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$_2$-Trz)$_3$](doe)$_2$ and [Fe(NH$_2$-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$_\alpha$ radiation with $\lambda = 1.5418$ Å. Samples were scanned from $\theta = 5$–50° with 0.02°/step and 1.2 s/step.

Figure S2 TG and ion current plots of [Fe(NH$_2$-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$_2$O 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$_4$)$_2$·6H$_2$O: 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$_4$)$_2$·6H$_2$O: 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$_4$)$_2$·6H$_2$O: 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$_4$)$_2$·6H$_2$O: 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 been heated, and the red line is the sample which was heated/cooled in LS and HS states for three cycles).