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Aluminum Nanowire Arrays via Soft Nanoimprint Lithography¹ MICHAEL J. NAUGHTON, NATHAN T. NESBITT, JUAN M. MERLO, AARON H. ROSE, YITZI M. CALM, LUKE A. D'IMPERIO, DAVE T. COURTNEY, STEVE SHEPARD, KRZYSZTOF KEMPA, MICHAEL J. BURNS, Boston College — We have previously reported a method to fabricate freestanding, verticallyoriented, and lithographically-ordered Al nanowire arrays via directed assembly, and demonstrated their utility as a plasmonic waveguide². However, the process, a variation on the preparation of anodized aluminum oxide (AAO), involved imprinting Al with a hard stamp, which wore down the stamp and had a low yield of Al NWs. Here we show a new nanoimprint lithography (NIL) technique that uses a soft stamp to pattern a mask on the Al; it provides a greater yield of Al NWs and is less destructive to the stamp, providing a path to applications that require NW arrays over macroscopic areas.

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²N. T. Nesbitt, J. M. Merlo, A. H. Rose, Y. M. Calm, K. Kempa, M. J. Burns, & M. J. Naughton, *Nano Lett.* **15**, 7294-7299 (2015)

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