

Supporting Information

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Monitoring the solvation process and stability of Eu^{2+} in an ionic liquid by *in-situ* luminescence analysis

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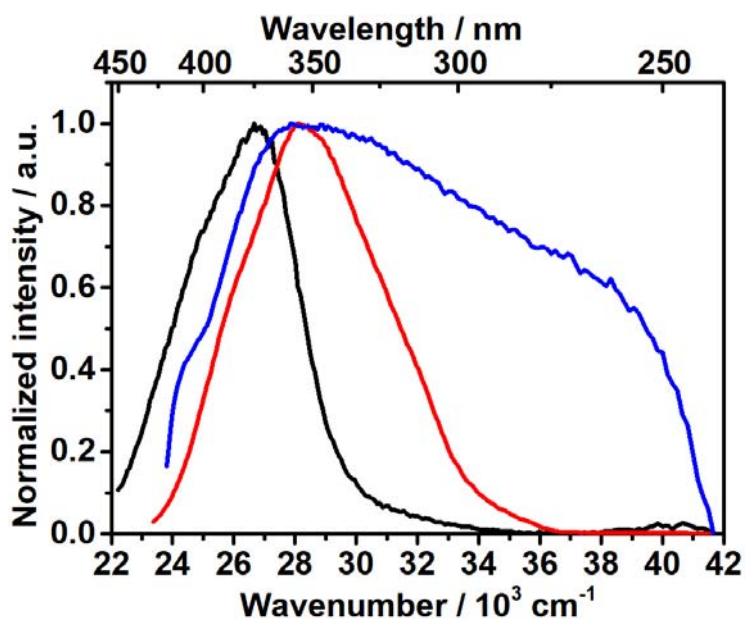


Figure S1: Comparison of the excitation spectra of EuBr_2 ($\lambda_{\text{em}} = 430$ nm, blue curve), BmimBF_4 ($\lambda_{\text{em}} = 435$ nm, red curve) and EuBr_2 solved in BmimBF_4 ($\lambda_{\text{em}} = 460$ nm, black curve).

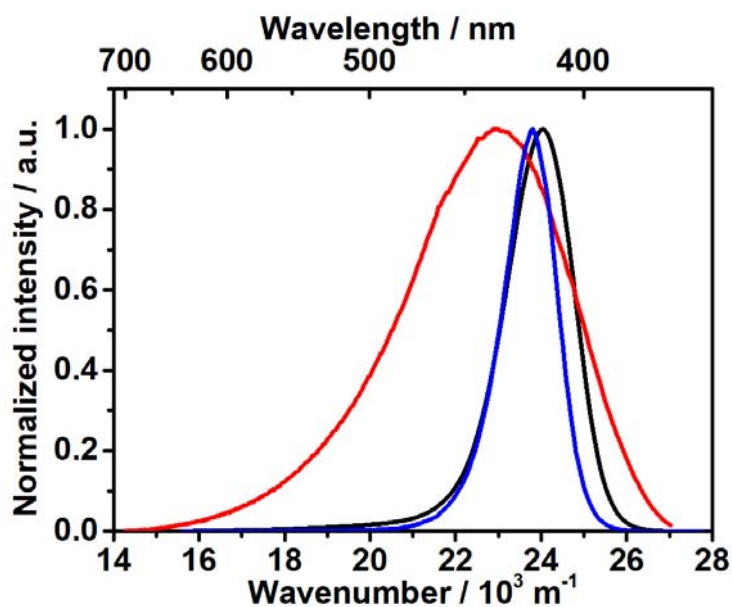


Figure S2: Comparison of emission spectra of EuCl_2 ($\lambda_{\text{ex}} = 430$ nm, blue curve), BmimBF_4 ($\lambda_{\text{ex}} = 435$ nm, red curve) and EuCl_2 introduced to BmimBF_4 ($\lambda_{\text{ex}} = 460$ nm, black curve), the emission spectrum (black curve) was measured after several hours trying to dissolve EuCl_2 in BmimBF_4 , the EuCl_2 particles remain dispersed in the ionic liquid.



Figure S3: Blue luminescence of EuBr_2 dissolved in BmimBF_4 irradiated with UV light (365 nm) after cooling down from 60 °C to room temperature.

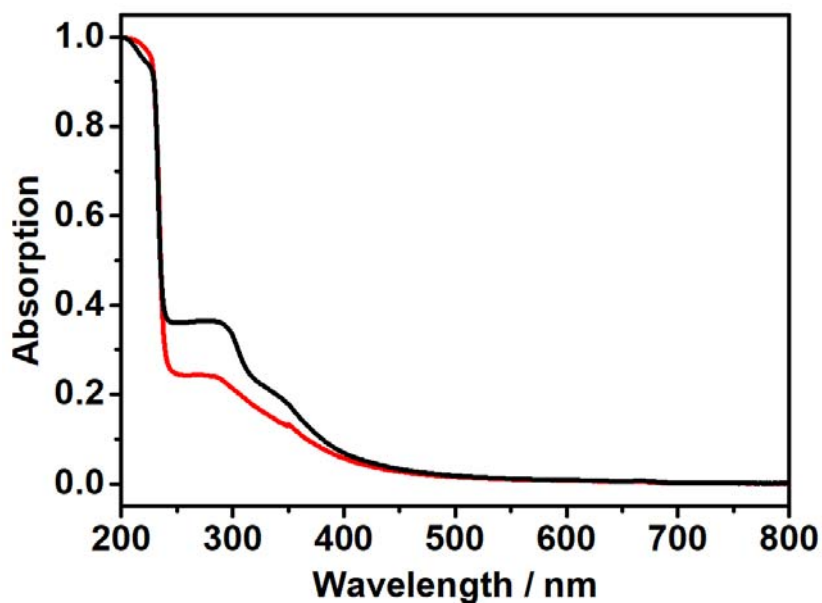


Figure S4: *Ex-situ* UV/Vis absorption spectra of BmimBF_4 (black curve) and EuBr_2 dissolved in BmimBF_4 (red curve).