Electronic Supplementary Material (ESI) for RSC Advances.

A facile route for preparation of monodisperse nanoparticles of one-dimensional Fe(II)-4-amino-1, 2, 4-triazole coordination polymer with hysteretic spin-crossover near room temperature

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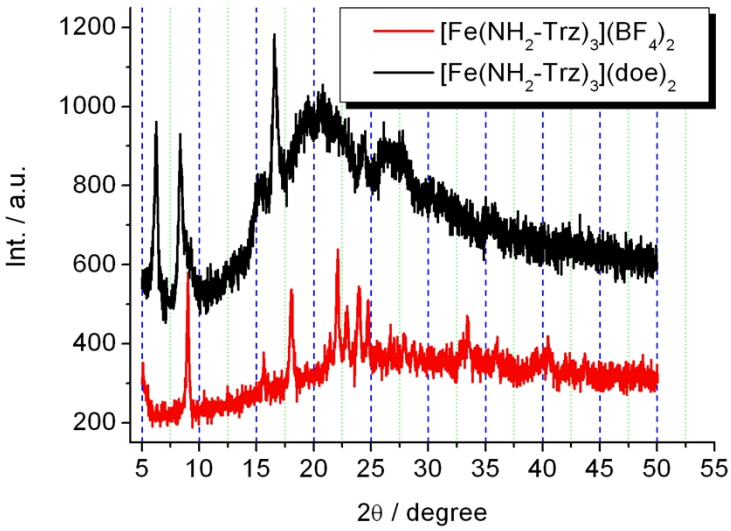

Figure S1 PXRD patterns of $[Fe(NH_2\text{-}Trz)_3](doe)_2$ and $[Fe(NH_2\text{-}Trz)_3](BF_4)_2$ at ambient temperature.

Powder X-ray diffraction (PXRD) data were collected on a Bruker D8 Advance powder diffractometer, operating at 40 kV and 40 mA using Cu K_α radiation with λ = 1.5418 Å. Samples were scanned from 2θ = 5–50° with 0.02°/step and 1.2 s/step.

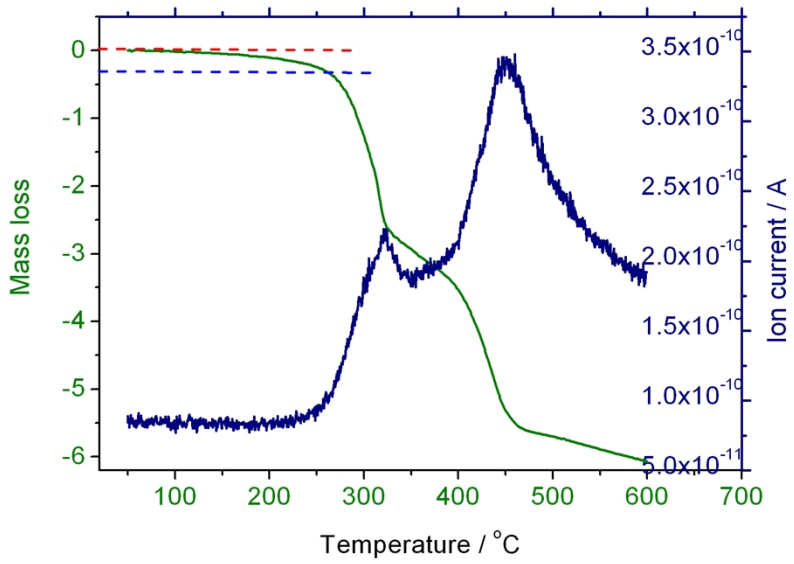

Figure S2 TG and ion current plots of $[Fe(NH_2\text{-}Trz)_3](doe)_2$ (compound **1**) obtained from TGA-Mass measurement.

