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**Manipulating Water Droplet Behavior on Aluminum Surfaces Using Micro-lithography** MUIDH ALHESHBRI, TYLER BREST, ANDREW SOMMERS, KHALID EID, Miami University — In this work, we use photolithography to create alternating hydrophobic/hydrophilic Cu micro-channels on an aluminum surface. The contact angle that is formed between water droplets and the surface is clearly asymmetrical due to the different surface properties at the contact line between the droplets and the patterned surface. An HDT self-assembled mono-layer allows for a large change in the water droplet contact angle on the copper, but seems to have no effect on the aluminum surface. We will show our results on the effect of the surface patterning, oxidation of the metal and surface roughness on water droplet behavior.

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