



HOKKAIDO UNIVERSITY

Title	Thermo-stable Lanthanoid Coordination Nanoparticles Composed of Luminescent Eu(III) Complexes and Organic Joint Ligands Using Micelle Techniques in Water
Author(s)	Hiromitsu, Onodera; Nakanishi, Takayuki; Fushimi, Koji et al.
Citation	Bulletin of the Chemical Society of Japan, 87(12), 1386-1390 https://doi.org/10.1246/bcsj.20140202
Issue Date	2014-12-15
Doc URL	https://hdl.handle.net/2115/57840
Type	journal article
File Information	hasegawa-support.pdf



Supporting Information

Thermo-stable lanthanide coordination nanoparticles composed of luminescent Eu(III) complexes and organic joint ligands using micelle techniques in water

Onodera Hiromitsu, Takayuki Nakanishi, Koji Fushimi, and
Yasuchika Hasegawa*

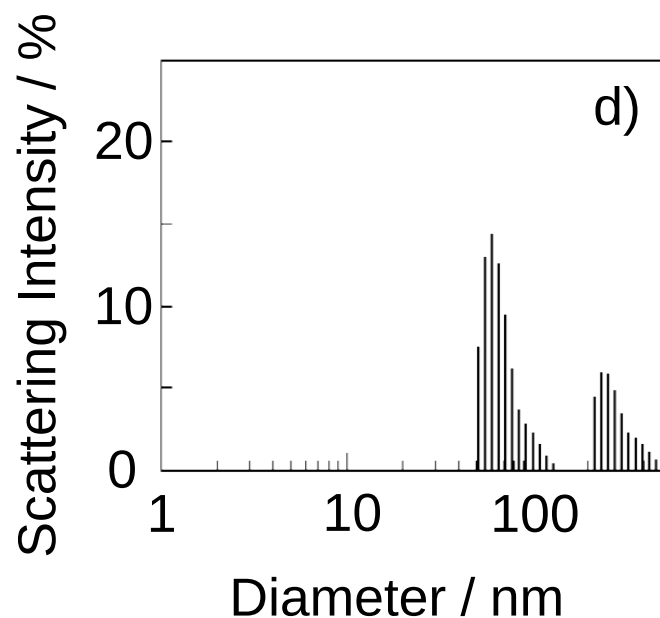
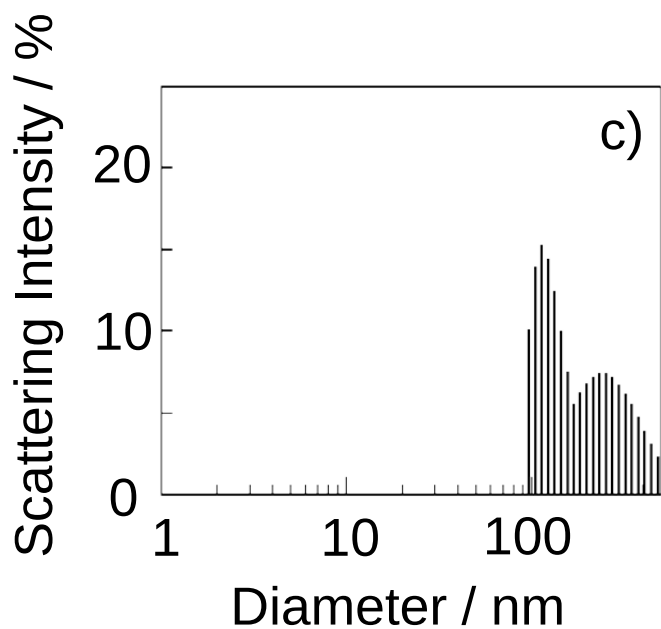
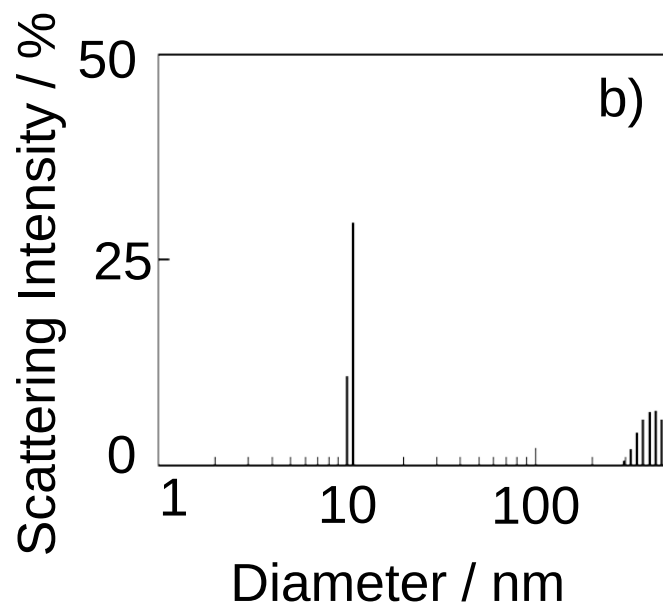
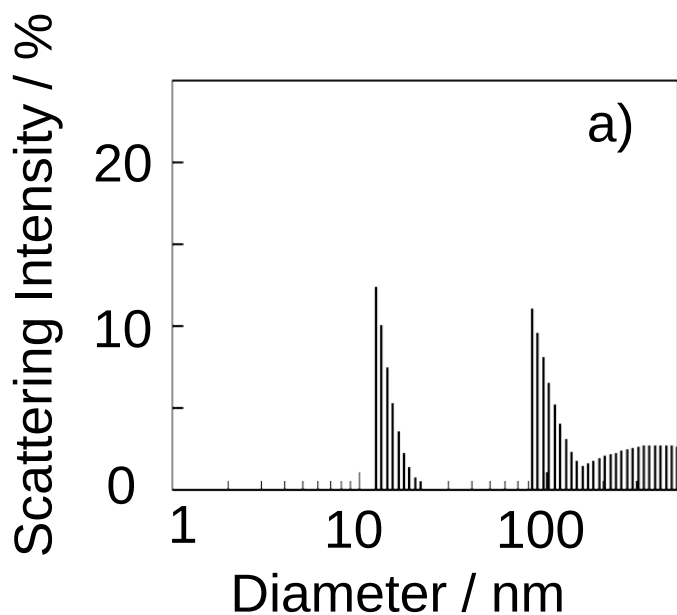


