

Abstract Submitted
for the DFD08 Meeting of
The American Physical Society

Vertical structures in vibrated wormlike micellar solutions TAMIR EPSTEIN, ROBERT DEEGAN, Physics Department, University of Michigan — Vertically vibrated shear thickening particulate suspensions can support a free-standing interfaces oriented parallel to gravity. We find that shear thickening wormlike micellar solutions also support such vertical interfaces. Above a threshold in acceleration, the solution spontaneously accumulates into a labyrinthine pattern characterized by a well-defined vertical edge. The formation of vertical structures is of interest because they are unique to shear-thickening fluids, and they indicate the existence of an unknown stress bearing mechanism.

Tamir Epstein
Physics Department, University of Michigan

Date submitted: 02 Aug 2008

Electronic form version 1.4