

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Role of Surface Tension in Magnetorheological Adhesion CARLOS ORELLANA, HEINRICH JAEGER, The University of Chicago — Magnetorheological (MR) fluids are colloidal suspensions of magnetizable particles that show an increment the yield stress and in the apparent viscosity in the presence of a magnetic field. It has been shown previously that MR fluids can be used for field-controlled static adhesion to non magnetic surfaces. Here we demonstrate the important role the surface tension plays in this adhesion effect (for a low viscosity carrier fluid) and that the adhesive property is not related to the field-dependent yield stress.

Carlos Orellana
The University of Chicago

Date submitted: 28 Nov 2012

Electronic form version 1.4