





Understanding the role of nanoparticles in enhancing mechanical properties of hydrogel nanocomposites

Josergio Zaragoza¹, Scott Fukuoka¹, Marcus Kraus¹, James Thomin² and Prashanth Asuri^{1,*}

- ¹ Department of Bioengineering, Santa Clara University, Santa Clara, CA 95053, USA; j1zaragoza@scu.edu; sfukuoka@scu.edu; mkraus1@scu.edu
- ² Department of General Sciences, Northwest Florida State College, Niceville, FL 32578, USA; thominj@nwfsc.edu
- * Correspondence: asurip@scu.edu; Tel.: +1-408-551-3005



Figure S1. Elastic modulus for neat hydrogels for various monomer and relative crosslinker ratios. Data shown are the mean of triplicate measurements ± standard deviation and have been repeated at least three times with similar results.



Figure S2. Relative elastic moduli of pAAm hydrogels as a function of nanoparticle concentration for 2.5% pAAm (white circles), 5% pAAm (grey squares), and 10% pAAm (black triangles) hydrogels prepared using $%C_{Bis}$ = 1.23. Data shown are the mean of triplicate measurements ± standard deviation and have been repeated at least three times with similar results.



Figure S3. Relative elastic moduli of 2.5% pAAm (white circles), 5% pAAm (grey squares), and 10% pAAm (black triangles) hydrogels prepared using $%C_{Bis} = 1.23$ as a function of relative nanoparticle concentration ($%C_{NP}$). Data shown are the mean of triplicate measurements ± standard deviation and have been repeated at least three times with similar results.