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**Material Property Changes of Polycyanurate with Ionic Liquid and Carbon Nanotube Additives** EVELYN LOPEZ, DEVIN M. REED, SINDEE L. SIMON, Texas Tech Univ — Cyanate ester monomers react to form crosslinked polycyanurate thermosetting polymers with excellent properties, including high glass transition temperatures, low dielectric loss, and good fracture toughness. To further optimize their mechanical properties, carbon nanotubes (CNs) are added to the di-functional cyanate ester monomer (DCE) and an imidazolium based ionic liquid (IL) is used as a mixing agent. Such techniques have been successfully applied in epoxy systems, however there is little data for cyanate esters, although their properties are comparable, and in some cases, better than, that of epoxy based systems. Here we use differential scanning calorimetry to measure the reaction rate kinetics and glass transition temperature ( $T_g$ ) for three different systems: pure DCE, DCE + IL, and DCE + IL + CNs. The fracture toughness of the three systems will also be measured. Preliminary results show that the glass transition temperature decreases with the addition of ionic liquids, but the decrease is greater than that predicted by the rule of mixtures.

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