Electronic Supplementary Material (ESI) for Molecular Systems Design & Engineering.


# Rational design of water-harvesting hydrogels

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## Supporting Information

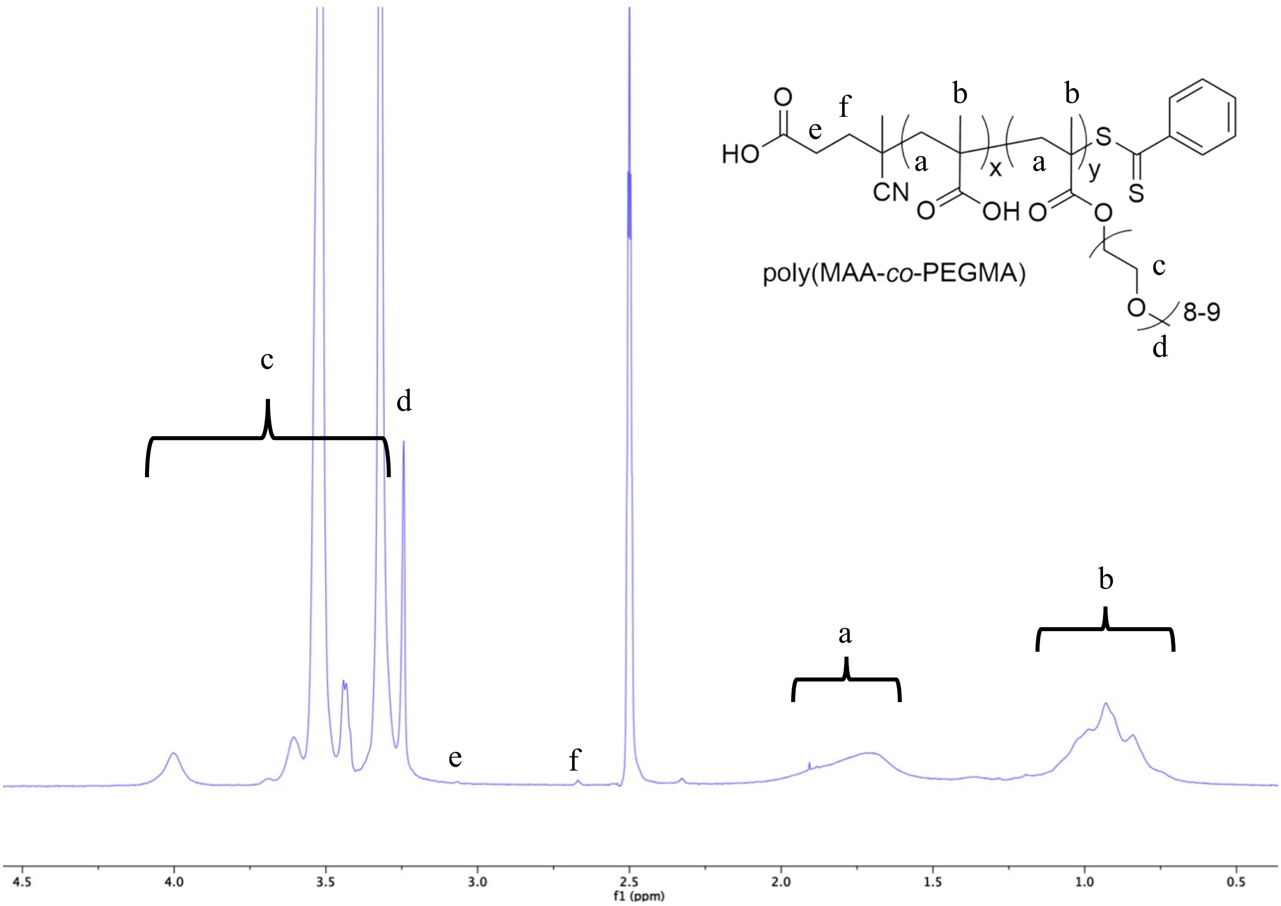
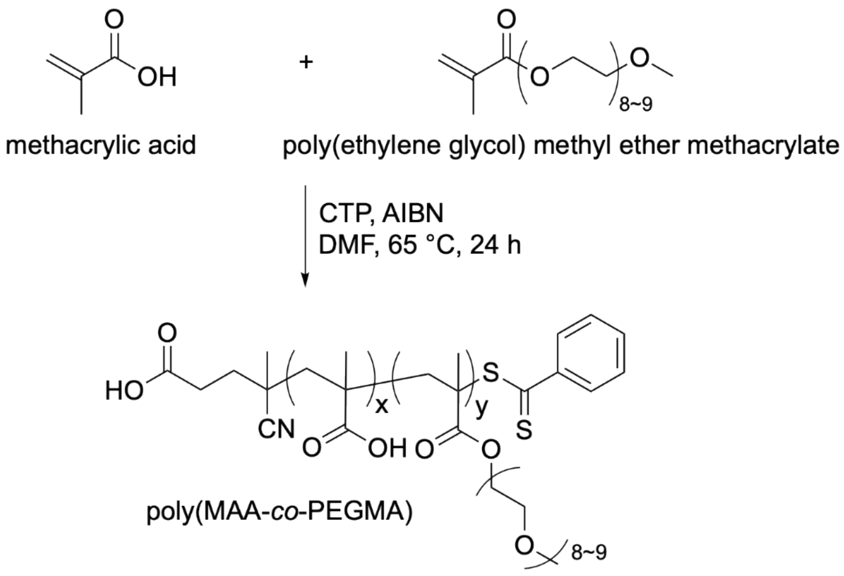



**Figure S1:** [1]H NMR spectrum of poly($MAA_{80}$-*co*-$PEGMA_{20}$), with major protons assigned where possible.

| Feed ratio (MAA:PEGMA) | Mn(kDa) | Notes |
|---|---|---|

| | | |
|---|---|---|
| **60:40** | 12.6 | Viscous liquid |
| **70:30** | 11.5 | Malleable |
| **80:20** | 11.3 | Malleable yet glassy |
| **90:10** | 26.1 | Brittle |

**Table S1:** $M_n$ of poly(MAA-*co*-PEGMA) as calculated using $^1$H NMR spectroscopy (by way of integration). Additional notes on appearance of samples are provided.




