Separation of terbium as a first step towards high purity terbium-161 for medical applications

Supporting Information

Meryem Özge Arman, *^{a,b} Angelo Mullaliu, ^a Bart Geboes,^b Karen Van Hecke,^b Ganghadar Das,^c Giuliana Aquilanti,^c Koen Binnemans^a and Thomas Cardinaels^{a,b}

a KU Leuven, Department of Chemistry, Celestijnenlaan 200F, Bus 2402, B-3001 Heverlee, Belgium

b Belgian Nuclear Research Centre (SCK CEN), Institute for Nuclear Materials Science, Boeretang 200, B-2400 Mol, Belgium

c Elettra Sinctrotrone Trieste, 34149 Basovizza, Trieste, Italy



Fig. S1. UV-Vis absorbance at the wavelength of 365 nm, after 1:1 (v:v) dilution of Tb⁴⁺ at 10, 20, 30 and 60 min after the dilution.



Fig. S2. UV-Vis absorbance at the wavelength of 365 nm, after 1:2 (v:v) dilution of Tb⁴⁺ at 10, 20, 30 and 60 min after the dilution.



Fig. S3. Normalized XANES spectra of references Tb_4O_7 for Tb^{4+} , and 0.07 mol.L⁻¹ Tb^{3+} in 4 mol.L⁻¹ K_2CO_3 before electrolysis.



Fig. S4. Linear combination fitting of 0.07 mol.L⁻¹ Tb³⁺/Tb⁴⁺ in 4 mol.L⁻¹ K₂CO₃ solution after electrolysis at +1.3 V vs. Ag/AgCl for 24h, using Tb₄O₇ and 0.07 mol.L⁻¹ Tb³⁺ in 4 mol.L⁻¹ K₂CO₃ as references.