

Abstract Submitted
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Metal organic chemical vapor deposition of core-shell InAs-Al nanowires for proximity-induced superconductivity¹ T. R. HARTKE, J. STEHLIK, J. R. PETTA, Department of Physics, Princeton University — The zero-bias conductance peaks observed in proximitized InSb nanowires have been interpreted as evidence of Majorana fermions.² However, these observations are complicated by the presence of a non-zero conductance throughout the gap, which has been termed a “soft-gap.” The characteristics of the gap can be improved by using MBE to epitaxially grow a superconducting aluminum shell around an InAs core.³ Here we use metal organic chemical vapor deposition (MOCVD) to grow high quality InAs nanowires on predefined Au catalyst sites. An aluminum shell is deposited immediately after the InAs growth is terminated. The resulting core-shell nanowires are structurally and electrically characterized.

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²V. Mourik *et al.*, *Science* **336**, 1003 (2012).

³W. Chang *et al.*, *Nature Nanotech.* **10**, 232 (2015).

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