Electronic Supplementary Material (ESI) for Nanoscale

Core-shell designs of photoluminescent nanodiamonds with porous silica coatings for bioimaging and drug delivery II: Application

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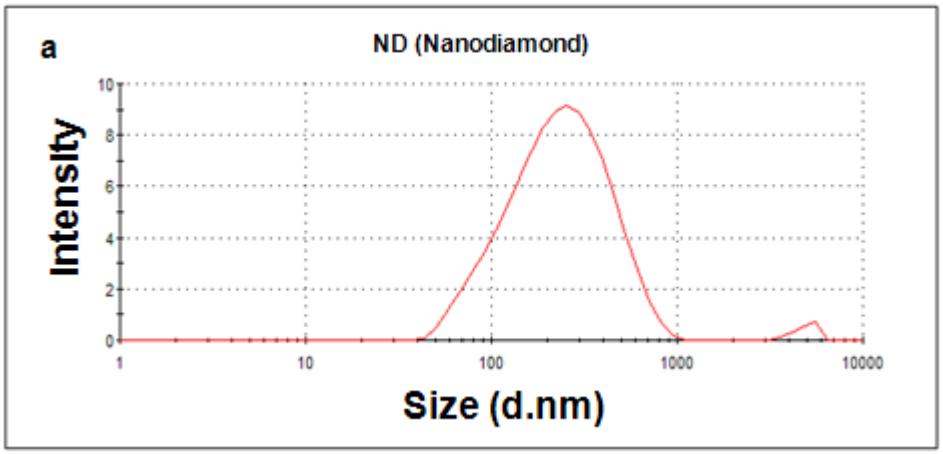
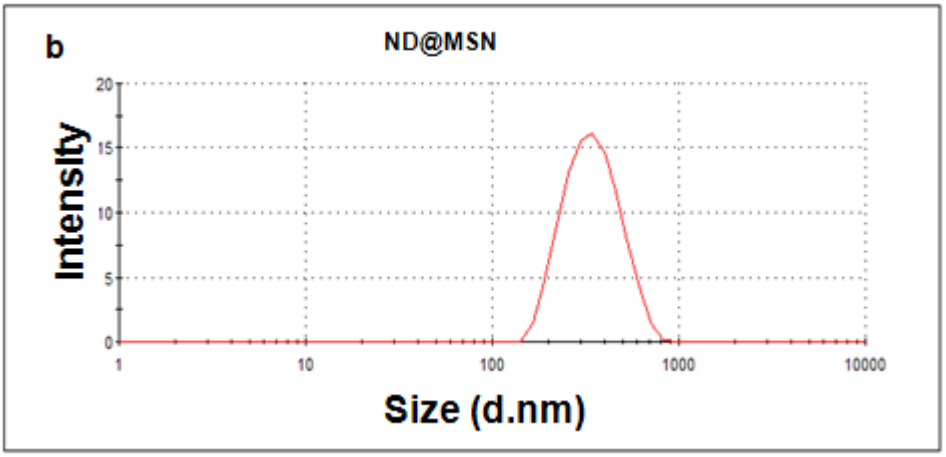
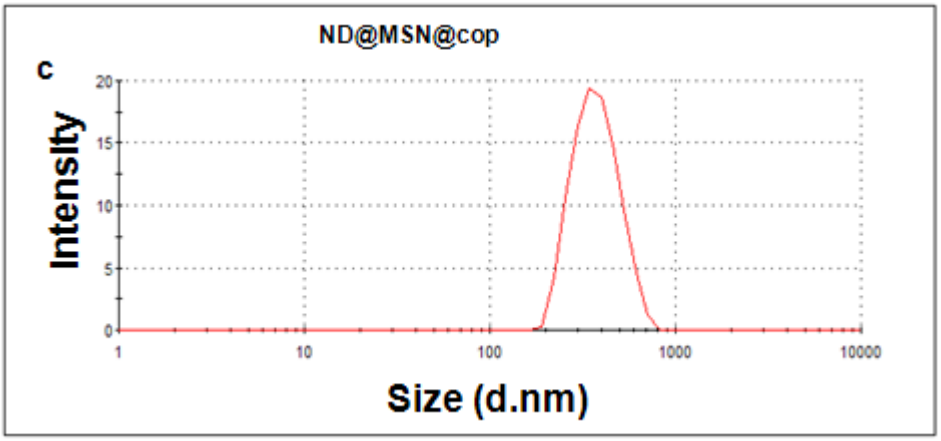
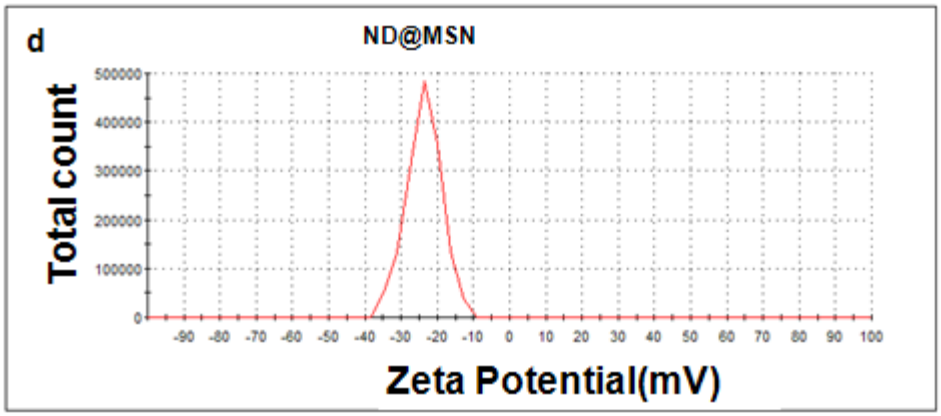
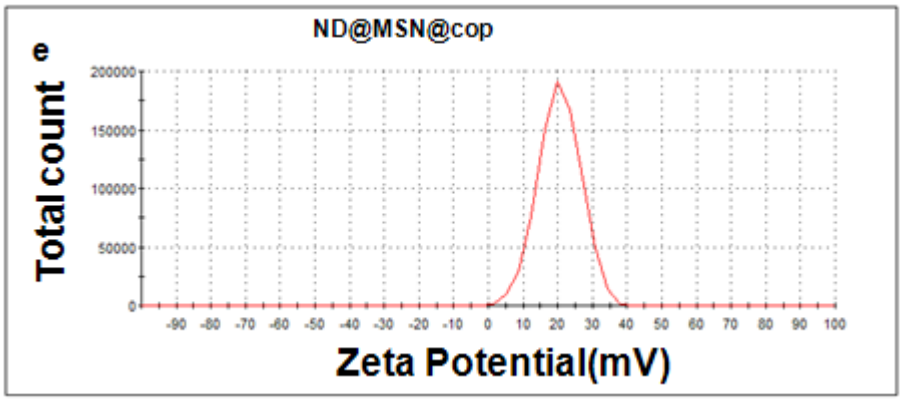
Supplementary Information



