# Supporting Information

## Thermo-Responsive PolySulfoBetaine Beads Crosslinked with Biodegradable Alginates for Controlled Release of Agricultural Pesticide

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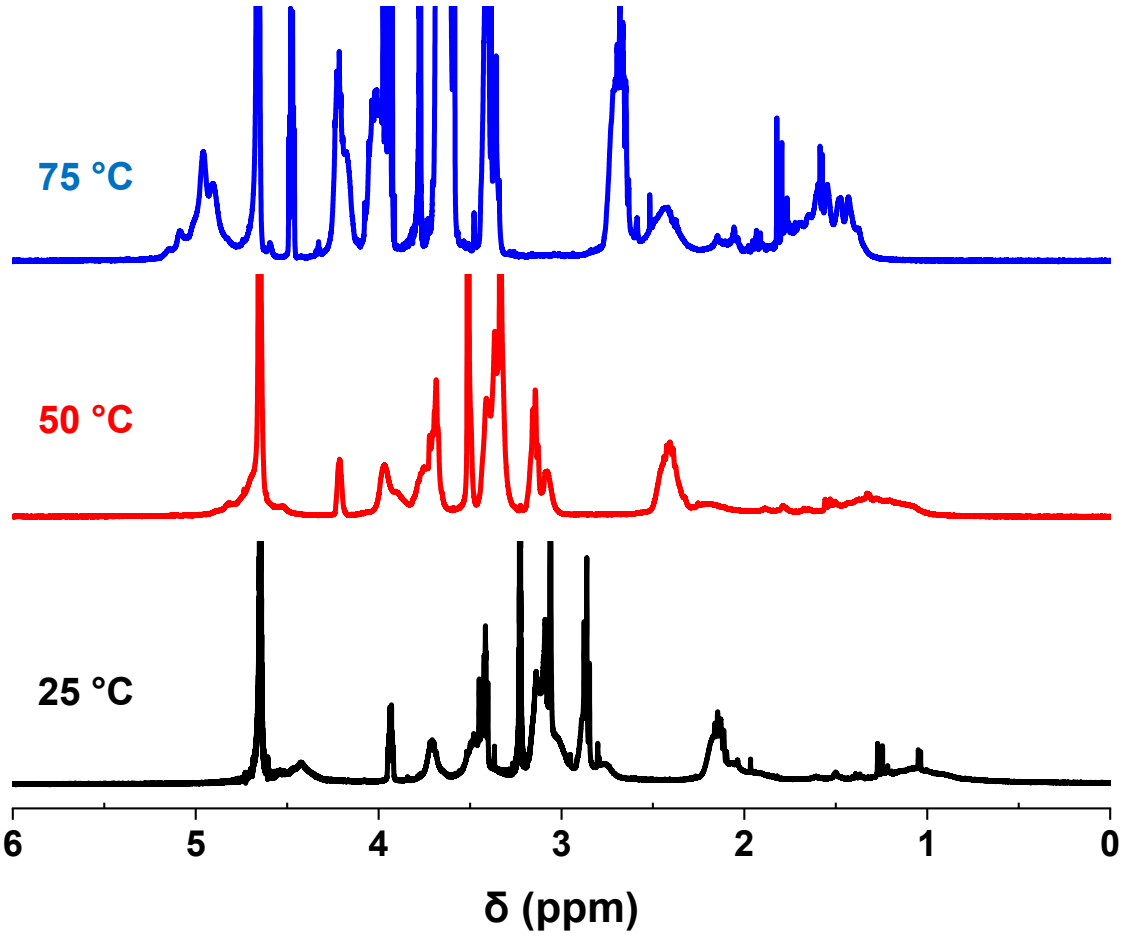


**Figure S1.** Overlaid $^{1}$H-NMR spectra of PDMAPS run at temperatures at 25, 50, and 75 °C.

As seen above, as the temperature increased, not only are the peaks more distinguishable and sharper, but the entire spectrum is shifted upfield. These results indicate that the electrostatic interactions of PDMAPS is being disrupted, providing better characterization.