Figure S1. Scattering intensity of a) micelle **A**, b) micelle **B**, c) mixed micelle **C**, and d) washed lanthanide coordination nanoparticles using DLS measurements.

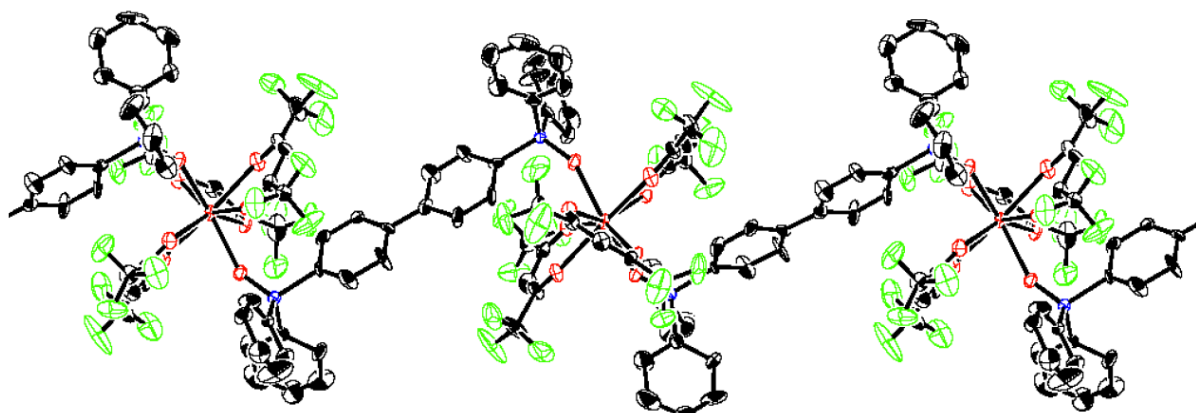


Figure S2. ORTEP drawing of $[\text{Eu}(\text{hfa})_3(\text{dpbb})]_n$, showing 50% probability displacement ellipsoids.

Table S1. Crystal data of $[\text{Eu}(\text{hfa})_3(\text{dpbb})]_n$.

	$[\text{Eu}(\text{hfa})_3(\text{dpbb})]_n$
chemical formula	$\text{C}_{52}\text{H}_{31}\text{F}_{18}\text{O}_8\text{P}_2\text{Eu}$
formula weight	1339.69
crystal color, habit	colorless, prism
crystal system	Monoclinic
Space group	$C2/c$ (#15)
$a / \text{\AA}$	23.477(4)
$b / \text{\AA}$	13.367(2)
$c / \text{\AA}$	17.168(3)
α / deg	
β / deg	97.5749(8)
γ / deg	
$V / \text{\AA}^3$	5340.5(16)
Z	4
$d_{\text{calc}} / \text{g cm}^{-3}$	1.666
$T / ^\circ\text{C}$	-123 ± 1
$\mu (\text{Mo K}\alpha) / \text{cm}^{-1}$	13.472
max $2\theta / \text{deg}$	55.0
no. of measured reflections	21091
no. of unique reflections	6099
$R (I > 2\sigma(I))^{[a]}$	0.0266
$R_w (I > 2\sigma(I))^{[b]}$	0.0668

[a] $R = \sum ||F_o| - |F_c|| / \sum |F_o|$. [b] $R_w = [(\sum w (|F_o| - |F_c|)^2 / \sum w F_o^2)]^{1/2}$.

