## Supporting Information

# Implantable Tin Porphyrin-PEG Hydrogels with pH-responsive Fluorescence

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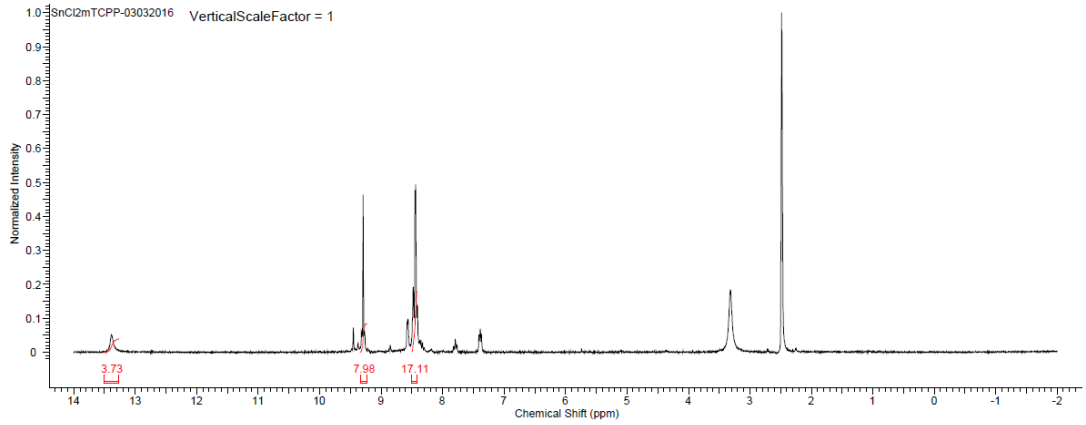


**Fig. S1 NMR of $SnCl_2$mTCPP hydrogels.** The peak at 3.33 ppm is water in $(CD_3)_2SO$ [1].

[1] G.R. Fulmer, A.J.M. Miller, N.H. Sherden, H.E. Gottlieb, A. Nudelman, B.M. Stoltz, J.E. Bercaw, K.I. Goldberg, NMR Chemical Shifts of Trace Impurities: Common Laboratory Solvents, Organics, and Gases in Deuterated Solvents Relevant to the Organometallic Chemist, Organometallics 29(9) (2010) 2176-2179.

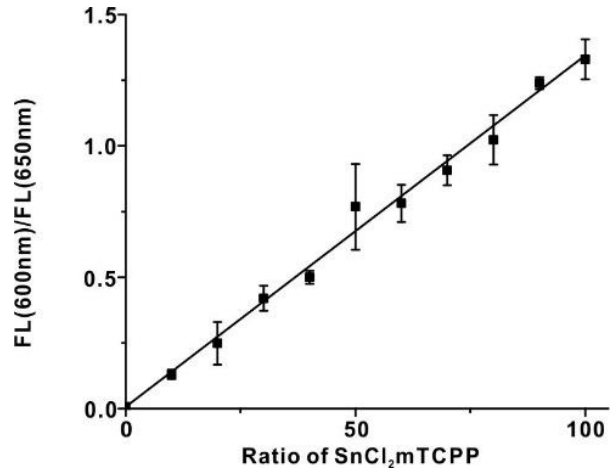


**Fig. S2 Standard curve of $SnCl_2$mTCPP concentration ratio and fluorescent intensities ratio of 600 nm and 650 nm, $R^2$=0.99838.** Data show mean +/- std. dev. for n=3 separate polymerization reactions and purifications.