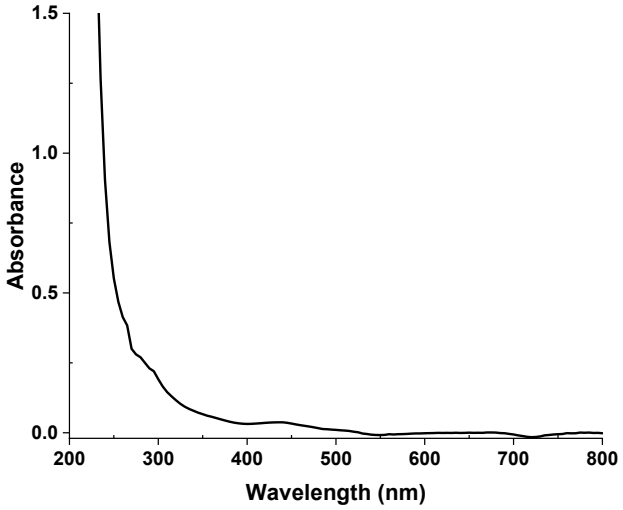


**Figure S2.** UV-Vis spectrum of $CaCl_2$ solution after formation of FL-beads. Note that only one spectrum is shown as all FL-beads lead to similar measurement values.

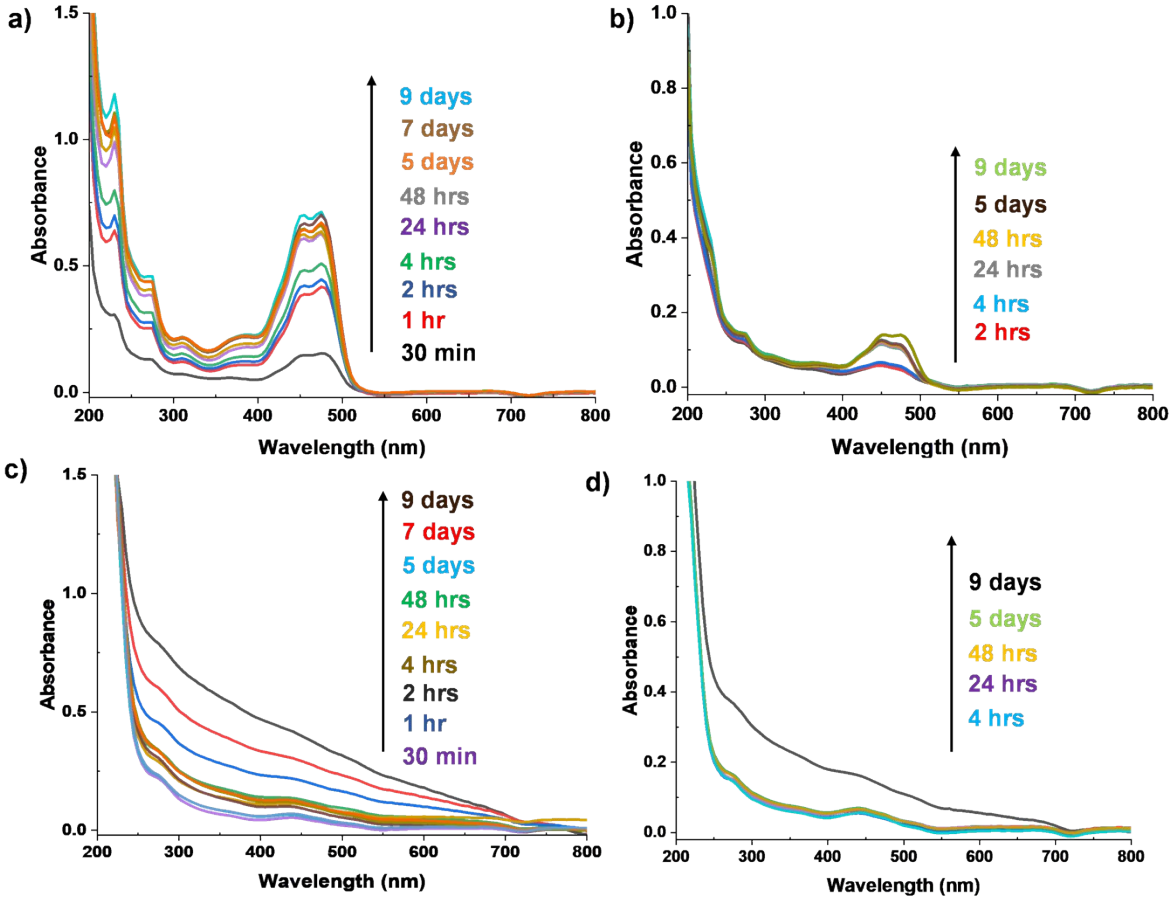


**Figure S3.** Overlaid UV-Vis spectra of %release of Fluorescein in m-beads-100 ALG (a), m-beads-75 ALG (b), m-beads-23 ALG (c), and m-beads-9 ALG (d).

