Electronic Supplementary Material (ESI) for Dalton Transactions.

Supporting material

Size-dependent spin switching in robust Fe-triazole@SiO_2 spin-crossover nanoparticles with ultrathin shell

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Dynamic Light scattering (DLS) measurements

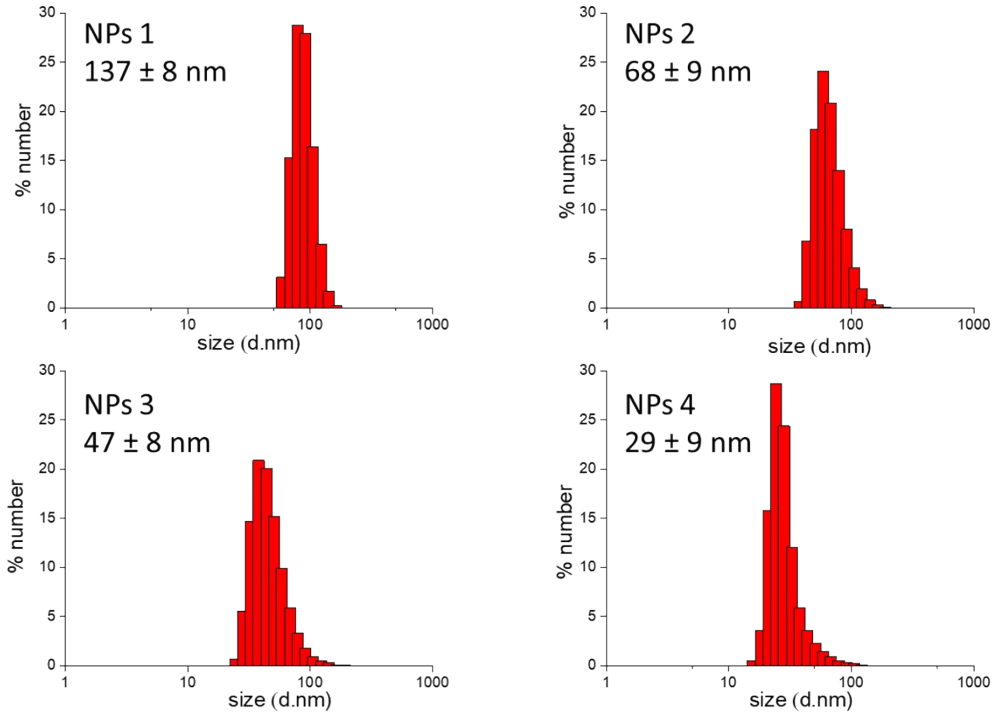


Figure S1. Number-based particle size distribution for the stable aqueous suspensions of NPs **1-4** obtained by DLS analysis.

Chemical stability in water

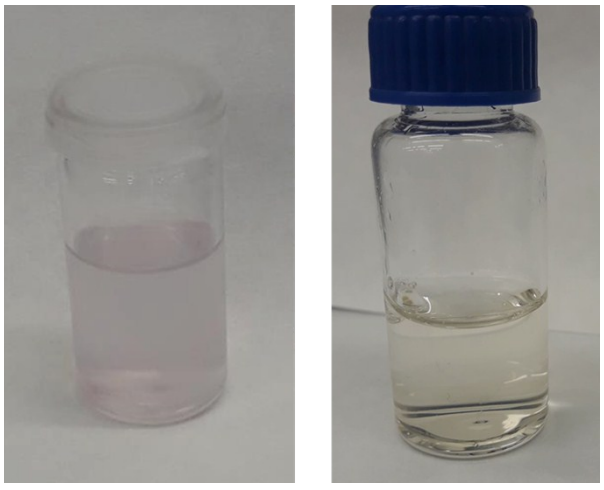


Figure S2. Images of a stable pink suspension of $[Fe(Htrz)_2(trz)](BF_4)$@SiO_2 NPs **2** in EtOH after 3 days (left) and the same suspension containing $[Fe(Htrz)_2(trz)](BF_4)$ NPs coated with dioctyl sulfosuccinate (right) which turned yellow due to chemical degradation.