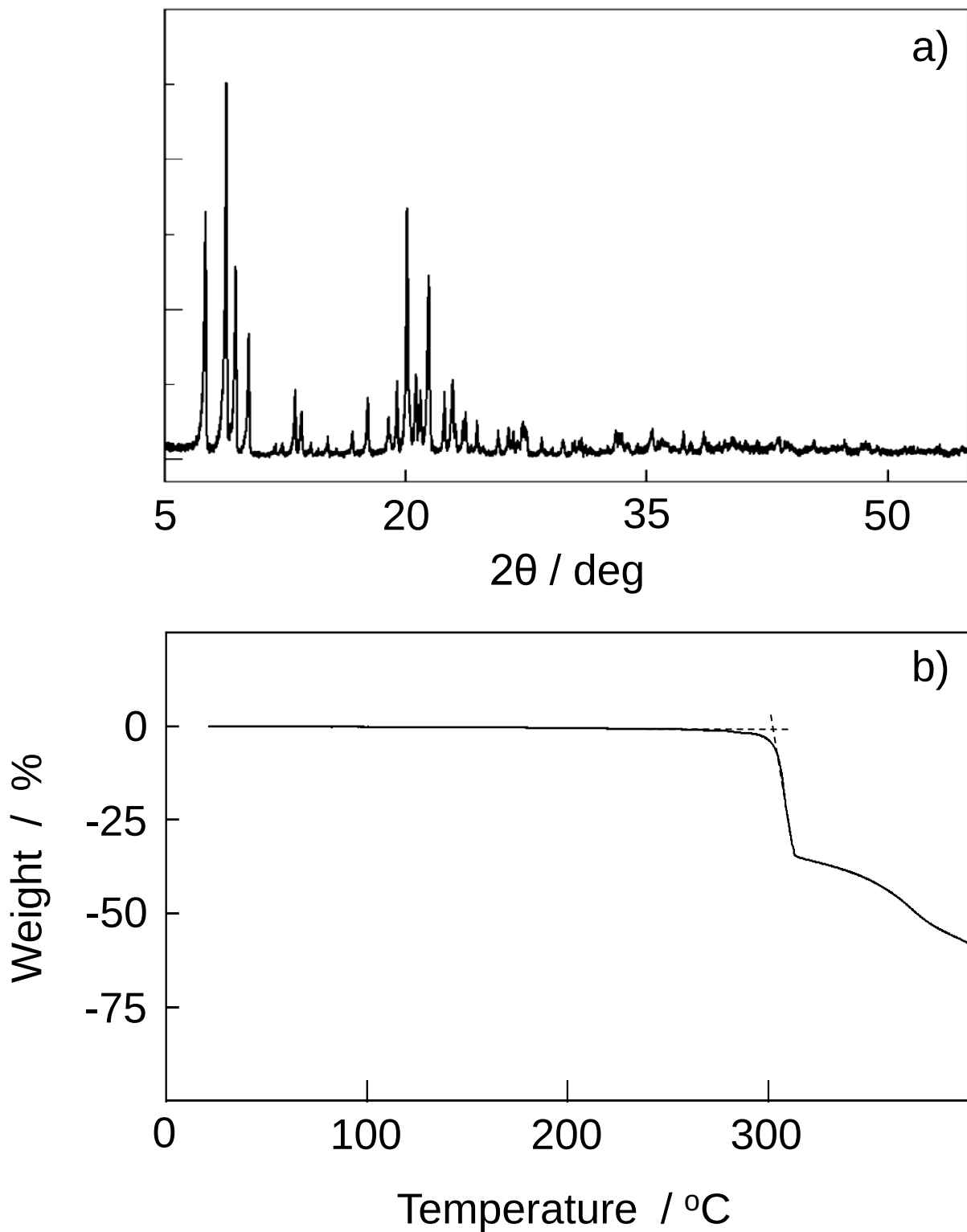


Figure S3. a) XRD patterns of bulk powders. b) TGA curves of bulk powders composed of $[\text{Eu}(\text{hfa})_3(\text{dpbp})]_n$ in argon atmosphere at a heating rate of $1\text{ }^\circ\text{C min}^{-1}$.