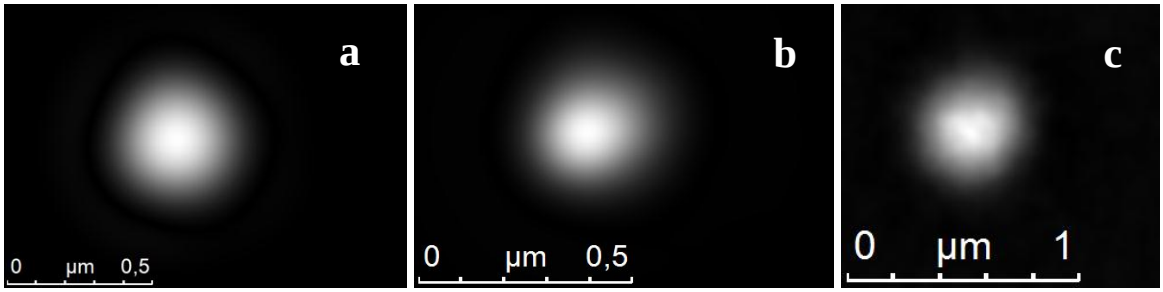




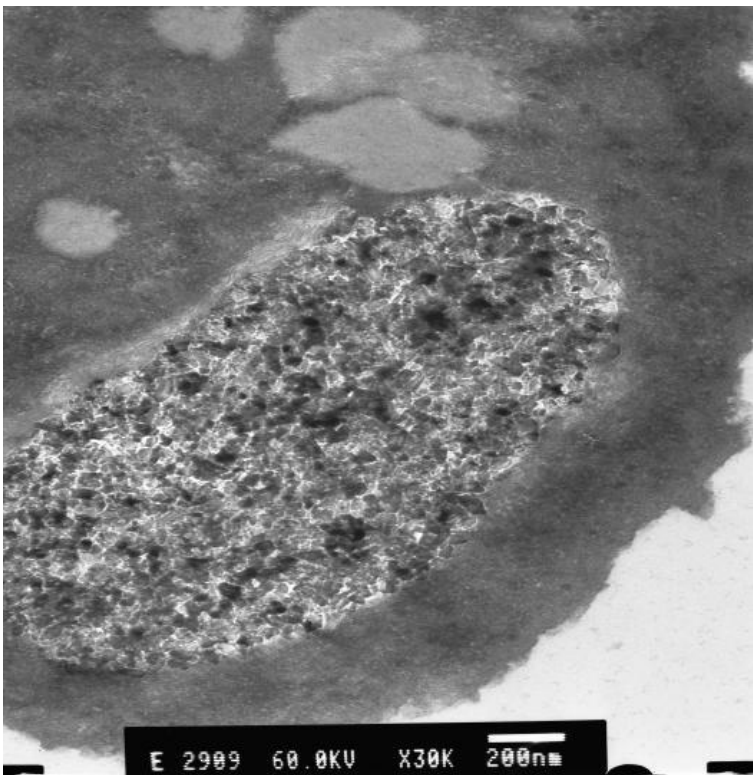




Supplementary Figure 1. Dynamic light scattering (DLS) measurements of pure ND (a) in dd H_2O as well as composites ND@MSN (b) and ND@MSN@cop (c) in HEPES buffer (25 mM, pH 7.2). Zeta potential of ND@MSN before (d) and after (e) copolymer coating, shifting it from negative to positive upon copolymer adsorption.



Supplementary Figure 2. Optical size measurements from PL-signal of individual particles. Confocal image (a) and STED image (b) of an individual nanodiamond are shown. Measured FWHM diameter of the nanodiamond measured with a confocal was 320 nm and with STED 205 nm. From a STED image of a ND@MSN (c), we measured a FWHM diameter of 340 nm. Data was processed with background reduction and signal energy based deconvolution algorithm using Gaussian PSF (FWHM 230 nm) for confocal data and Lorentzian PSF (FWHM 60 nm).



Supplementary Figure 3. TEM image showing the subcellular localization of pure nanodiamonds into multi-vesicular bodies. HeLa-cells were incubated with uncoated NDs (10 µg/ml) for 48 h. NDs were tightly aggregated inside late-endosomal type vesicular bodies. Smaller empty vesicles can be seen in the top half of the figure. Scale bar 200 nm.