

Abstract Submitted
for the DFD17 Meeting of
The American Physical Society

Two Liquids Competing On A Glass Substrate MARINE BOROCCO, DAVID QUERE, CHRISTOPHE CLANET, PMMH, ESPCI, Paris, and LadHyx, Ecole Polytechnique, Palaiseau, France, JEAN-RENE AUTHELIN, CHARLOTTE PELLET, Sanofi, Vitry-sur-Seine, France — The advancing and receding contact angles of a liquid drop on glass are well defined. But how do the contact angles evolve when air is replaced by a second liquid? Based on the liquid-gas-solid case, we would expect the dynamic liquid-liquid-solid contact angles to depend on the capillary number only. For our study, we use a glass capillary tube, initially filled with silicone oil, in which a drop of water is injected. Surprisingly, the water-oil-glass contact angles also depend on the time the substrate spent in contact with silicone oil only, before the water was added. A change in that waiting time can cause large variations of the advancing and receding contact angles.

Marine Borocco
PMMH, ESPCI, Paris, and LadHyx, Ecole Polytechnique, Palaiseau, France

Date submitted: 25 Sep 2017

Electronic form version 1.4