Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Creep and Recovery of Electroactive Polyaniline Suspension PIYANOOT HIAMTUP, ANUVAT SIRIVAT, PPC, Chulalongkorn University — Creep and recovery behaviors of the PANI/silicone oil suspensions were investigated under applied electric field to explore the effects of field strength and particle concentration. The data show that, at any applied shear stress, the creep curves of this ER fluid showed a large instantaneous elastic response, whereas the retarded elastic and the viscous responses were very small and they disappeared as applied stress was increased. After the removal of applied stress, the strain decreased but did not completely relax to its original value indicating that the fluid exhibited a partially elastic recovery. However, it was noted that the recovery after stress removals disappeared when the strain was higher than the critical values $\sim$ 0.4-0.5, independent of particle concentration and field strength. It was also found that creep resistance of EB/Silicone oil suspension were clearly dependent on both field strength and particle concentration.

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Date submitted: 15 Nov 2005 Electronic form version 1.4