

*Supplementary*

**Preparation of barium-hexaferrite/gold Janus nanoplatelets using the Pickering emulsion method**

Jelena Papan<sup>a,b,\*</sup>, Patricija Hribar Boštjančič<sup>a,c</sup>, Alenka Mertelja, Darja Lisjak<sup>a</sup>

<sup>a</sup> *Jožef Stefan Institute, Jamova cesta 39, Ljubljana, Slovenia*

<sup>b</sup> *Vinča Institute of Nuclear Sciences – National Institute of the Republic of Serbia, University of Belgrade, P.O. Box 522, Belgrade, 11001 Serbia*

<sup>c</sup> *Jožef Stefan International Postgraduate School, Jamova cesta 39, Ljubljana, Slovenia*

*\*Corresponding author: jelena.papan@ijs.si*

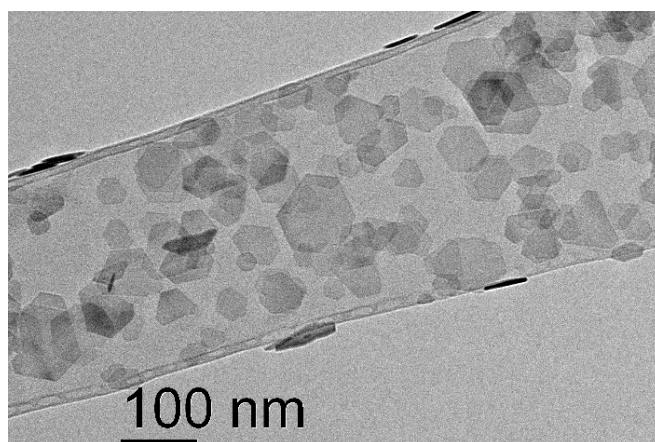


Figure S1. TEM image of BHF NPLs.

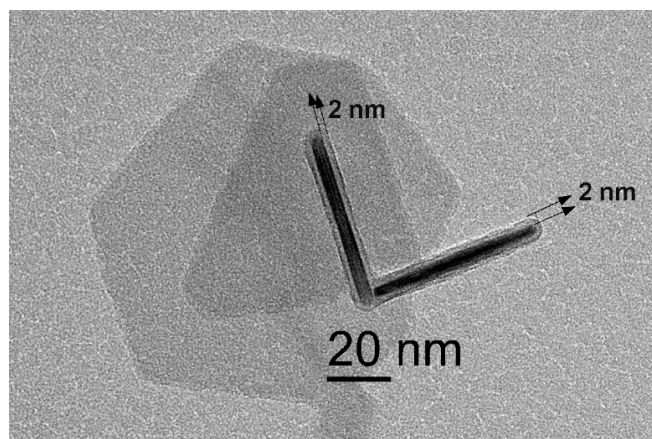


Figure S2. TEM image of NPLs-Si.

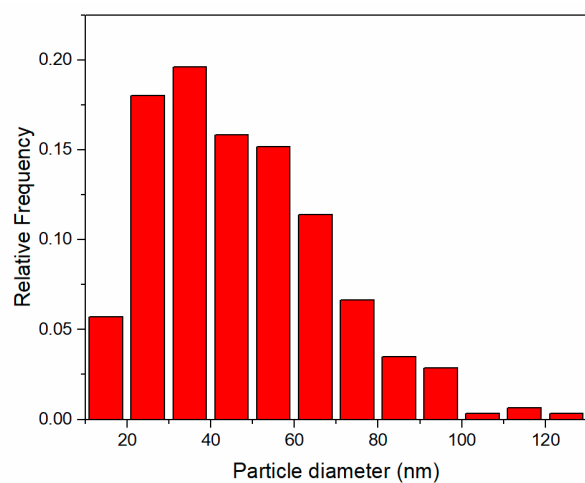


Figure S3. Particle size distribution of BHF NPLs (N total = 316, Particle size  $47 \pm 21$  nm).