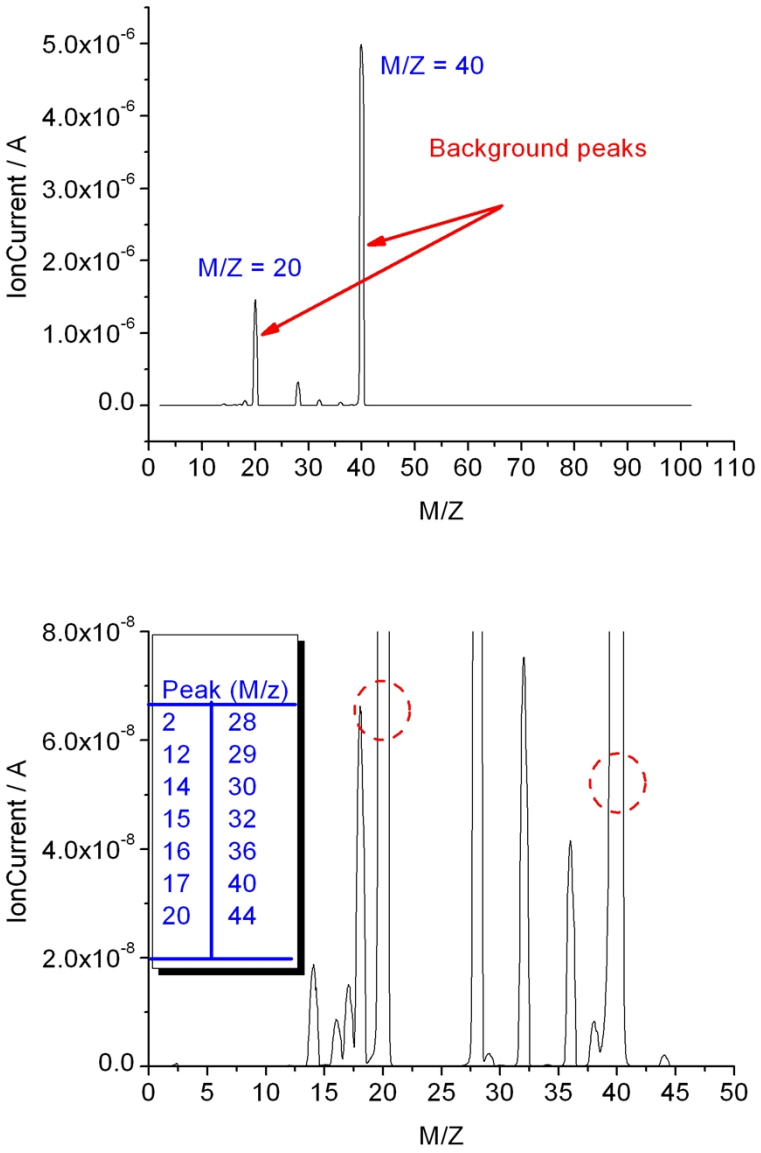

Figure S3 TGA-MASS spectra where M/Z = 20 and 40 arising from the background and others from the sample. M/Z = 32 attributed from MeOH, M/Z = 15 (CH_3), 17 (OH) and the peak of H_2O at M/Z = 20 is probably overlapped with the background.

Figure S4 Photos of the disc of 1 in LS and HS states (a-f) under three heating-cooling cycles, which show the color of the disc to be almost the same.

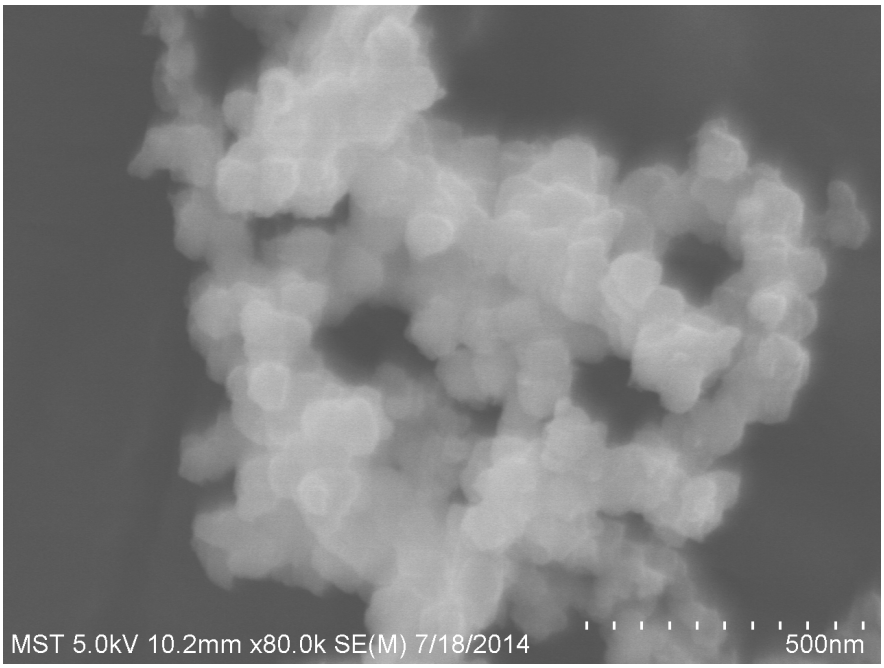

Figure S5a The molar ratios of reactants is $Fe(BF_4)_2 \cdot 6H_2O$: sodium dodecyl sulfonate: 4-amino-1, 2, 4-triazole = 1:3:2 at ambient temperature for 1 h; and the power of ultrasonic wave is 200 W.

