A functional materials platform based on amide activation

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Abstract: The ability to rationally design the physical properties exhibited by synthetic polymers for next-generation engineering applications is one of the grand challenges in modern polymer chemistry. Post-polymerization modification methods play a pivotal role in achieving this goal by providing the ability to fine-tune and enhance the properties of well-defined polymers after their initial synthesis. This approach unlocks nearly unlimited possibilities for tailoring materials to specific applications, in particular when functionalization is achieved in the absence of designer monomers and/or functional groups. This presentation will discuss our efforts in the development of new post-polymerization functionalization methodologies that exploit the native functional groups of easily accessible synthetic macromolecules.

Bio: Aaron earned a B.S. degree in Chemistry in 2012 from the University of Nevada, Reno prior to joining the University of Texas at Austin, where he completed a PhD in Chemistry in 2016. His dissertation work (Christopher Bielawski) focused on the design and development of novel photoswitchable transformations. Aaron subsequently joined the lab of Frank Leibfarth at the University of North Carolina at Chapel Hill as a postdoctoral fellow. His work at UNC focused on the design and development of stereoselective ionic polymerizations. Aaron joined the faculty at the University of Kansas as an Assistant Professor in 2021, where his group is focused on the design and synthesis of new, functional synthetic macromolecules.