ADVANCED MATERIALS INTERFACES

Supporting Information

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Ultraviolet Light-Assisted Electrospinning of Core–Shell Fully Cross-Linked P(NIPAAm-*co*-NIPMAAm) Hydrogel-Based Nanofibers for Thermally Induced Drug Delivery Self-Regulation

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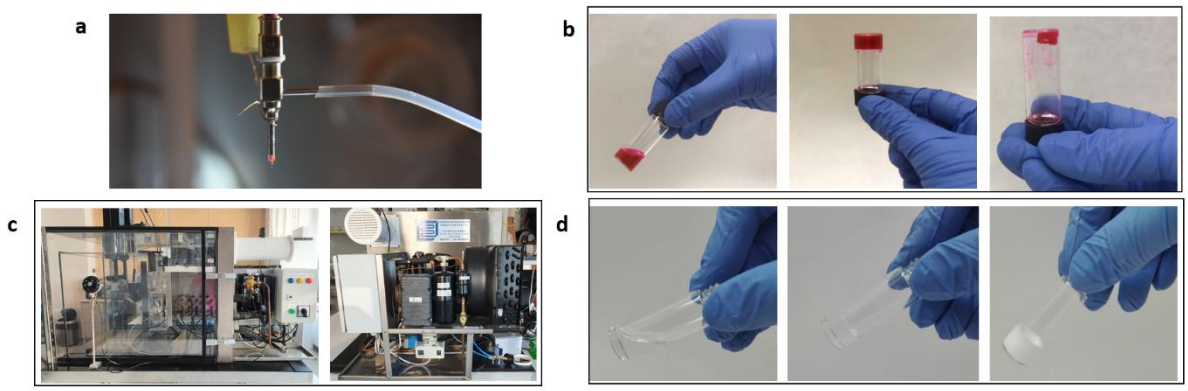

Figure S1. Picture of the electrospinning setup and properties of P(NIPAAm-*co*-NIPMAAm) precursor solution. a) Taylor cone of core (pink)-shell (transparent) solutions formed at the tip of the needle during the core-shell electrospinning process. b) Hydrogel polymerization: the left-hand side image shows the liquid stage of the P(NIPAAm-*co*-NIPMAAm) precursor, the center and right-hand side images show the material after polymerization below and above LCST, respectively. The shrinking of the material is visible when polymerization occurs at temperatures above LCST. c) Refrigeration system connected to the electrospinning chamber to maintain controlled environmental (temperature and humidity) conditions. d) Hydrogel synthesis: the left-hand side image shows the transparency of the P(NIPAAm-*co*-NIPMAAm) precursor, maintained in the case of polymerization occurring below LCST (center image); the right-hand side image the material looks opaque because it was polymerized above LCST.

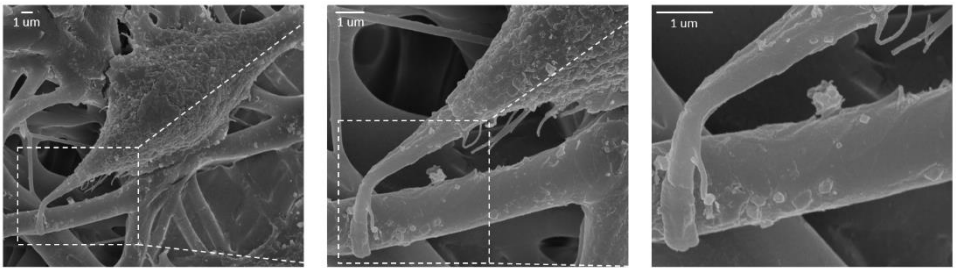

Figure S2. Different magnifications of L929 cell filopodium attachment on a P(NIPAAm-*co*-NIPMAAm)-PLCL core-shell single fiber.

