Supplementary Material (ESI) for Soft Matter

Electronic Supplementary Information

Isolated Single-walled Carbon Nanotubes in a Gel as a Molecular Reservoir and Its Application to Controlled Drug Release Triggered by Near-IR Laser Irradiation

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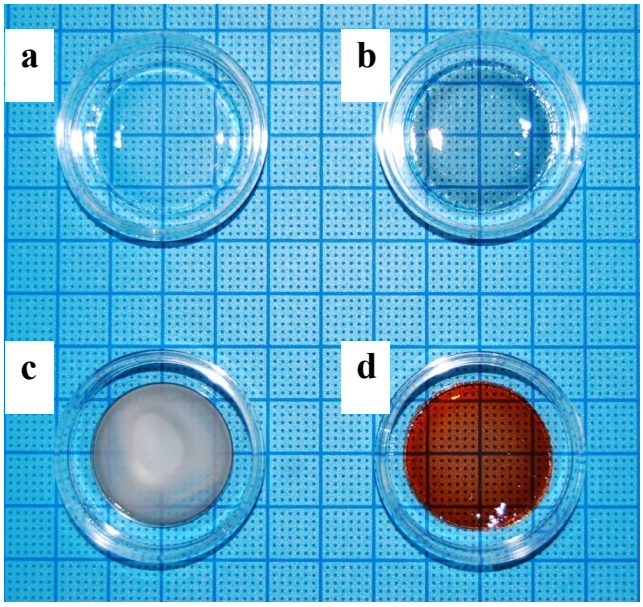

Fig. S1 Photograph of gels on dishes. **a,** PNIPAM gel. **b,** SWNT/PNIPAM gel polymerized from an SWNT dispersion centrifuged at 120000 g for 1 h. **c,** SWNT/PNIPAM gel after drying using phosphorus(V) oxide in vacuo. **d,** SWNT/PNIPAM gel after dipping in a 1 mM DOX aqueous solution for 48 h.

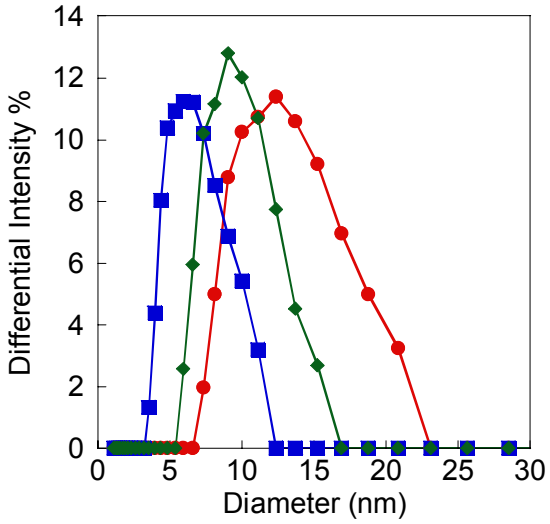

Fig. S2 Dynamic light scattering of the gels. The measurements were carried out for the gel prepared in the UV cuvettes (1 cm square); Peaks from PNIPAM (red line), PDMAAM (blue line), and PAAM (green line) gels are observed.

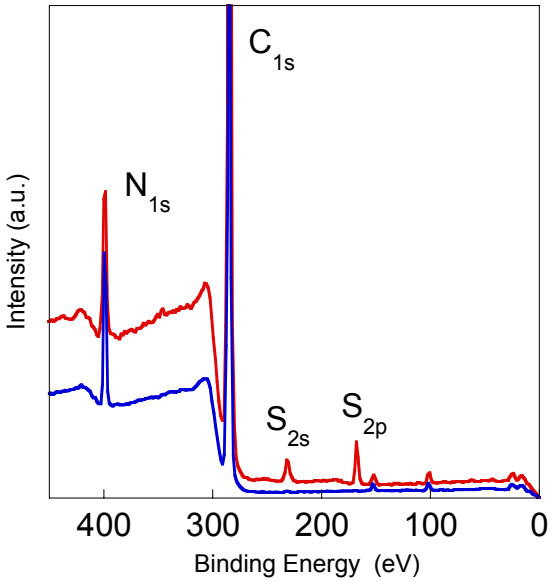

Fig. S3 X-ray photoelectron spectra. The spectra of SWNT/PNIPAM gel before (red line) and after (blue line) immersion in Milli-Q water are shown.

