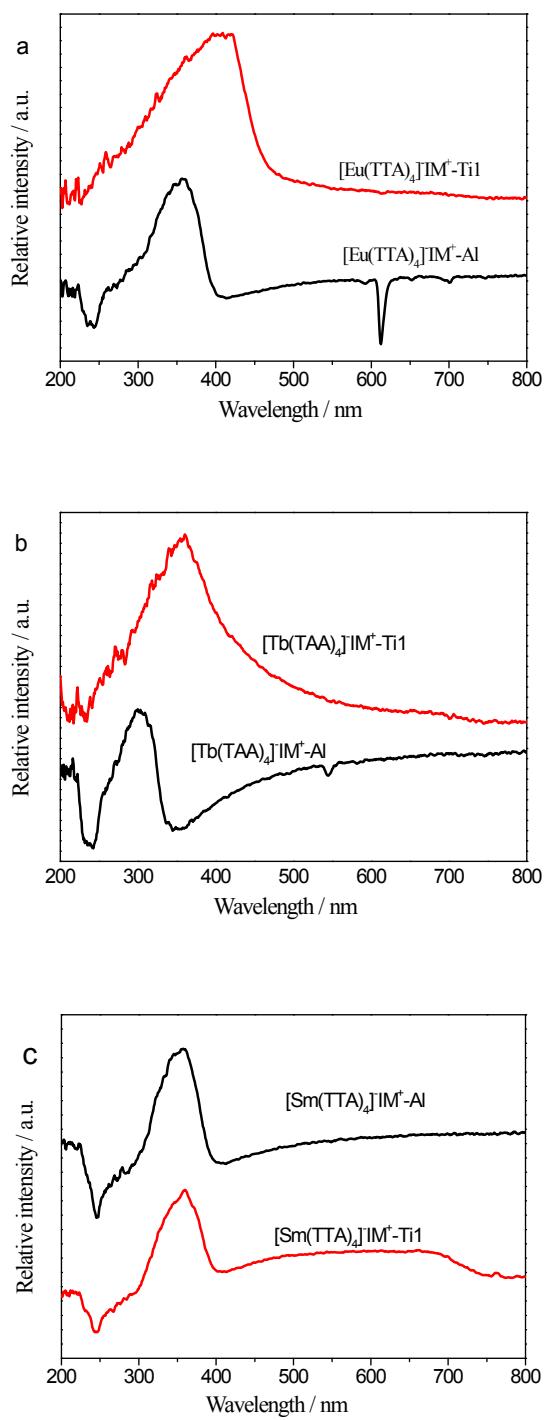
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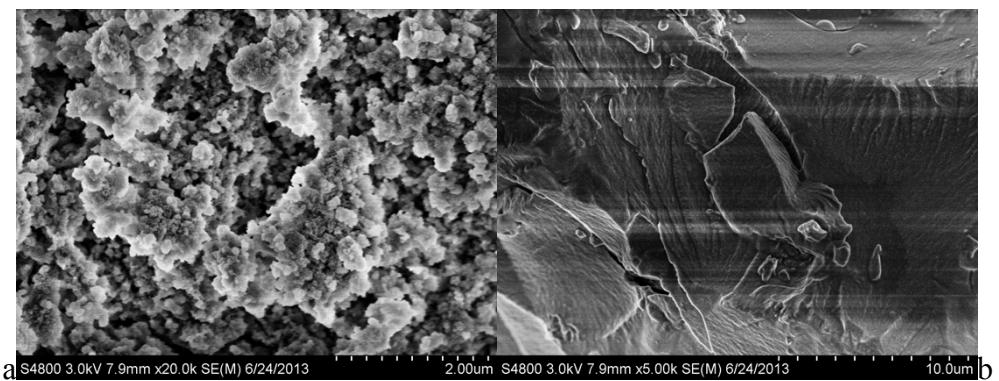
### Supporting Information



