

Supplementary Information for

Fullerene and Ruthenium Dual End-Functionalized Thermosensitive Polymers: Synthesis, Characterization, Electrochemical Properties, and Self-assembly[†]

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Fluorescence Microscopy

An inverted Olympus light microscope with a fluorescent attachment and an Optronics CCD camera was used to image fluorescent samples. Image-Pro Plus from Media Cybernetics Inc. was the software used to image the samples.

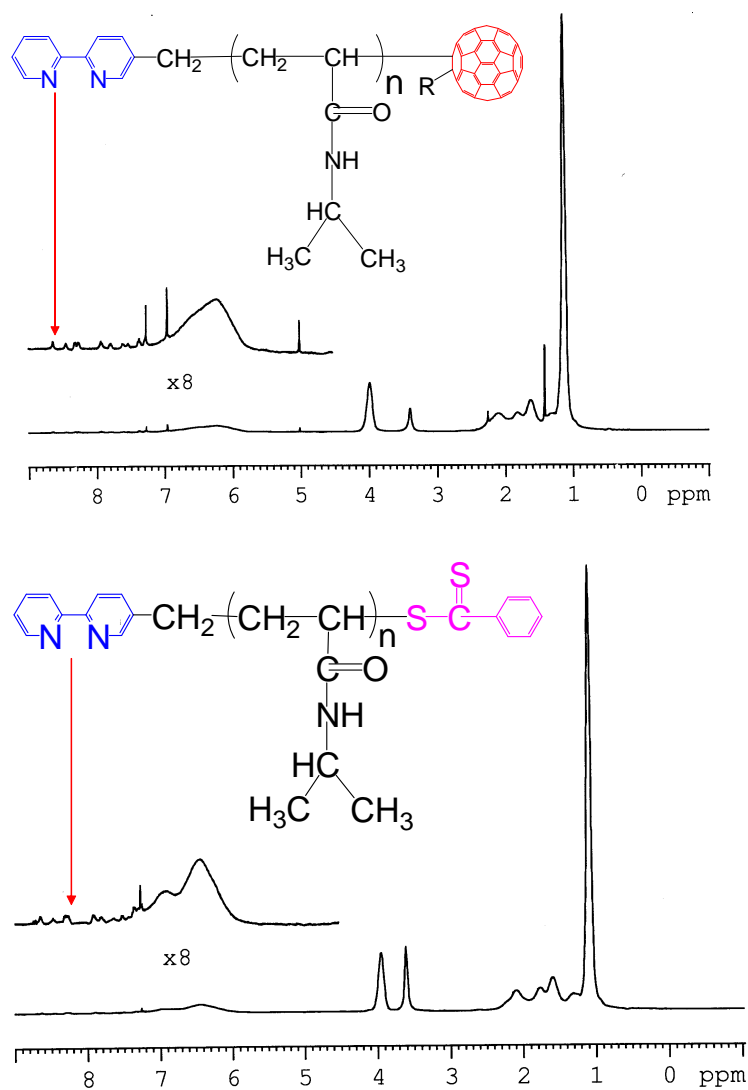


Figure S1. ¹H NMR spectra (CDCl₃) of the representative fullerene and bipyridine-terminated poly(N-isopropylacrylamide) macroligand **Bpy-PNIPAM₇₈-C₆₀** (top) and its corresponding precursor **Bpy-PNIPAM₇₈-S-C(=S)-Ph** (down).