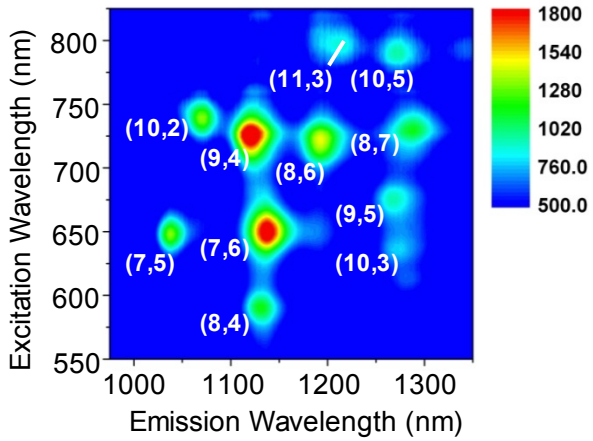

Fig. S4 2D-PL mapping of a reswelled gel. The SWNT/PNIPAM gel polymerized from a centrifuged SWNT dispersion was immersed in Milli-Q water for 72 h to remove the SDBS from the gel, followed by drying using phosphorus(V) oxide under vacuum for 48 h. The PL of the gel was measured after reswelling by dipping in Milli-Q water for 48 h.

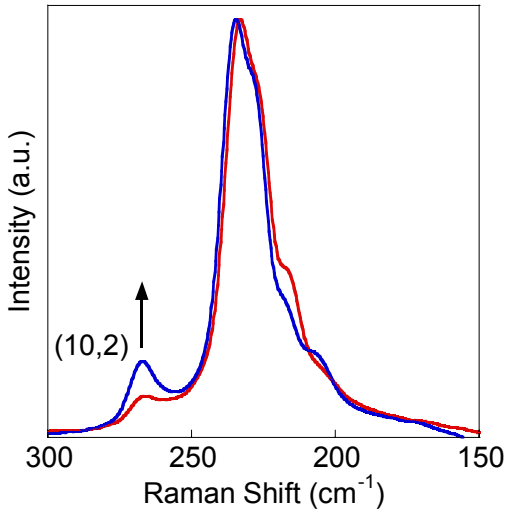

Fig. S5 Raman spectra of an SWNT/PNIPAM gel. Raman spectra of SWNT/PNIPAM gel before (red line) and after (blue line) dipping in a 1 mM DOX solution for 48 h.

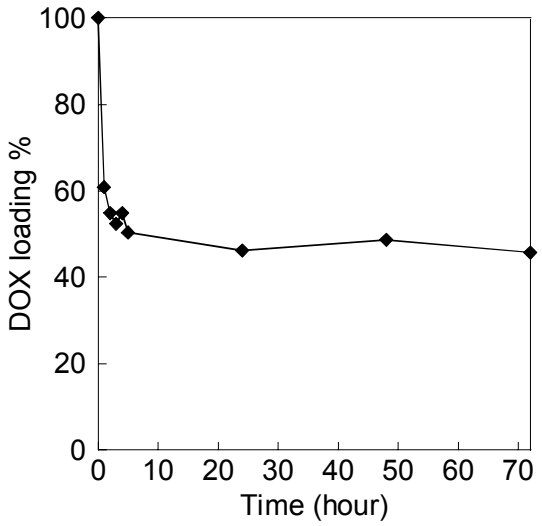

Fig. S6 The degree of DOX loading in gel of SWNT/PNIPAM(1)/PDMAAM(4) (synthesized from NIPAM/DMAAM=1/4) as a function of dipping time. The gel after dipping in a DOX solution was washed with Milli-Q water for 1 min, followed by dipping in a NaOH aqueous solutions (pH~9) for 72 h. The absorption differences at 490 nm between absorbance for each immersion time and that of the gel without DOX were plotted based on the initial absorption difference.