**Support information** 

## A thermosensitive Pickering gel emulsion with high oil-water ratio for long-term X-ray imaging and permanent embolization of arteries

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**Fig. S1** TEM images of (a) PNCAA-1, (b) PNCAA-3, (c) *u*PNCAA-2 nanogel.



**Fig. S2** Zeta potential results of the different nanogels described above at 25°C.



**Fig. S3** The TIPE stabilized by PNCAA-2 with different oil/water ratios and different nanogel concentrations, the samples were placed at 25°C for 1 day.



**Fig. S4** The TIPE stabilized by PNCAA-2 with different oil/water ratios and different nanogel concentrations, the samples were placed at 25°C for 3 days.



**Fig. S5** The TIPE stabilized by PNCAA-2 with different oil/water ratios and different nanogel concentrations, the samples were placed at 25°C for 7 days.



**Fig. S6** TIPE (8wt% PNCAA-2) droplets with different oil contents were observed under fluorescence confocal microscopy, ×1000.



**Fig. S7** TIPE (oil/water ratio is 4/6) droplets with different concentrations of PNCAA-2 were observed under fluorescence confocal microscopy, ×1000.



**Fig. S8** Confocal microscope images of TIPE (the oil/water ratio was 4:6, the PNCAA-2 concentration was 8wt%) at (**A**) 25°C and (**B**) 37°C, ×1000.



**Fig. S9** *In vitro* (**a**) CT tomograms and (**b**) 3D reconstructed CT images of TIPE stabilized by different PNCAA-2 concentrations and different oil/water ratios. (**c**) CT values of iodized oil, PNCAA-2 nanogel and water.



**Fig. S10** Coronal CT images of New Zealand white rabbits on the 7, 21, 42 days after embolization by iodized oil, PVA, PNCAA-2, and TIPE, the pink circle marks the position of the kidney after embolization.



**Fig. S11** Bone phase CT images of New Zealand white rabbits on the 7, 21, 42 days after embolization by iodized oil, PVA, PNCAA-2, and TIPE, the pink circle marks the position of the kidney after embolization.