Presenter bio for “Designing Polymeric Hydrocarbons for Low Flammability Materials"
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Todd Emrick is a Professor of Polymer Science and Engineering at the University of Massachusetts Amherst. He is a synthetic organic/polymer chemist who earned his Ph.D. in organic chemistry from the University of Chicago (1997) and performed postdoctoral research in polymer synthesis at the University of California Berkeley (1998-2000). At UMass, he leads the Non-flammable Polymer Materials research cluster and is the prior Director of the National Science Foundation-supported Materials Research Science and Engineering Center (MRSEC) on Polymers at UMass Amherst. He has published ~350 peer-reviewed manuscripts in polymer synthesis and materials chemistry and is an inventor on over 20 issued patents. He is a member of the National Academy of Inventors (2014), is an American Chemical Society Fellow, and received the Carl S. Marvel Award for Creative Polymer Chemistry from the American Chemical Society. Professor Emrick’s work at UMass Amherst consists of innovative approaches to polymer materials synthesis, including functional polymers, aqueous polymer assembly, self-healing materials, electronically active polymers, and polymers with ultra-low flammability. In the polymer flammability area, his work centers on materials synthesis and discovery, as well as solutions to the polymer flammability problem that do not require the use of halogenated compounds as flame retardants. Characterization of the molecular and macromolecular materials emanating from this research benefits from advances made at the FAA in microscale combustion and the relationship between analysis of small-scale samples as a predictor of flammability on a large scale.