**Scheme S1:** Pathway to synthesis of poly(MAA-*co*-PEGMA) temperature-responsive co-polymers.

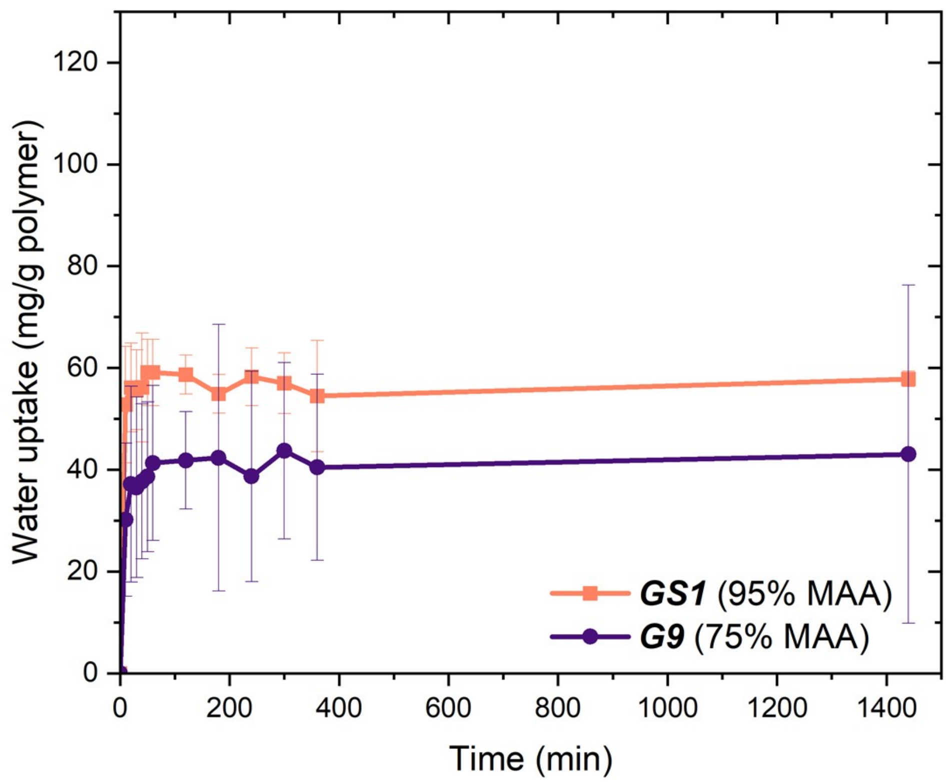



**Figure S2:** Water uptake over 24 hours of ***GS1*** and ***G9***, comparing MAA content. ***GS1*** used a 95:5 ratio of MAA to PEGDMA (10,000 Da).

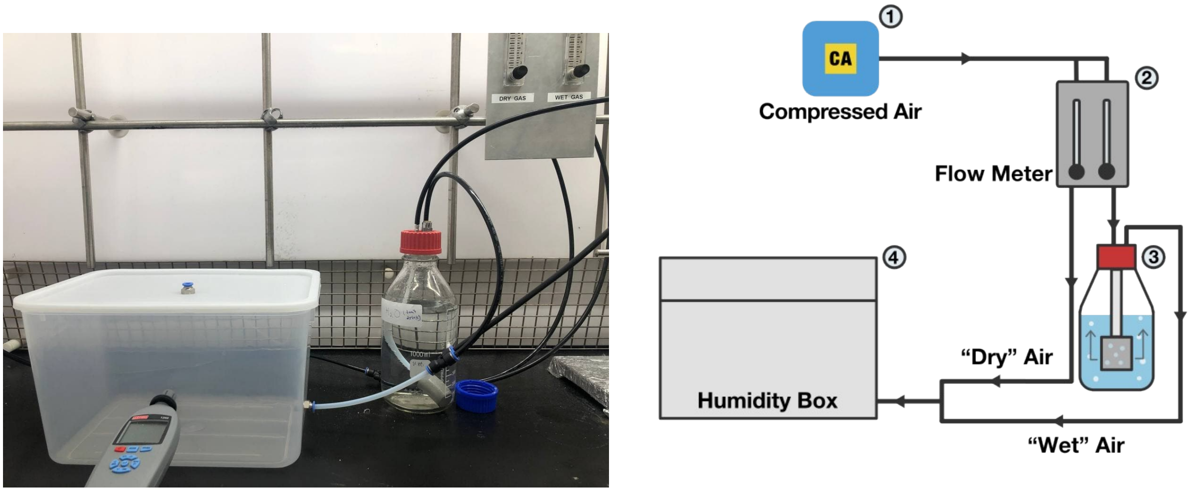



**Figure S3:** A photograph of the humidity box (left) and a schematic of the system (right).