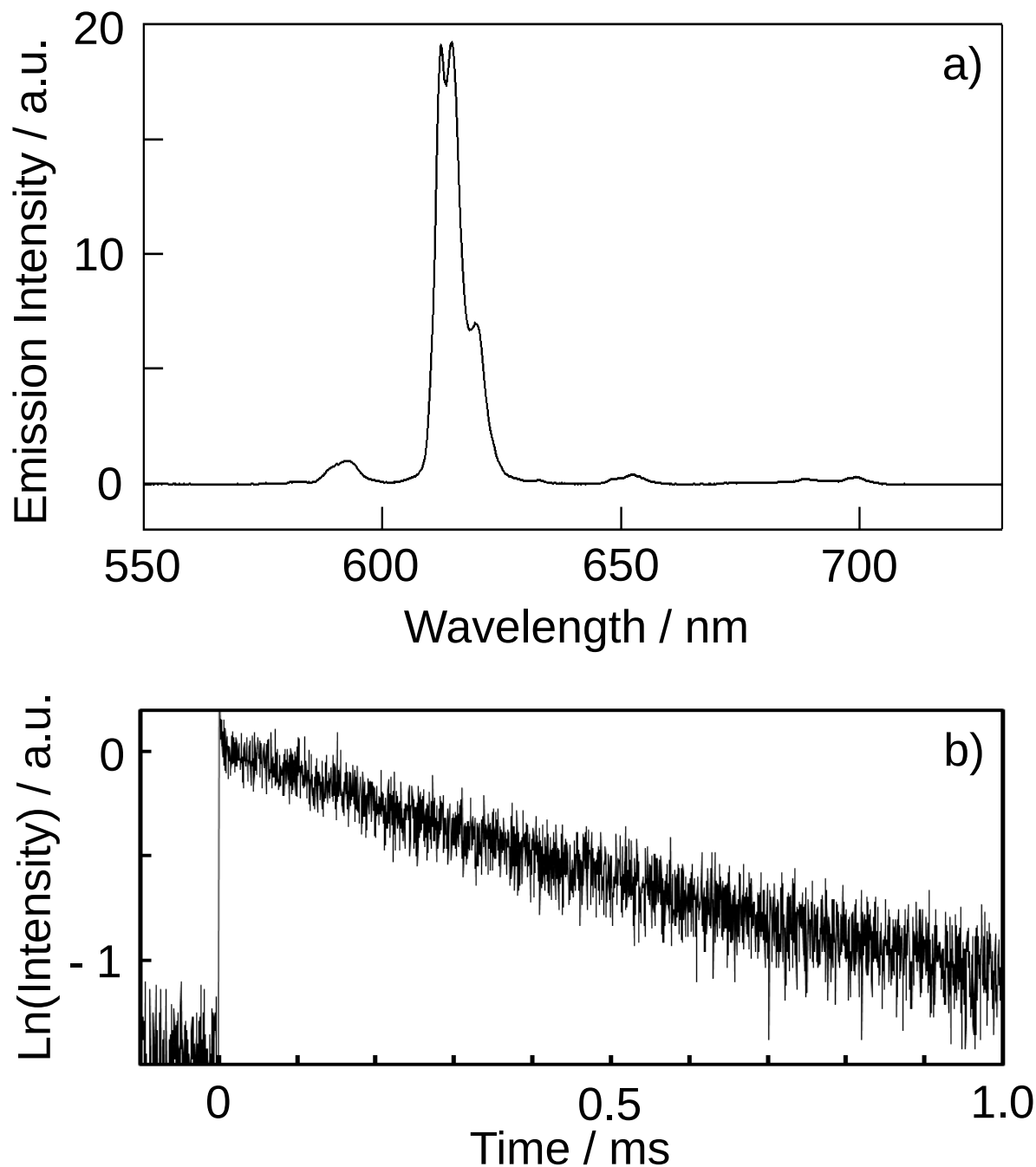


Figure S4. a) Emission spectra of bulk powders composed of $[\text{Eu}(\text{hfa})_3(\text{dpbp})]_n$ in acetone- d_6 at room temperature. Excited at 380 nm. b) Emission decay of bulk powders composed of $[\text{Eu}(\text{hfa})_3(\text{dpbp})]_n$ in acetone- d_6 at room temperature excited at 355 nm (third harmonic of a Q-switched Nd:YAG laser: fwhm = 5 ns, $\lambda = 1064$ nm).