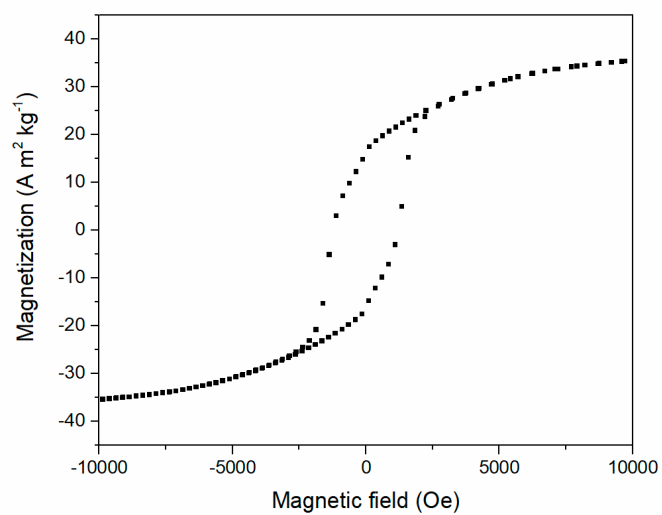


Figure S4. Magnetic hysteresis of BHF NPLs.

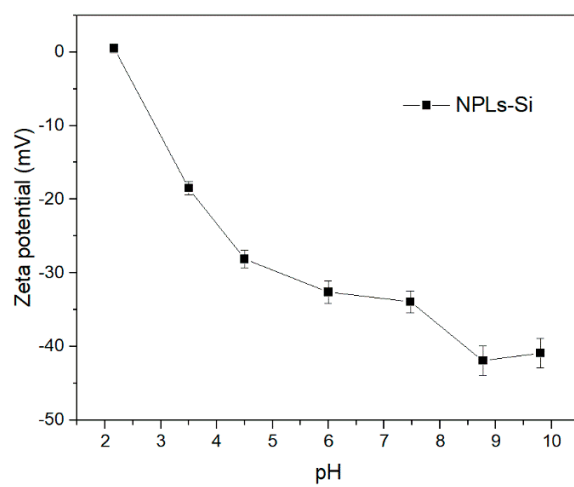


Figure S5. Zeta potential vs. pH of negatively charged NPLs-Si.

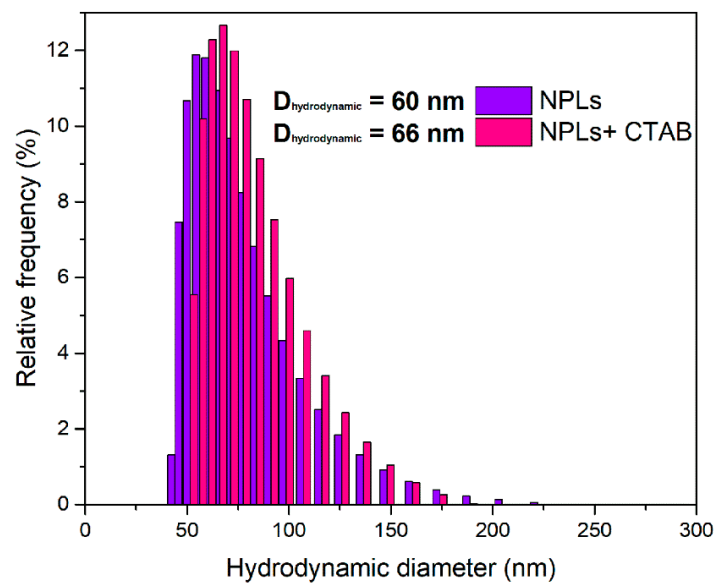


Figure S6. The number-weighted distributions of the hydrodynamic size of NPLs-Si in water (purple) and NPLs-Si in 10<sup>-4</sup> % CTAB aqueous solution (as used in Sample 7) (pink).