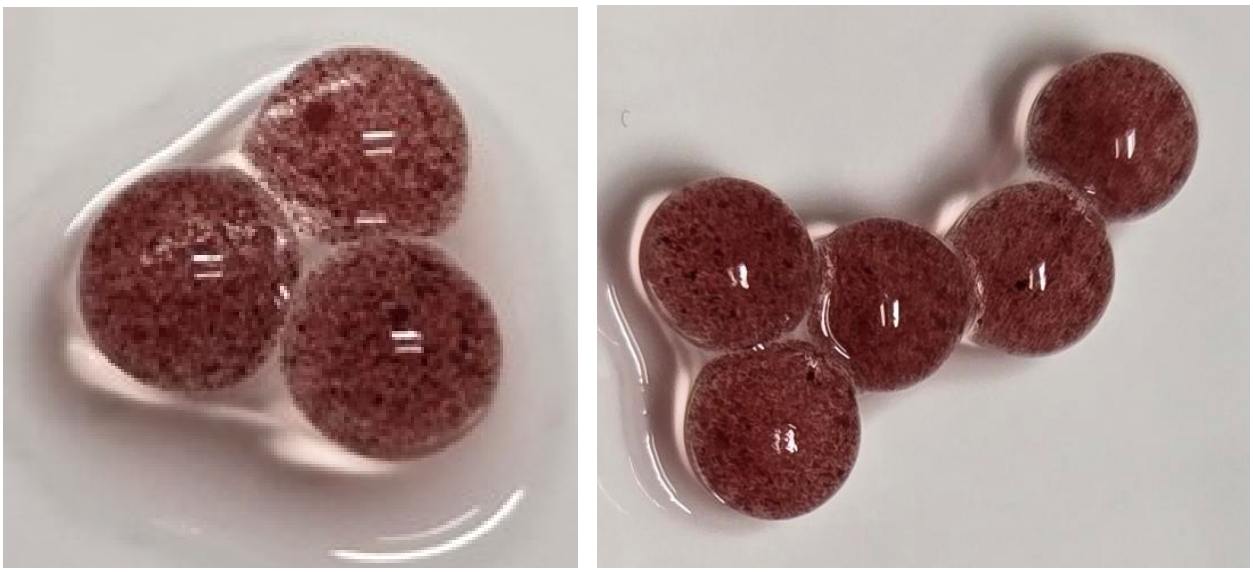

**Figure S4**. Digital images in high magnification of FL-beads with 9% ALG.

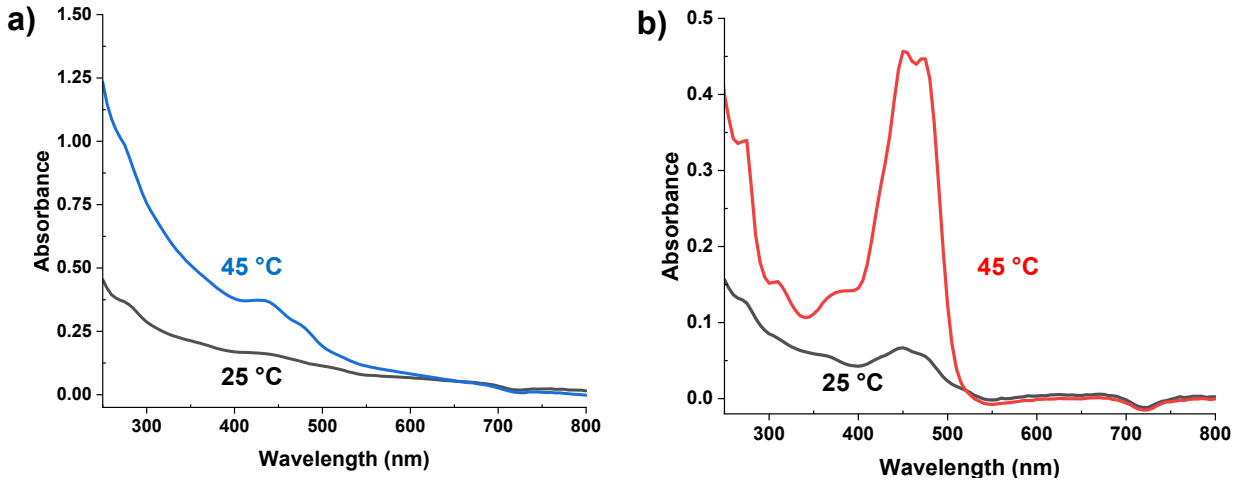


**Figure S5.** Overlaid UV-Vis spectra of %release of fluorescein in m-beads-9 ALG (a), and m-beads-75 ALG (b) at both 25 °C and 45 °C after 4 hrs.

