

Abstract Submitted  
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**Quantized conductance observed in reversible atomic contacts fabricated by template electroplating using an on-membrane anode<sup>1</sup>**  
ZUXIN YE, WENHAO WU, Texas A&M University — We report a new template electroplating method for fabricating reversible atomic contacts between a long nanowire and a macroscopic contact pad. In comparison to a typical template method using a standing-alone anode, we directly evaporate the anode on one of the porous membrane surfaces. Single nanowires, upon emerging from the pores, make reversible atomic contacts with the on-membrane anode via a self-terminating mechanism. Quantized conductance steps have been observed in a controlled fashion during deposition and dissolution. This method can potentially be applied for the controlled fabrication and integration of nanowires, point contacts, and nanosized interconnects in template-based nanofabrication.

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