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**Contact angle saturation in electrocapillary effect** SHAUN BERRY, Tufts University, JAKUB KEDZIERSKI, MIT Lincoln Laboratory, BEHROUZ ABEDIAN, Tufts University — Electrocapillary behavior results from a reduction of the surface energy at the solid/liquid interface due to an applied electrical potential. The effect causes the contact angle of a hydrophobic liquid droplet to decrease and wet the solid surface. Controlling this effect has potential applications in microfluidic devices. A limiting behavior is contact angle saturation. Contact angle saturation occurs when a high enough voltage is applied to the liquid phase resulting in a limiting contact angle beyond which there is no change in the droplet shape regardless of the applied voltage. This paper presents recent experimental results of our investigation into the parameters effecting electrocapillary behavior of the alkane/water/surfactant system. We also present a model explaining contact angle saturation and provide results on parameters such as surfactant concentration and temperature on this phenomenon.

Shaun Berry  
Tufts University

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