

Abstract Submitted  
for the NES18 Meeting of  
The American Physical Society

**Growth of magnetic nanowires along freely selectable  $\langle hkl \rangle$  crystal directions** YE TAO, Rowland Institute, CHRISTIAN DEGEN, ETH Zurich, COLLABORATION COLLABORATION, COLLABORATION COLLABORATION — The production of nanowire materials, uniformly oriented along any arbitrarily chosen crystal orientation, is an important, yet unsolved, problem in material science. Here, we present a generalizable solution to this problem. The solution is based on the technique of glancing angle deposition combined with a rapid switching of the deposition direction between crystal symmetry positions. Using iron–cobalt as an example, we showcase the simplicity and capabilities of the process in one-step fabrications of  $\langle 100 \rangle$ ,  $\langle 110 \rangle$ ,  $\langle 111 \rangle$ ,  $\langle 210 \rangle$ ,  $\langle 310 \rangle$ ,  $\langle 320 \rangle$ , and  $\langle 321 \rangle$ -oriented nanowires, three-dimensional nanowire spirals, core–shell heterostructures, and axial hybrids. Our results provide a new capability for tailoring the properties of nanowires, and should be generalizable to any material that can be grown as a single-crystal biaxial film.

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Date submitted: 12 Mar 2018

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