X-Ray Powder diffraction (XRPD) analysis

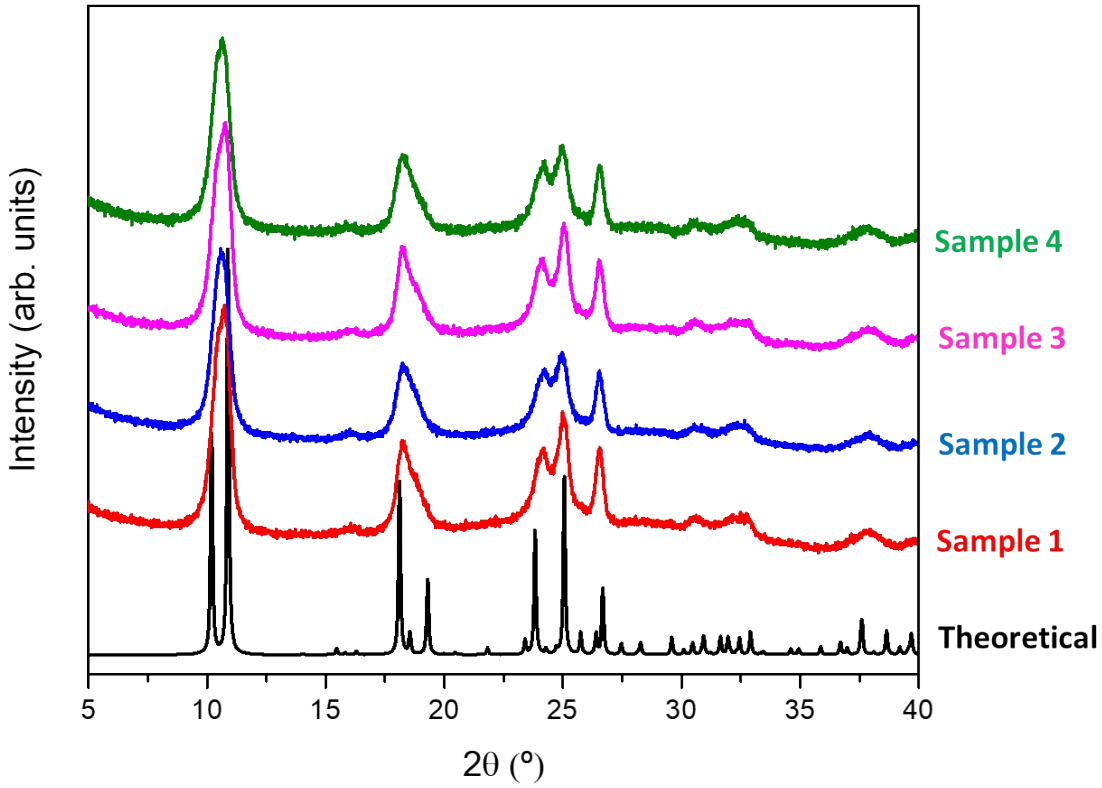
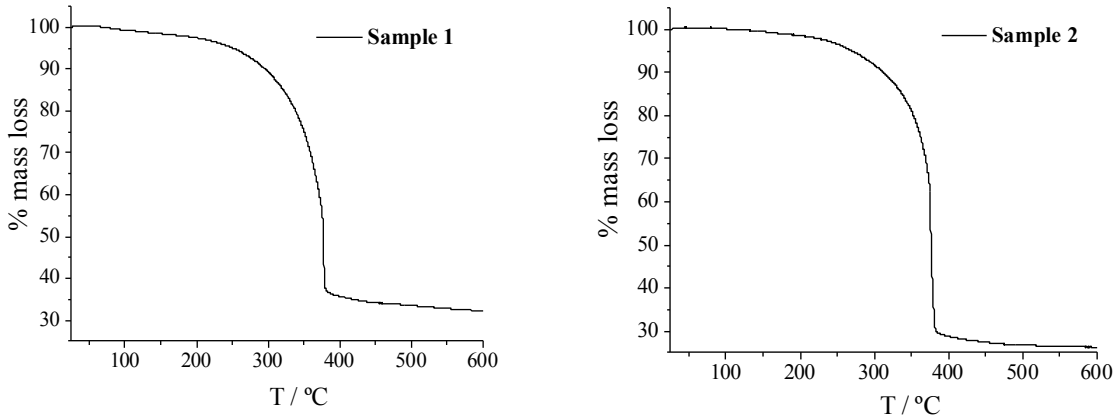


Figure S3. X-ray diffraction patterns of powdered samples **1** – **4** and simulated pattern.

Thermogravimetric Analyses.



