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Supplemental Information Methods to Pattern Liquid Metals

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Figure S1: Unlike most liquids, planar thin films of EGaIn are difficult to produce using spin coating due to its high surface tension and surface oxide, which causes the metal to flow along paths where the oxide yields.



Figure S2: Method for patterning Galinstan with selective surface wetting. Figure adapted from Ref. 23. Copyright Wiley 2013.



Figure S3: Method for molding EGaIn using vacuum filling and freeze casting. Figure adapted

from Ref. 54 with permission from The Royal Society of Chemistry.



Figure S4: Droplet-by-droplet μCP with EGaIn. (i) Process steps: ¹dip PDMS tip into pool of EGaIn, ²retract tip, ³move wetted tip to substrate, ⁴press tip into substrate to deposit EGaIn droplet; (ii) 340 μm diameter droplets; (iii) solid lines produced by spacing droplets 200 μm apart. Adapted with permission from Ref. 63. Copyright 2013 American Chemical Society.



Figure S5: Traditional spreading techniques do not allow for smooth thin films of EGaIn (a). Inspection under an optical microscope (b) shows a thin but non-uniform coating of EGaIn. The sample is back-lit with light. If the film was uniform, it would not be possible to see through the film, but it is apparent that light travels through the films suggesting the thickness is not uniform. Scale bar on (b) is 1 mm.