

Abstract Submitted
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Aging rates of glassy suspensions of thermosensitive microgel particles FRIEDER MUGELE, DIRK VAN DEN ENDE, EKO PURNOMO, University of Twente, PHYSICS OF COMPLEX FLUIDS TEAM — We performed rheological measurements of the aging behaviour of soft microgel particle suspensions with a thermally controllable degree of glassiness. Linear measurements display aging at a rate that decreases upon approaching the glass transition. Applying the recently proposed non-linear strain rate frequency superposition (SRFS) principle, we identify the corresponding structural relaxation time at a frequency well below the range accessible in the linear measurements. Consistent with the linear measurements, we find that both the relaxation time increases with the sample life time and the corresponding aging rate vanishes at the glass transition. Except for the vicinity of the glass transition, the aging rate of the structural relaxation time agrees quantitatively with the predictions derived from the linear measurements using the soft glassy rheology model (SGR), thereby corroborating the validity and usefulness of both the SRFS principle and the SGR model.

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