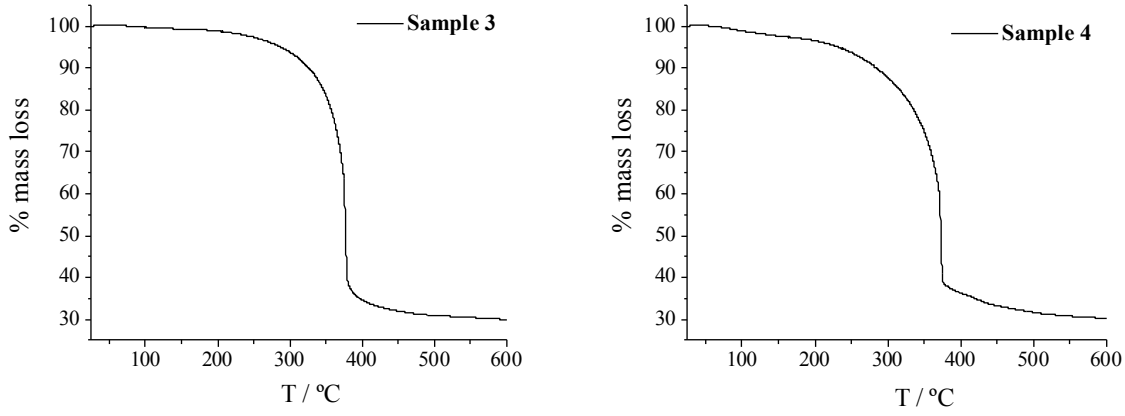


Figure S4. Thermogravimetric analysis of samples **1 – 4**.

Table S1. Chemical composition of samples **1**-**4** as deduced from Elemental Analyses and ICP.

Sample		% N	% C	% H	Molecular formulae
1	theoretical	32.1	18.4	2.1	$[Fe(Htrz)_2(trz)](BF_4)@(SiO_2)_{0.7}$
	experimental	29.1	17.2	2.2	
2	theoretical	31.6	18.1	2.0	$[Fe(Htrz)_2(trz)](BF_4)@(SiO_2)_{0.8}$
	experimental	32.7	18.5	2.6	
3	theoretical	31.6	18.1	2.0	$[Fe(Htrz)_2(trz)](BF_4)@(SiO_2)_{0.8}$
	experimental	31.8	18.7	2.7	
4	theoretical	30.4	17.4	2.0	$[Fe(Htrz)_2(trz)](BF_4)@(SiO_2)_{1.1}$
	experimental	31.0	18.3	2.6	

High-Resolution Transmission Electronic Microscopy (TEM)

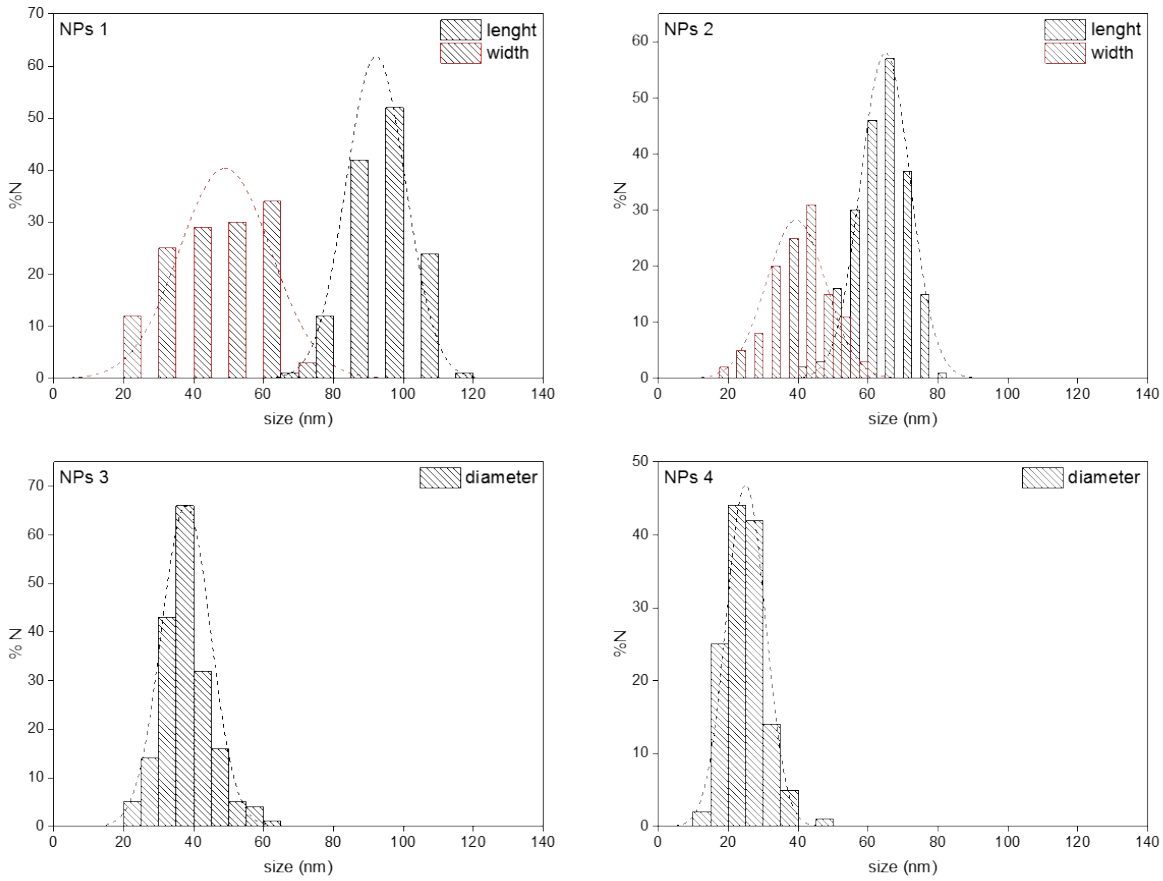


Figure S5. Number-based particle size distribution for the suspension of NPs **1-4** drop casted on a TEM grid and manually counted (table 1).