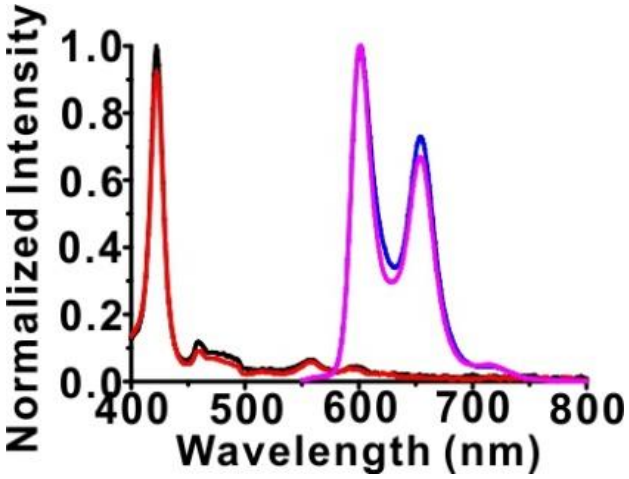


**Fig S3. Absorbance spectra of synthesized $SnCl_2$mTCPP (black) and the post chelated one (red), and their emission spectra (blue for synthesized sample and purple for post chelated one).**

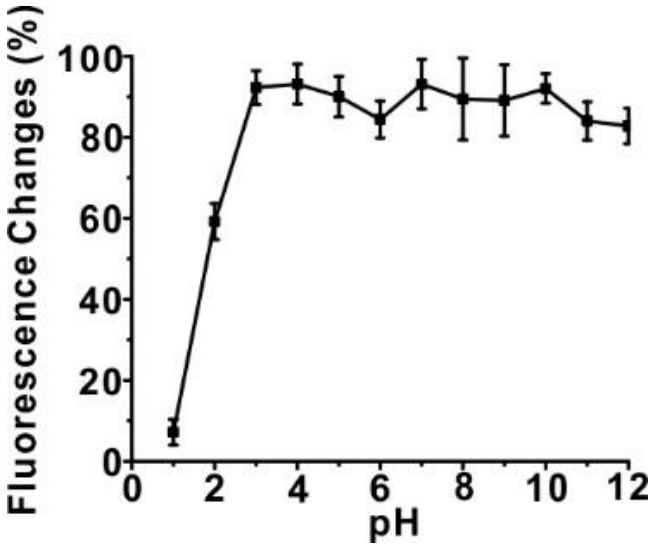


**Fig S4. pH sensitivity of 2H-mTCPP hydrogels in pH=1-12 100mM sodium phosphate.** Data show mean +/- std. dev. for n=3 separate polymerization reactions and purifications.

**Table S1. Lifetime values and corresponding fitted parameters of tin hydrogel**

| pH | $A_1$ | $\tau_1$ (ns) | $A_2$ | $\tau_2$ (ns) | $\langle\tau\rangle$ (ns) |
|---|---|---|---|---|---|
| 1 | 0.02±0.005 | 2.2±0.3 | 0.98±0.03 | 0.8±0.02 | 0.9±0.05 |
| 2 | 0.16±0.02 | 1.7±0.1 | 0.84±0.04 | 0.9±0.03 | 1.1±0.09 |
| 3 | 0.48±0.008 | 1.3±0.01 | 0.52±0.02 | 0.5±0.01 | 1.1±0.02 |
| 4 | 0.62±0.05 | 1.4±0.06 | 0.38±0.06 | 0.7±0.1 | 1.2±0.1 |
| 5 | 0.46±0.03 | 1.5±0.05 | 0.54±0.04 | 0.7±0.05 | 1.2±0.09 |
| 6 | 0.58±0.04 | 1.4±0.06 | 0.42±0.06 | 0.6±0.08 | 1.2±0.1 |
| 7 | 0.73±0.03 | 1.6±0.02 | 0.27±0.03 | 0.7±0.07 | 1.5±0.06 |
| 8 | 0.97±0.02 | 1.5±0.02 | 0.03±0.007 | 3.1±0.6 | 1.6±0.08 |
| 9 | 0.97±0.02 | 1.6±0.02 | 0.03±0.009 | 2.8±0.6 | 1.6±0.09 |
| 10 | 0.75±0.02 | 1.7±0.02 | 0.25±0.02 | 1.0±0.06 | 1.6±0.05 |
| 11 | 0.37±0.009 | 1.8±0.03 | 0.63±0.01 | 1.3±0.02 | 1.6±0.04 |
| 12 | 1±0* | 1.6±0.01* | | | 1.6±0.1* |

* mono-exponential decay