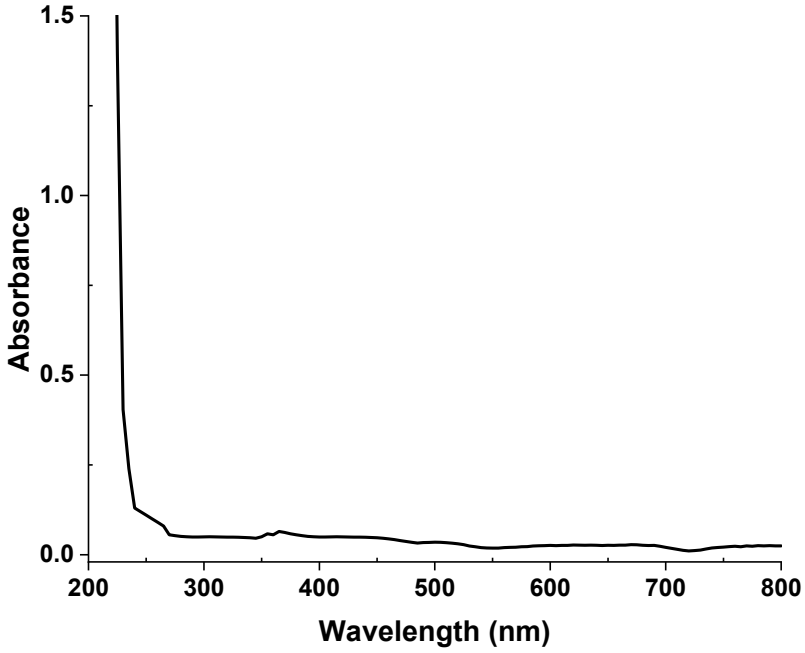


**Figure S6.** UV-Vis spectrum of $CaCl_2$ solution in the batch after fabrication of GFA-beads with 75% ALG, showing no significant absorption of GFA that indicates >98% loading efficiency.

