

Supplementary Information

Formation of a Eu(III) borate solid species from a weak Eu(III) borate complex in aqueous solution

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Fig. S2: Progress of the luminescence lifetime τ of europium during the Eu(III) borate solid formation for solutions containing $3 \cdot 10^{-5}$ M Eu(III), $c_{B, total} = 0.2$ M ... 0.7 M, $I = 0.1$ M, pH 6

Fig. S3: Powder X-ray diffraction pattern of the solid Eu(III) borate (black graph); X-ray diffraction pattern of the sodium pentaborate phase ($Na_2[B_5O_8(OH)] \cdot H_2O$) described by Menchetti et al.¹ (main diffraction peaks are shown as grey vertical lines)

Fig. S4: Content of different Eu(III) solid species in dependence on the excitation wavelength λ_{ex} determined with the PARAFAC

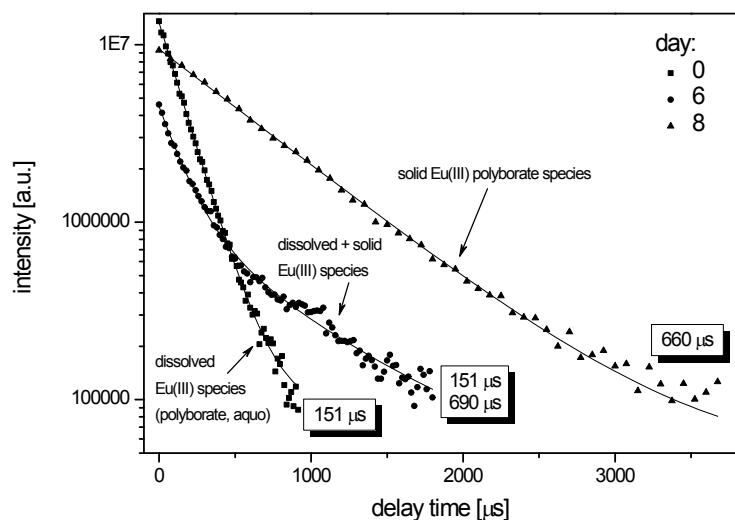


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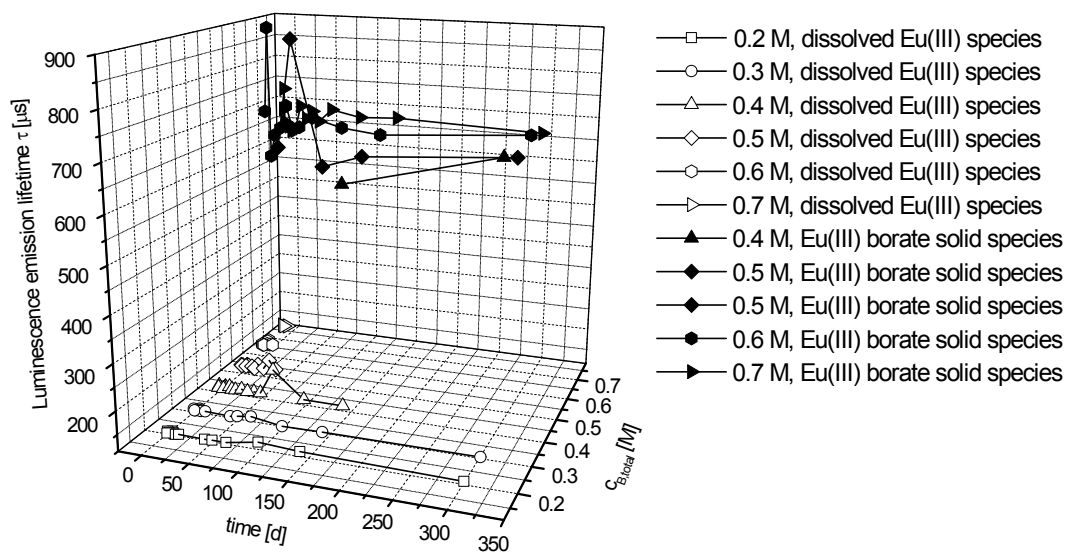


Fig. S2: Progress of the luminescence emission lifetime τ of europium during the Eu(III) borate solid formation for solutions containing $3 \cdot 10^{-5}$ M Eu(III), $c_{B, \text{total}} = 0.2$ M ... 0.7 M, $I = 0.1$ M, pH 6

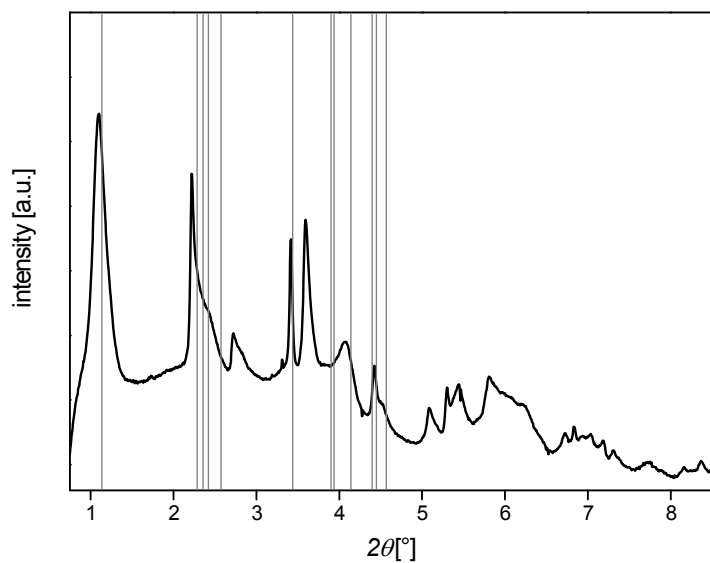


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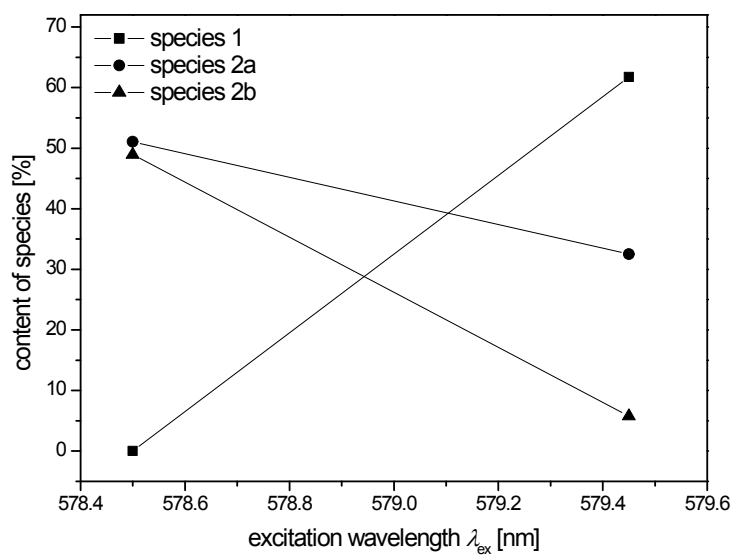


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ⁱ S. Menchetti, C. Sabelli, A. Stoppioni, and R. Trosti-Ferroni, *Neues Jahrb. Mineral. Abh.*, 1983, **148**, 163–180.