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POS-58 Study of a field-tunable colloid-polymer solution (SMC Poster)

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In a colloid-polymer mixture, non-adsorbing polymer controls the magnitude as well as the range of the interaction between the colloidal particles. In such a system, a network forming gel phase can be observed due to the adsorption of polymer on micrometer-sized colloidal particles. With tunable interactions, such systems could also be used for qualitative studies of phase transition kinetics.An easy and externally controllable tuning can be achieved by the application of AC external electric field to the colloid-polymer system. The external AC electric field induces dipolar interaction in a colloidal suspension which is an important driving force for nanoparticle self-organization. We will report the effect of an AC external field on the Brownian colloidal particles suspended in a polymer solution. Study of such tunable system can lead to the development of switchable and responsive materials.

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