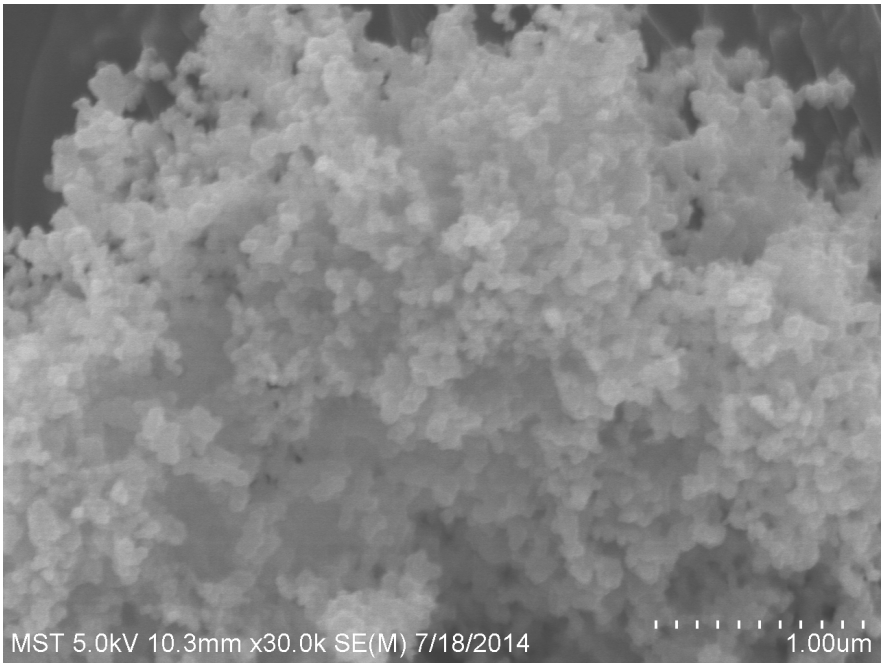

Figure S5b The molar ratios of reactants is $Fe(BF_4)_2 \cdot 6H_2O$: sodium dodecyl sulfonate: 4-amino-1, 2, 4-triazole = 1:3:2 at ambient temperature for 2 h; and the power of ultrasonic wave is 200 W.

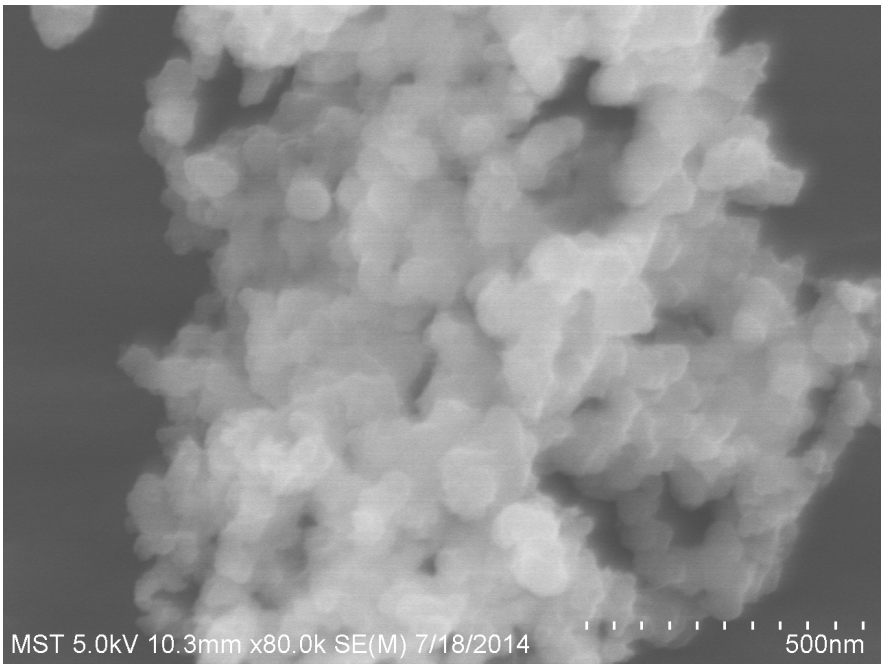

Figure 5c The molar ratios of reactants is $Fe(BF_4)_2 \cdot 6H_2O$: sodium dodecyl sulfonate: 4-amino-1, 2, 4-triazole = 1:3:3 at ambient temperature for 2 h; and the power of ultrasonic wave is 200 W.

