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## Open vessel free radical photopolymerization of double network gels for biomaterial applications using glucose oxidase

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## Supporting information

## <sup>1</sup>H NMR

Proton Nuclear Magnetic Resonance Spectroscopy (<sup>1</sup>H NMR): A 400-MHz Avance Bruker spectrometer instrument was used to acquire the <sup>1</sup>HNMR spectra of the photopolymers in D2O. <sup>1</sup>H NMR samples for kinetics were taken at the 0 min time point and 1, 2, 5, 10, 20, 40, 50, 60, 70 and 90 min time points. Figure 1 and 2 shows PAAm and PAMPS at full conversions using 1 wt % and 0.1 wt % PI, respectively. Conversion was calculated using trioxane as a reference peak. The area under the monomer peaks were calculated relative to the area under trioxane which was set to 1. This was done for both 0 min and 90 min time points, as well as all time point in between for the kinetics study. Final conversions for each were calculated as:

Equation 1: 
$$(Mm - Mp)/Mm \times 100\% = PC\%$$

Where Mm is the area under the monomer peak at time 0 and Mp is the area under the monomer peak at the specific polymer time point.



Figure 1 – <sup>1</sup>H NMR spectra of PAAm showing full conversion with in the presence of GOX, using 1 wt % PI



Figure 2 – <sup>1</sup>H NMR spectra of PAMPS showing full conversion with in the presence of GOX, using 0.5 wt % PI