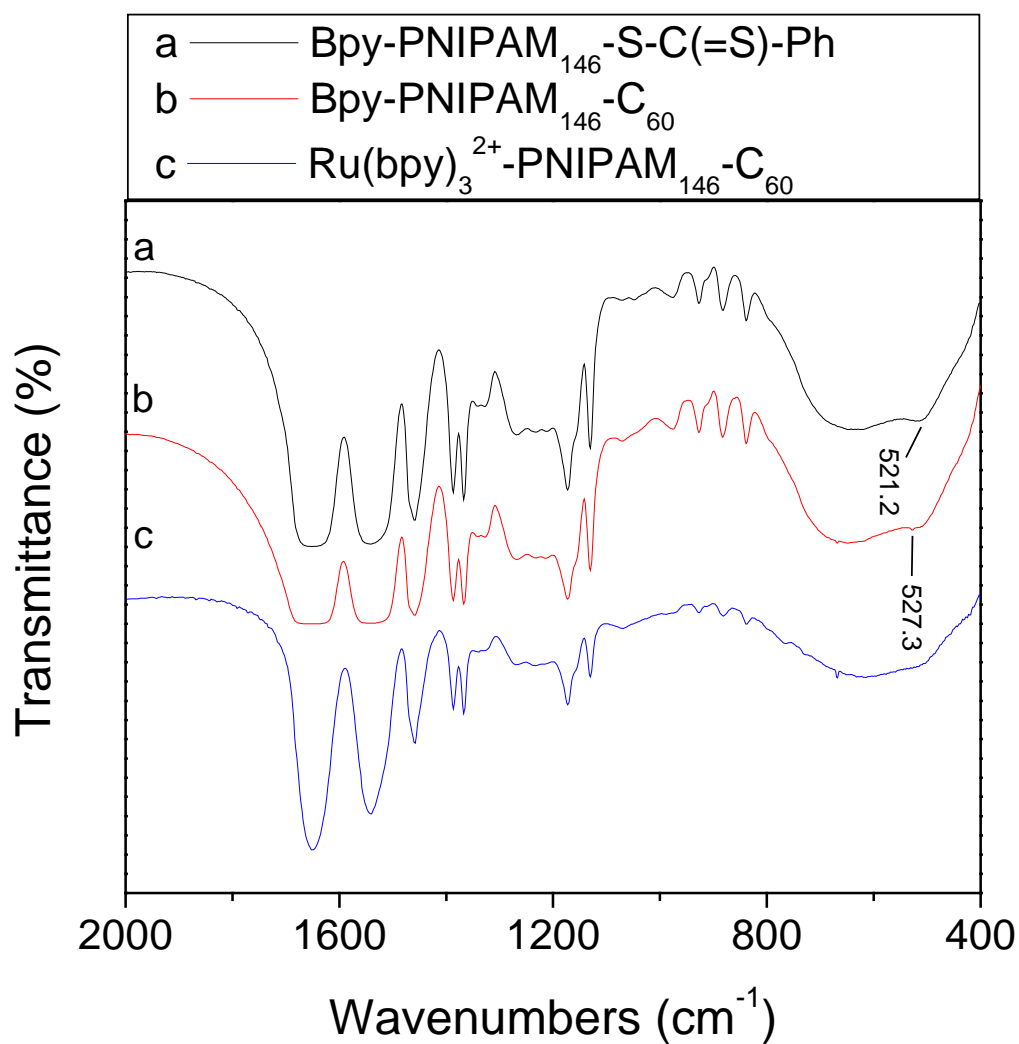


Figure S2. FT-IR spectra (KBr) of the fullerene end-functionalized metallopolymer, **Ru(bpy)₃²⁺-PNIPAM₁₄₆-C₆₀** and its corresponding fullerene and bipyridine-terminated PNIPAM macroligand **Bpy-PNIPAM₁₄₆-C₆₀** and precursor **Bpy-PNIPAM₁₄₆-S-C(=S)-Ph**.

