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Investigation of hydrophobic interactions mediating the self-assembly of supramolecular host/guest polymer complexes utilizing Simultaneous Multiple Sample Light Scattering (SMSLS)[1] MOLLY PAYNE, CURTIS JARAND, SCOTT GRAYSON, WAYNE REED, Tulane University — While living systems spontaneously heal injuries, most man made materials cannot recover from damage. Incorporating self-healing properties into synthetic polymers could significantly extend product lifetime, safety, and applications. Most reported approaches to incorporate healing into synthetic materials, however, require external stimuli such as chemical additives, heat, and light exposure. Although dynamic bonds have been explored, particularly using a hydrogen bond motif, this has not been fully investigated in an aqueous environment. To address this, hosts and guests that dynamically associate in water have been investigated to build aqueous self-healing materials. These association values were probed for various host/guest complexes using Simultaneous Multiple Sample Light Scattering (SMSLS), a technique that measures the size of aggregates via light scattering while varying concentration and other environmental factors.

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