

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Spotting the Gel Point of Photopolymers by Examining NMR Relaxation JACK LEE, GRETCHEN HOFMEISTER, MARTHA-ELIZABETH BAYLOR, Carleton College — Spotting when a polymer goes from liquid to solid during polymerization is necessary when working with certain optically cured polymers used to fabricate optofluidic devices that contain both optical and microfluidic features. Through the use of nuclear magnetic resonance (NMR) it may be possible to determine when the transition from liquid to solid, called the gel point, occurs. In examining the proton longitudinal relaxation time for one species of monomers in our polymer mix, our data shows as the polymer cures the relaxation time increases. By examining this data we were able to extract a time to gel point that was within the margin of error of the theoretical gel point of our materials. Outlined here is evidence of why we think longitudinal relaxation is applicable to studying polymerization, and how we are using it to attempt to extract the gel point.

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Date submitted: 08 Jan 2016

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