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Signatures of Aging: Comparison between Colloidal and Molecular Glasses XIAOJUN DI, Dept of ChE, Texas Tech Univ., K.Z. WIN, GREGORY MCKENNA, T. NARITA, F. LEQUEUX, S. PULLELA, Z. CHENG, DEPT OF CHE, TEXAS TECH UNIV TEAM, PPMD, UPMC-ESPCI-CNRS, FRANCE TEAM, DEPT OF CHE, TEXAS A&M UNIV TEAM — Colloids near to the glass concentration are often taken as models for molecular glass formers. Yet, one of the most important aspects of the dynamics of molecular glasses, structural recovery, remains to be examined in colloids. We use DWS to investigate structural recovery in a thermosensitive PNIPAM colloidal suspension in the glass concentration range. The three classical aging signatures observed in molecular glasses: intrinsic isotherms, asymmetry of approach and memory effect, are investigated with this colloid and the results are compared with those typical of molecular glasses. We find: 1 for the intrinsic isotherms, the colloid shows dramatic changes in relaxation time at equilibrium while the times required to reach the equilibrium state are nearly independent of the concentration; 2 for the asymmetry of approach, the observed nonlinearity is similar to that in molecular glasses; 3 for the memory experiment, while the memory effect is seen in the colloid, the response is qualitatively different than in the molecular glass.

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