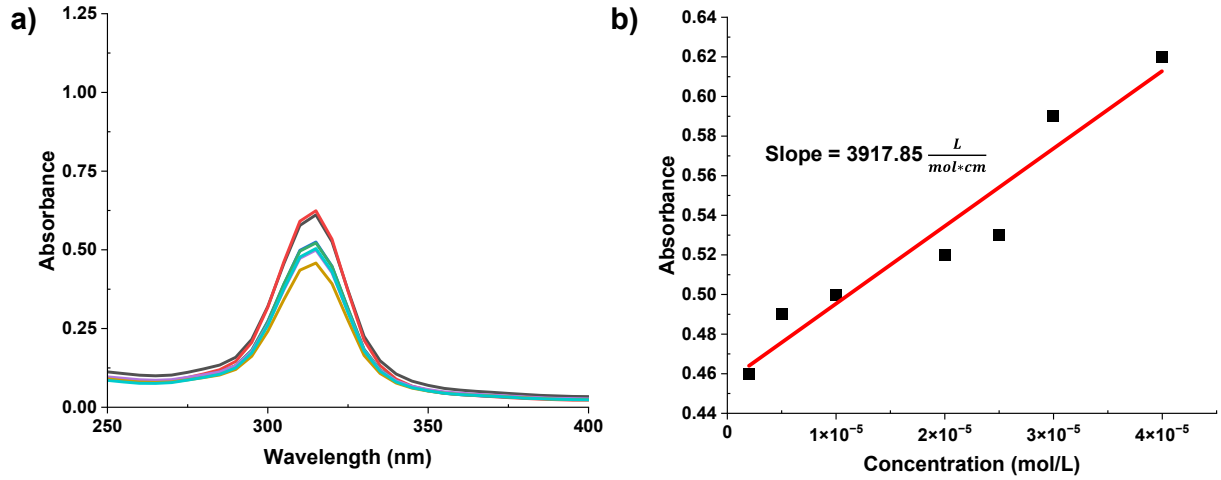


**Figure S7.** Overlaid UV-Vis spectra (a) and linear (b) calibration curve of GFA.

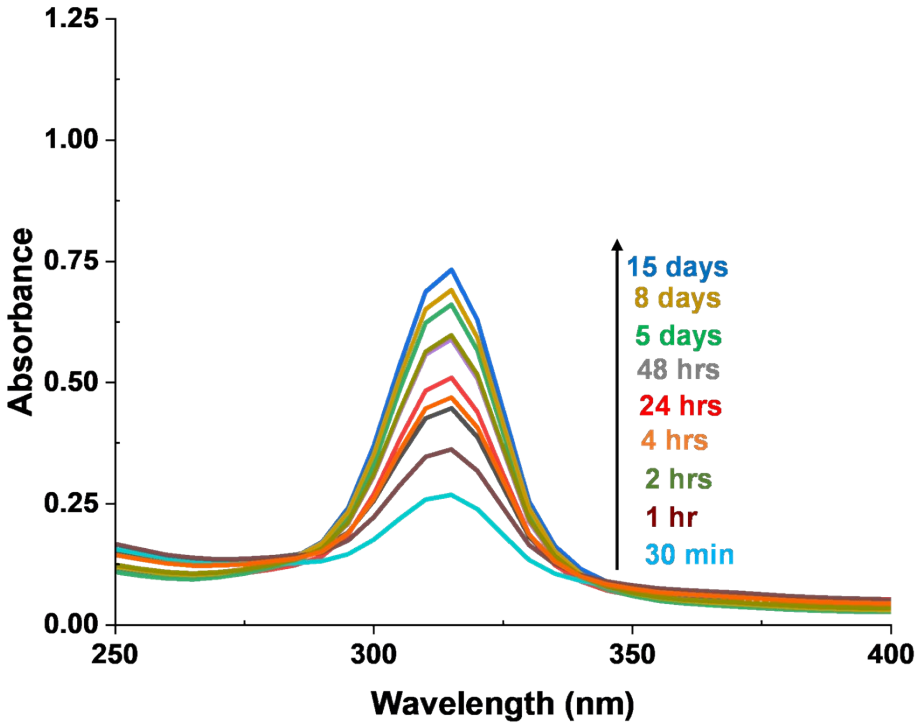


**Figure S8.** Overlaid UV-Vis spectra of %release of GFA in GFA-beads in 75% ALG.