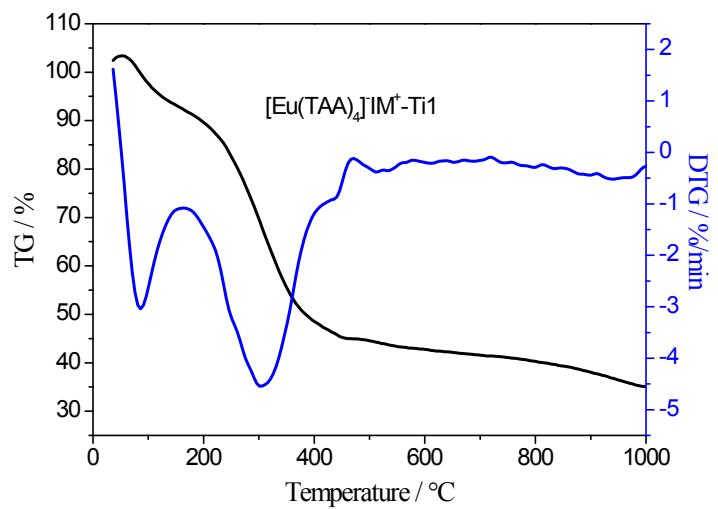
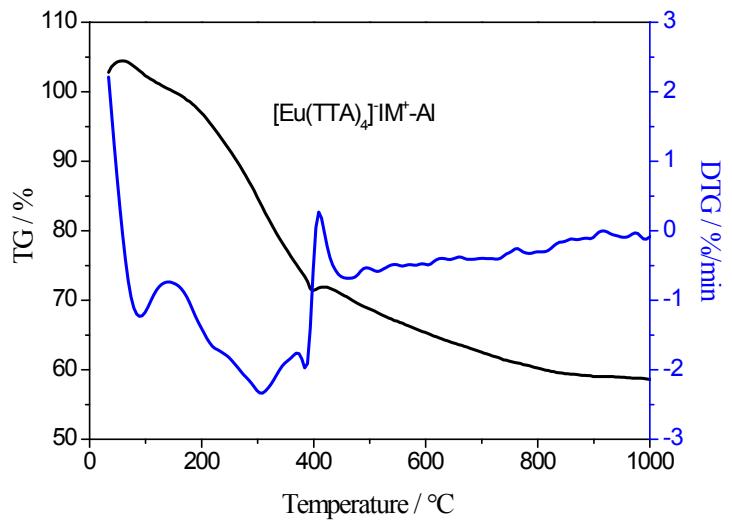
**Figure S1** XRD patterns of lanthanide soft hybrid xerogel materials: (a)  $[\text{Ln}(\text{L})_4]^- \text{IM}^+ \text{-Al}$ , (b)  $[\text{Ln}(\text{L})_4]^- \text{IM}^+ \text{-Ti1}$  ( $\text{Ln} = \text{Eu}, \text{Tb}, \text{Sm}$ ,  $\text{L} = \text{TTA}, \text{TAA}$ )



**Figure S2** Ultraviolet-visible diffuse reflection absorption spectra of lanthanide soft hybrid xerogel materials: (a) containing  $\text{Eu}^{3+}$ , (b) containing  $\text{Tb}^{3+}$ , (c) containing  $\text{Sm}^{3+}$



**Figure S3** SEM images of lanthanide soft hybrid xerogel materials: (a)  $[\text{Eu}(\text{TTA})_4] \cdot \text{IM}^+ \text{-Al}$  and (b)  $[\text{Eu}(\text{TTA})_4] \cdot \text{IM}^+ \text{-Ti1}$



**Figure S4** Differential scanning calorimetry (DTG) and thermogravimetric (TG) curves of lanthanide soft hybrid xerogel materials:  $[\text{Eu}(\text{TTA})_4]\text{IM}^+\text{-Al}$  (a) and  $[\text{Eu}(\text{TTA})_4]\text{IM}^+\text{-Til}$  (b)