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**Supporting Information** 



**Figure S1**. Representative mercury porosimetry data for a scaffold comprised of 1.25 wt% PEDOT:PSS + 3 wt% GOPS. Samples prepared using the ice-templating method have pore areas of  $2.2 \pm 0.1 \text{ m}^2.\text{g}^{-1}$ , pore volumes of  $21.6 \pm 0.8 \text{ cm}^3.\text{g}^{-1}$ , and median pore diameters of  $39.1 \pm 2.7 \text{ }\mu\text{m}$ .



**Figure S2**. Elastic moduli of PEDOT:PSS/GOPS scaffolds submerged in cell media, demonstrating that modulus can be tuned by changing the concentration of scaffold components. Scaffolds composed of 1.25 wt% PEDOT:PSS with 3 wt% GOPS (with an elastic modulus of  $4.5 \pm 0.6$  kPa) were selected for this work due to their robustness and ease of invasion by 3T3-L1 cells. The data were obtained from the compression cycle of a dynamic mechanical analysis tool. Elastic modulus was calculated from the slope of the linear part of the resulting stress-strain curves.



**Figure S3**. Electrical impedance spectra of a 3D porous scaffold on Au substrate (black circles), and a bulk (non-porous) PEDOT:PSS film with the same volume, drop cast on Au substrate (red squares).



**Figure S4.** FRET intensity ratio (*i.e.*, acceptor intensity/donor intensity) calibration as a function of chemical denaturant (guanidine hydrochloride, GdnHCl) concentration. The schematics at left illustrate Fn conformations at various FRET ratios estimated from circular dichroism measurements. Data are shown as means and standard deviations, with 8 to 10 measurements per sample.