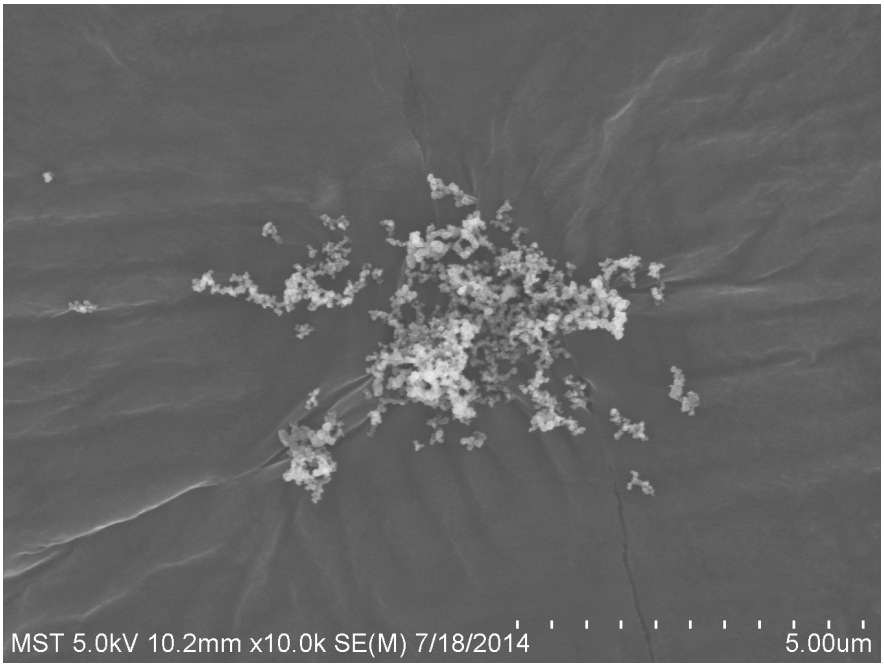

Figure S5d The molar ratios of reactants is $Fe(BF_4)_2 \cdot 6H_2O$: sodium dodecyl sulfonate: 4-amino-1, 2, 4-triazole = 1:3:4 at ambient temperature for 2 h; and the power of ultrasonic wave is 200 W.

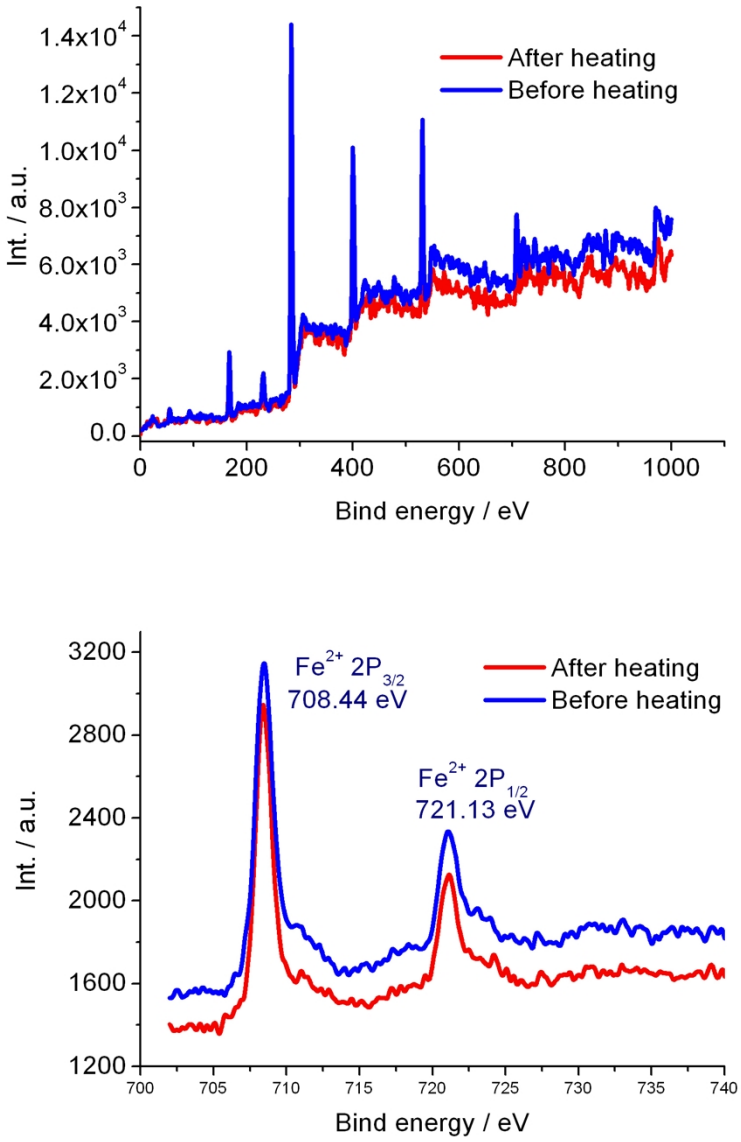

Figure S6 XPS spectra of **1** (the blue line represents the sample which had not be heated, and the red line is the sample which was heated/cooled in LS and HS states for three cycles).