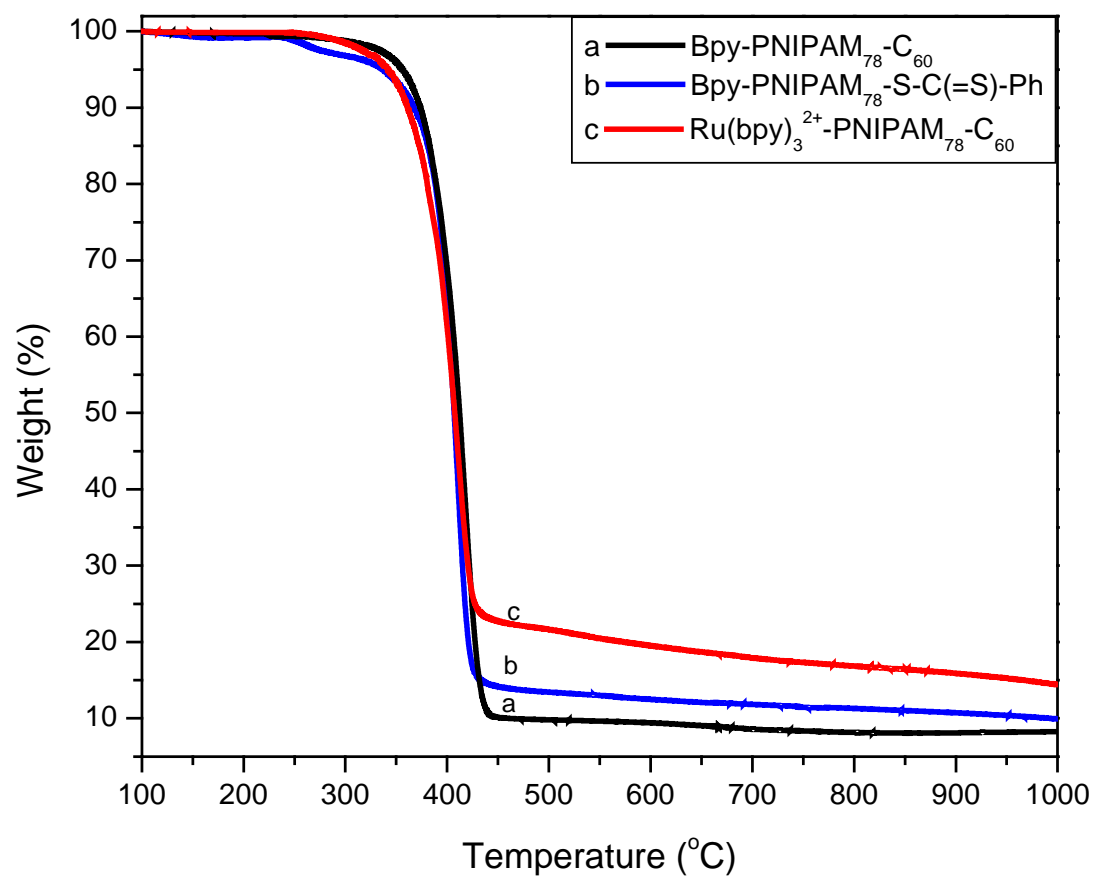


Figure S3. TGA traces of the fullerene end-functionalized metallopolymers $\text{Ru}(\text{bpy})_3^{2+}\text{-PNIPAM}_{78}\text{-C}_{60}$ and their corresponding fullerene and bipyridine-terminated PNIPAM macroligands $\text{Bpy-PNIPAM}_{78}\text{-S-C(=S)-Ph}$ precursor polymers $\text{Bpy-PNIPAM}_{78}\text{-C}_{60}$.

