

Abstract Submitted
for the DFD14 Meeting of
The American Physical Society

Partial coalescence of sessile drops with different liquids¹ RODICA BORCIA, MICHAEL BESTEHORN, Brandenburgische Technische Universität Cottbus-Senftenberg — We examine numerically the interaction between two deformable drops consisting of two perfectly miscible liquids sitting on a solid substrate under a given contact angle. Driven by solutal Marangoni forces, several distinct coalescence regimes are achieved after the droplets collision [1]. Phase diagrams for different control parameters are emphasized, which give predictions about drop behavior along the solid substrates, control of various interfacial effects, manipulations of tiny droplets in micro- and nano-fluidic devices without power supply, design of droplets or cleaning surfaces.

[1] R. Borgia, M. Bestehorn, *Langmuir* **29** (2013) 4426; *Fluid Dynamics Research* **46** (2014) 041405.

¹This work was partially supported by Deutsche Forschungsgemeinschaft (DFG) under the project “Dynamics of interfaces between drops with miscible liquids.”

Rodica Borgia
Brandenburgische Technische Universität Cottbus-Senftenberg

Date submitted: 13 Jun 2014

Electronic form version 1.4