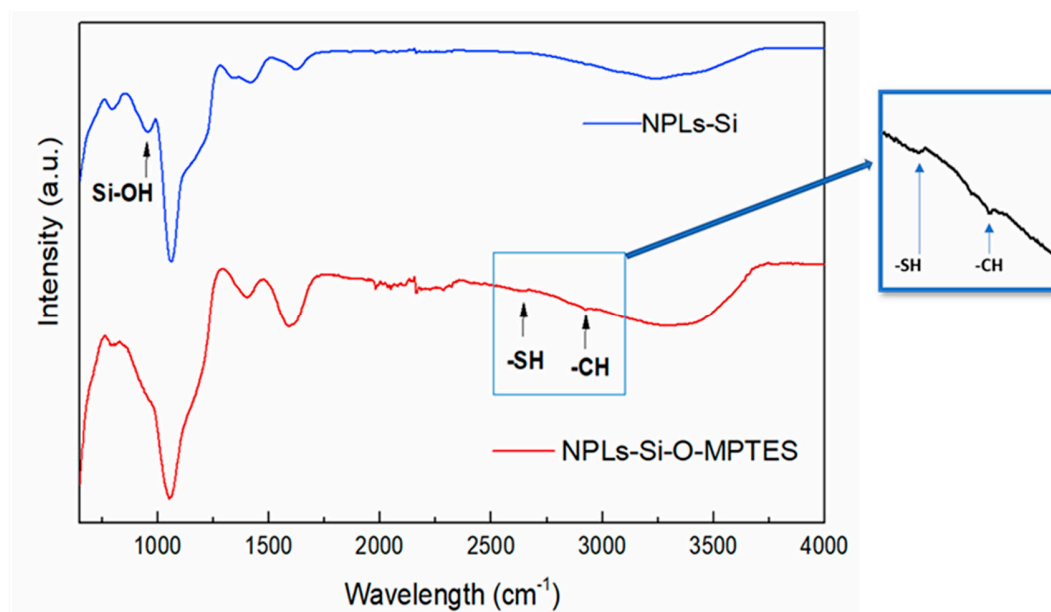


Figure S7. IR spectra of NPLS-Si and NPLs-Si coated with mercaptosilane.

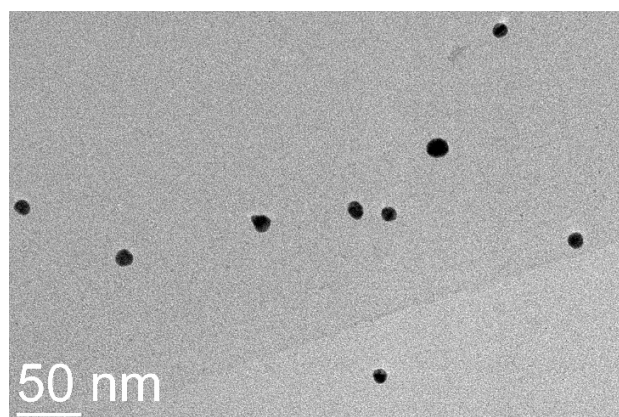


Figure S8. TEM image of gold nanospheres.

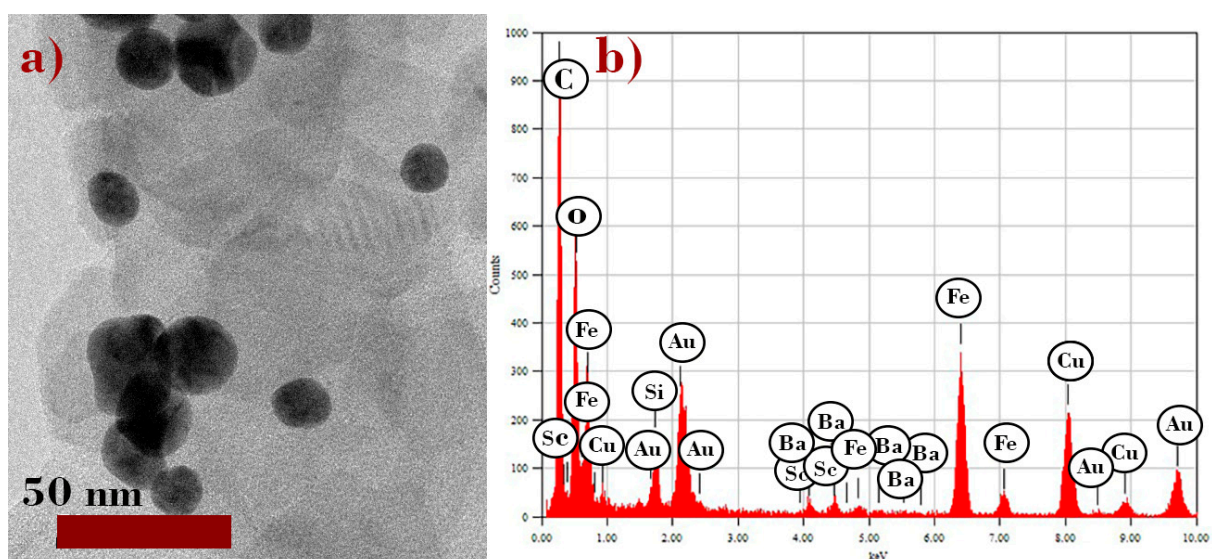


Figure S9. (a) TEM image of the Janus NPLs and (b) EDS analysis of area shown in (a). Cu and C in the EDXS spectrum originate from the sample support grid.