

Abstract Submitted
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Dancing droplets: Chemical space, substrates, and control NATE CIRA, ADRIEN BENUSIGLIO, MANU PRAKASH, Stanford University, Dept of Bioengineering — Previously we showed that droplets of propylene glycol and water display remarkable properties when placed on clean glass due to an interplay between surface tension and evaporation. (Cira, Benusiglio, Prakash: Nature, 2015). We showed that these mechanisms apply to a range of two-component mixtures of miscible liquids where one component has both higher surface tension and higher vapor pressure on a variety of high energy surfaces. We now show how this rule can be cheated using a simple trick. We go on to demonstrate applications for cleaning, and show how this system works on substrates prepared only with sunlight. We finish by demonstrating active control of droplets, allowing access to a host of new possibilities.

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