

Abstract Submitted
for the DFD11 Meeting of
The American Physical Society

An experimental study of gravity-driven thin-film flow with buoyant particles WYLIE ROSENTHAL, Harvey Mudd College, PAUL LATTE-
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versity of Southern California, MATTHEW MATA, ALIKI MAVROMOUSTAKI,
ANDREA BERTOZZI, University of California, Los Angeles — Our experimental
study involves silicone oil with buoyant foamed glass spheres, flowing under the
action of gravity. We perform an extensive parametric study varying the angle of
inclination, particle size, density and concentration. In the case of heavy particles,
three regimes arise involving settling of particles to the substrate versus settling to
the front of the flow. In contrast, only one regime is observed with buoyant parti-
cles, however the dynamics depart significantly from that of a clear fluid. We discuss
results for front position versus time as well as changes in the fingering instability
as a function of experimental parameters.

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Date submitted: 04 Aug 2011

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