Supporting Information

Optimisation of Amphiphilic-Polymer Coatings for Improved Chemical Stability of $NaYF_4$-ased Upconverting Nanoparticles

Tina Černič[1,2], Monika Koren[3,4], Boris Majaron[3,4], Maja Ponikvar-Svet[5], Darja Lisjak[1*]

[1] Jožef Stefan Institute, Department for Materials Synthesis, Ljubljana, Slovenia
[2] Jožef Stefan International Postgraduate School, Ljubljana, Slovenia
[3] Jožef Stefan Institute, Department of Complex Matter, Ljubljana, Slovenia
[4] Faculty of Physics and Mathematics, University of Ljubljana, Slovenia
[5] Jožef Stefan Institute, Department of Inorganic Chemistry and Technology, Ljubljana, Slovenia

Calculations of the molar fraction of the released fluoride (X_F)

$$X_F = \frac{C_F M_{NP}}{40\, C_{susp}\, M_F} \qquad \text{(Eq. S1)}$$

Here, C_F denotes the concentration of dissolved fluoride in µg/ml, C_{susp} is the total mass concentration of particles in the suspension in mg/ml, and M_{NP}, M_F are the molecular mass of the NPs with the nominal composition, atomic mass of F, respectively.

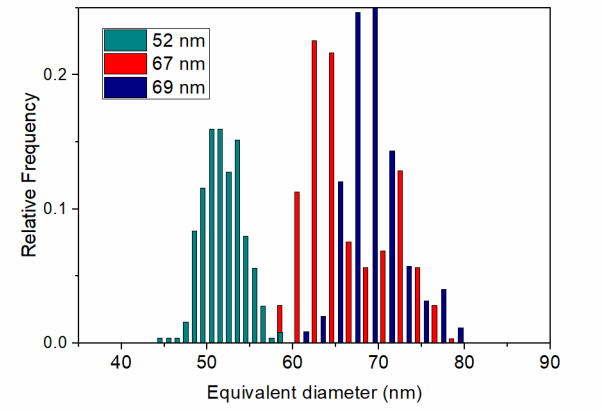

Figure S1. Size-distribution of the as-synthesized UCNPs from three different batches used in this study. The average sizes of the specific batch were 52 ± 2 nm, 67 ± 5 nm and 69 ± 3 nm.

* Corresponding author: darja.lisjak@ijs.si

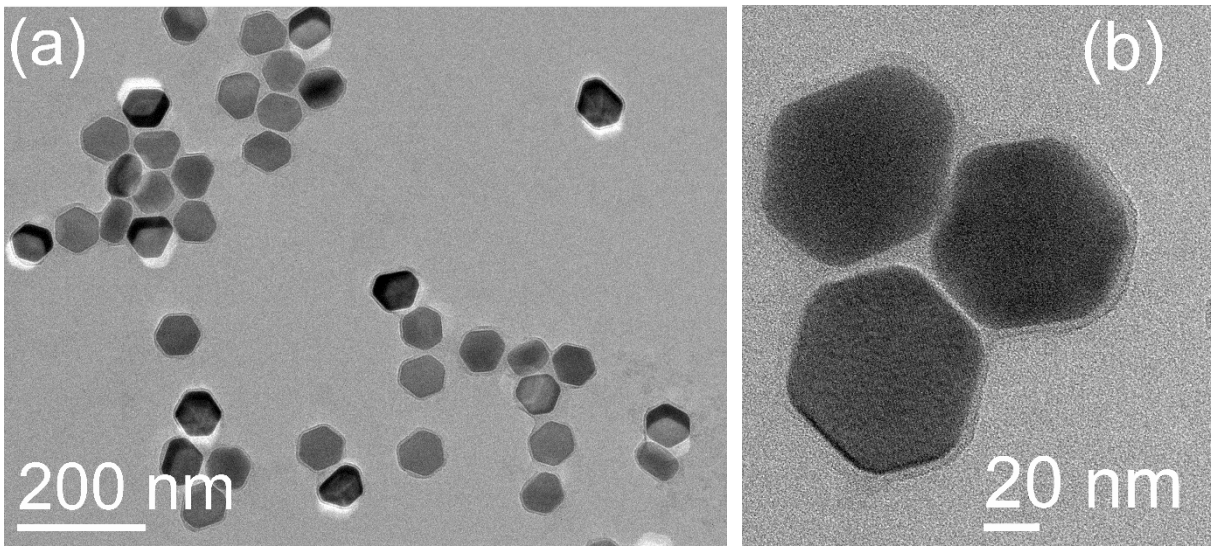

Figure S2. TEM images of the coated UCNPs @PB-*150*: individual NPs (a) with an example of an NPs triplet, apparently glued together with an amorphous coating (b).

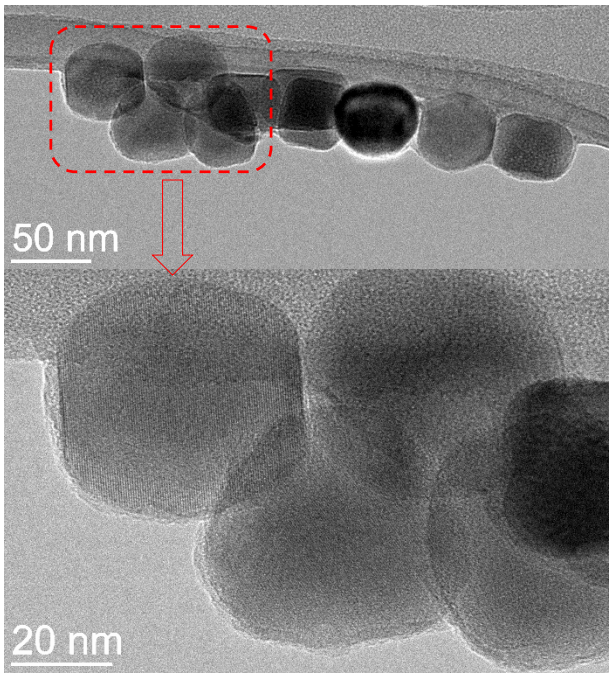

Figure S3. TEM images of the UCNPs@PB-*105* from 1-month old dispersions in PBS. The image at the bottom presents an enlarged section from the top image.