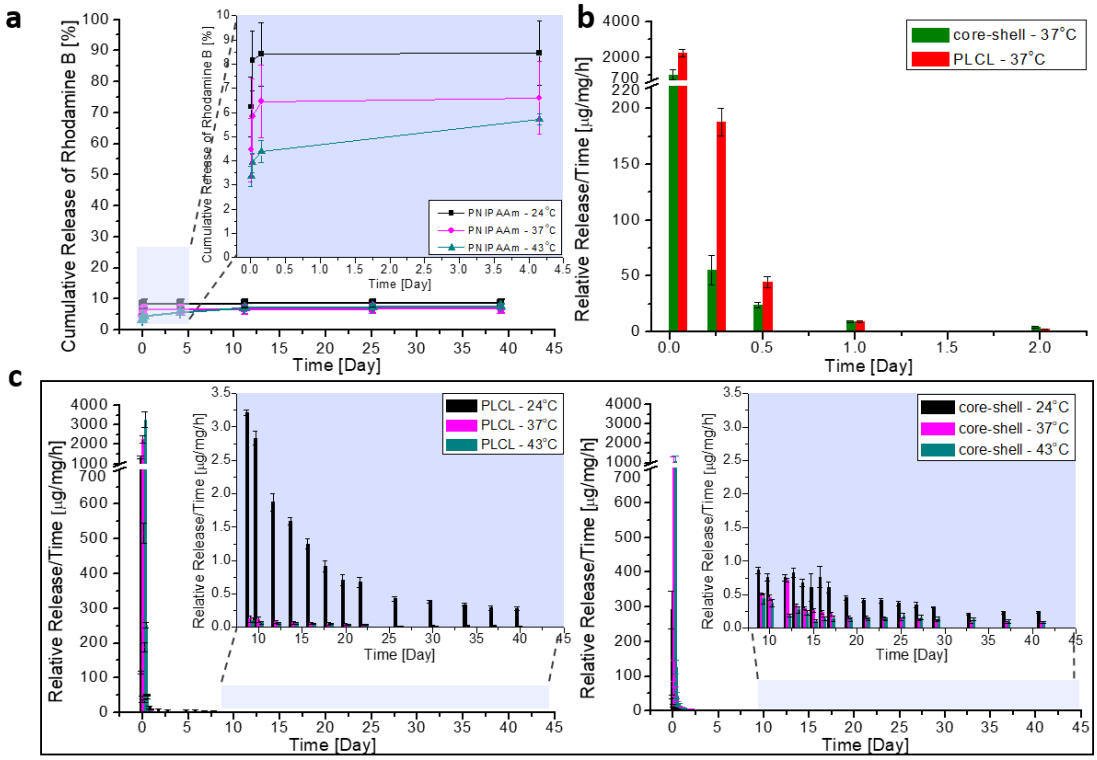

Figure S3. Rhodamine B release kinetics from PLCL fibers and P(NIPAAm-*co*-NIPMAAm)-PLCL core-shell fibers. a) Cumulative release of P(NIPAAm-*co*-NIPMAAm) hydrogel incubated at 24°C, 37°C, and 43°C for up to 41 days. b) Relative release of PLCL fibers and P(NIPAAm-*co*-NIPMAAm)-PLCL core-shell fibers at early incubation stages (up to 50 hours) at 37°C.

c) Relative release of PLCL fibers and P(NIPAAm-*co*-NIPMAAm)-PLCL core-shell fibers incubated at 24°C, 37°C, and 43°C. Core-shell system releases RhB up to 41 days at each tested temperature, PLCL fibers do not significantly release dye molecules at the later stage if incubated at a temperature higher than 37°C.

Table S1. Characteristic FTIR peaks position of P(NIPAAm-*co*-NIPMAAm) and PLCL functional groups.

Functional group	N-H [a)]	CH_2/CH_3 [a,b)]	COOR [b)]	N-C=O [a)]	C-O [b)]
Absorption peak [cm^{-1}]	3390 3295 3073	2996 2946 2868	1744	1677 1538	1183 1085

[a)] Peaks assigned to P(NIPAAm-*co*-NIPMAAm); [b)] peaks assigned to PLCL.