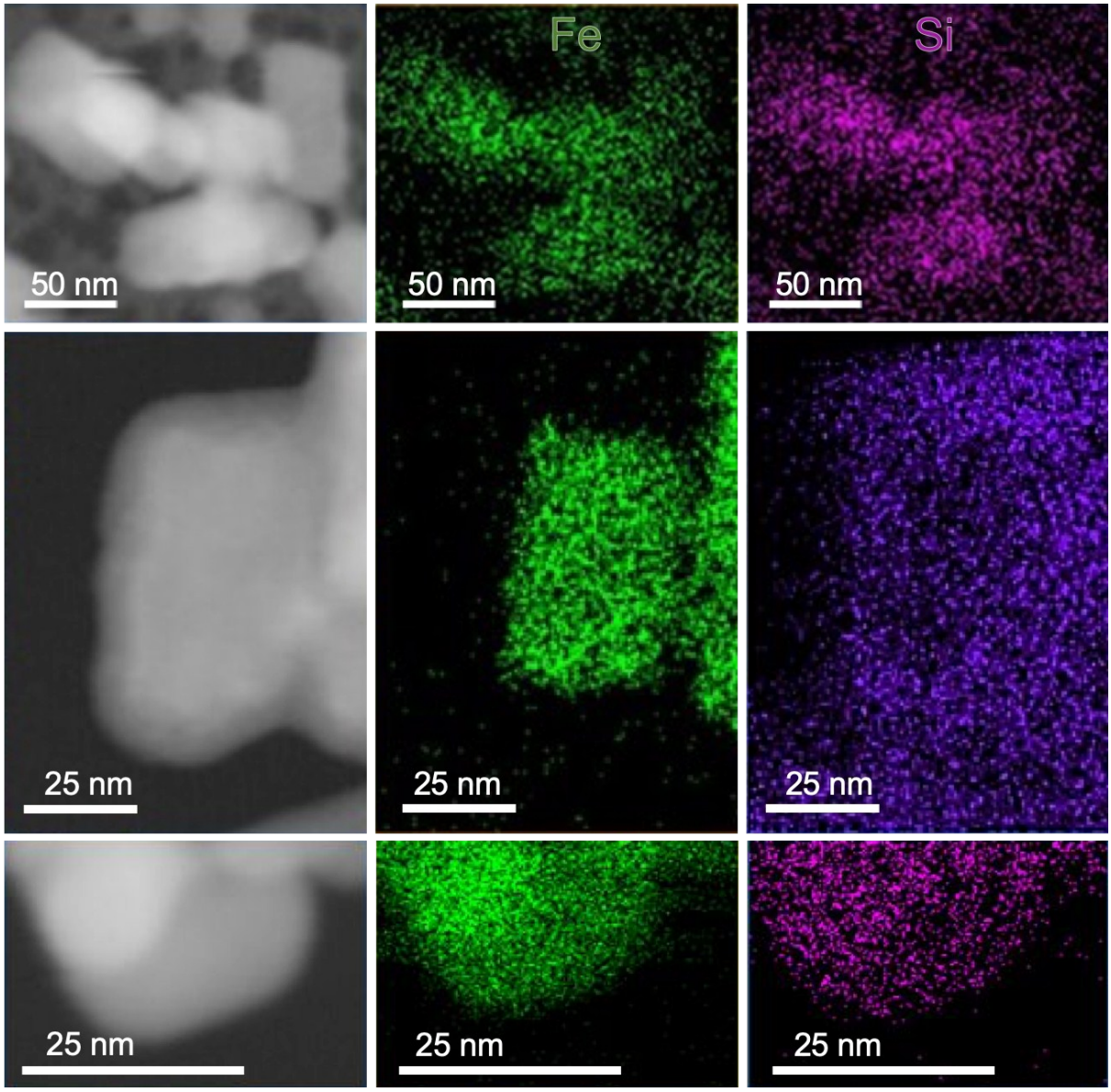


Figure S6. STEM elemental mapping of NPs **1** (top), **2** (middle) and **4** (down) displaying sizes of 50 nm and 25 nm, respectively. Green points represent iron, and purple silicium. Note that C and Si contamination was observed during mapping, which, accompanied by a continuous motion of the atoms upon beam exposure, hinders a practical shell thickness interpretation.