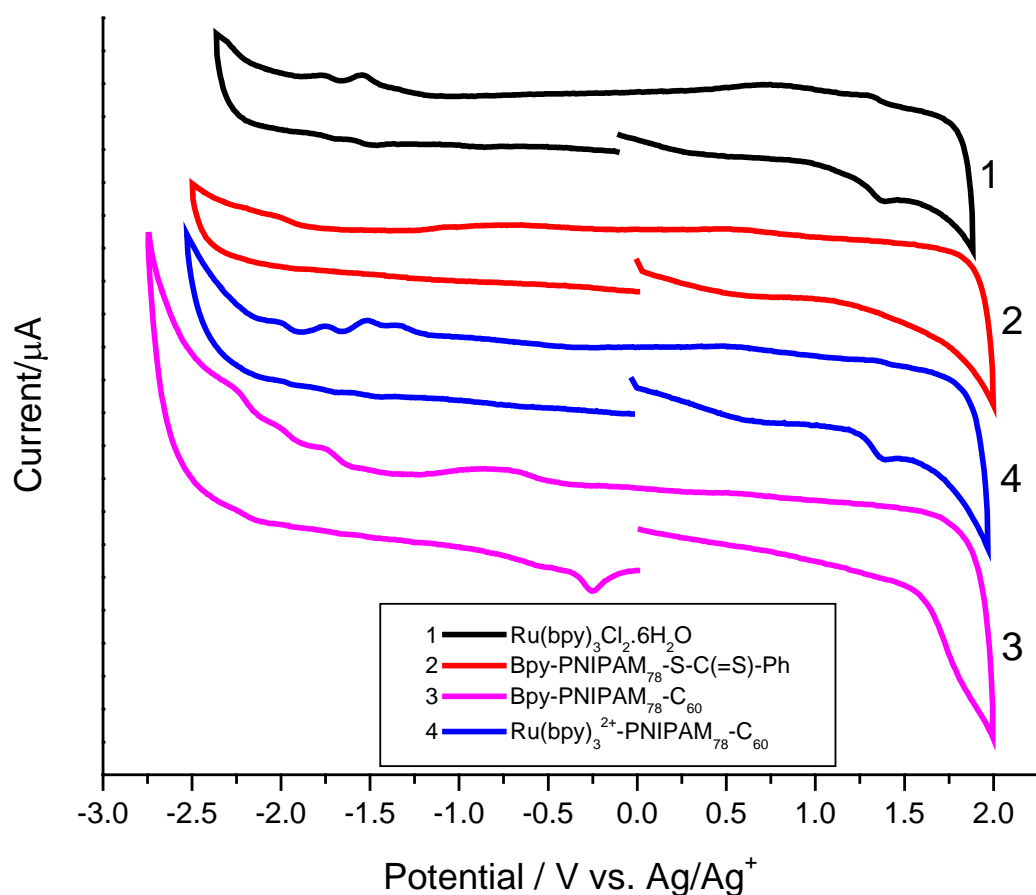


Figure S4. Cyclic voltammograms of the fullerene end-functionalized metallopolymer, **Ru(bpy)₃²⁺-PNIPAM₇₈-C₆₀** and its corresponding fullerene and bipyridine-terminated PNIPAM macroligand **Bpy-PNIPAM₇₈-C₆₀** and precursor polymer **Bpy-PNIPAM₇₈-S-C(=S)-Ph** as well as Ru(bpy)₃Cl₂·6H₂O in CH₃CN containing 0.1 M Bu₄NPF₆ at a scan rate of 500 mVs⁻¹ at room temperature (all sample concentrations were 1×10⁻⁴ M).

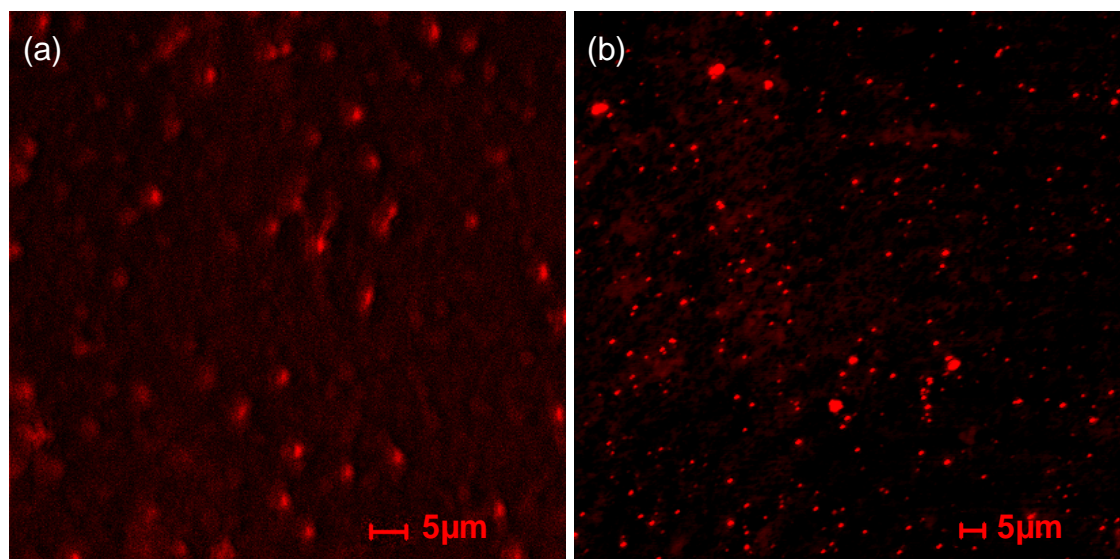


Figure S5. Fluorescence microscopic images of the fullerene- and tris(bipyridine)ruthenium-terminated poly(N-isopropylacrylamide) metallopolymer, **Ru(bpy)₃²⁺-PNIPAM₇₈-C₆₀** (a) and **Ru(bpy)₃²⁺-PNIPAM₁₄₆-C₆₀** (b) (in water, sample concentration: 5.0 mg/ml).