

Abstract Submitted
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Microcontact printing Using Metallic Salt Solution “Ink”¹ CARY ALLEN, JOSH DORR, IAN SCHICK, EVAN SCHICK, REUBEN COLLINS, Colorado School of Mines, ANISH KHANDEKAR, THOMAS KUECH, University of Wisconsin-Madison — Arrays of micron size metal dots were patterned onto Si substrates using microcontact printing. Poly(dimethylsiloxane) stamps were prepared from Si masters fabricated using photolithography and anisotropic etching. Aqueous GaCl₃ and In(NO₃)₃ inks were microcontact printed onto Si substrates, creating arrays of micron size metal salt deposits. The In(NO₃)₃ deposits were further processed by annealing in an N₂:H₂ (9:1) forming gas environment at 600 °C which converted the deposits into In metal. Details of the stamp preparation and printed patterns, along with, characterization using atomic force microscopy and X-ray diffraction will be presented. The ability to inexpensively pattern metal arrays on semiconductor surfaces has implications for ohmic contacts and, with additional processing, arrays of semiconductor crystallites for optoelectronic applications.

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