

# **Wafer-scale high-throughput ordered growth of vertically aligned ZnO nanowire arrays**

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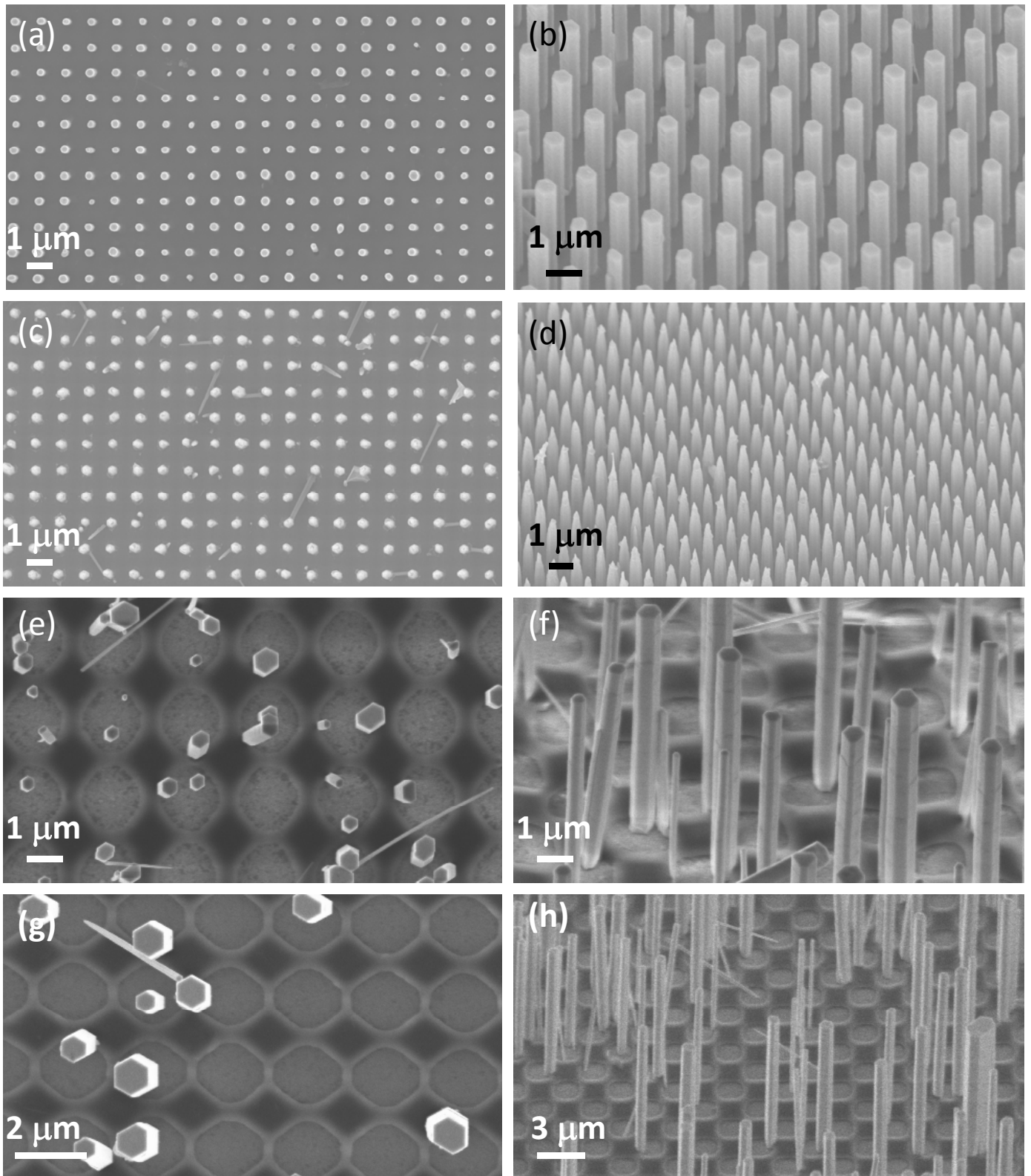


Figure S1. LIL-Patterned growth of ZnO NW arrays on GaN substrate with different periods and sizes of opened-holes. (a) and (b) Top-view and 45° side-view SEM images of vertically aligned ZnO NW arrays on GaN substrate with 200 nm opened-holes and 1  $\mu\text{m}$  period synthesized at 85 °C. (c) and (d) Top-view and 45° side-view SEM images of vertically aligned ZnO NW arrays on GaN substrate with 200 nm opened-holes and 1  $\mu\text{m}$  period synthesized at 95 °C. (e), (f), (g) and (d) Top-view and 45° side-view SEM images of vertically aligned ZnO NW arrays on GaN substrate with  $>1 \mu\text{m}$  opened-holes and 2.4  $\mu\text{m}$  period synthesized at 80 °C.

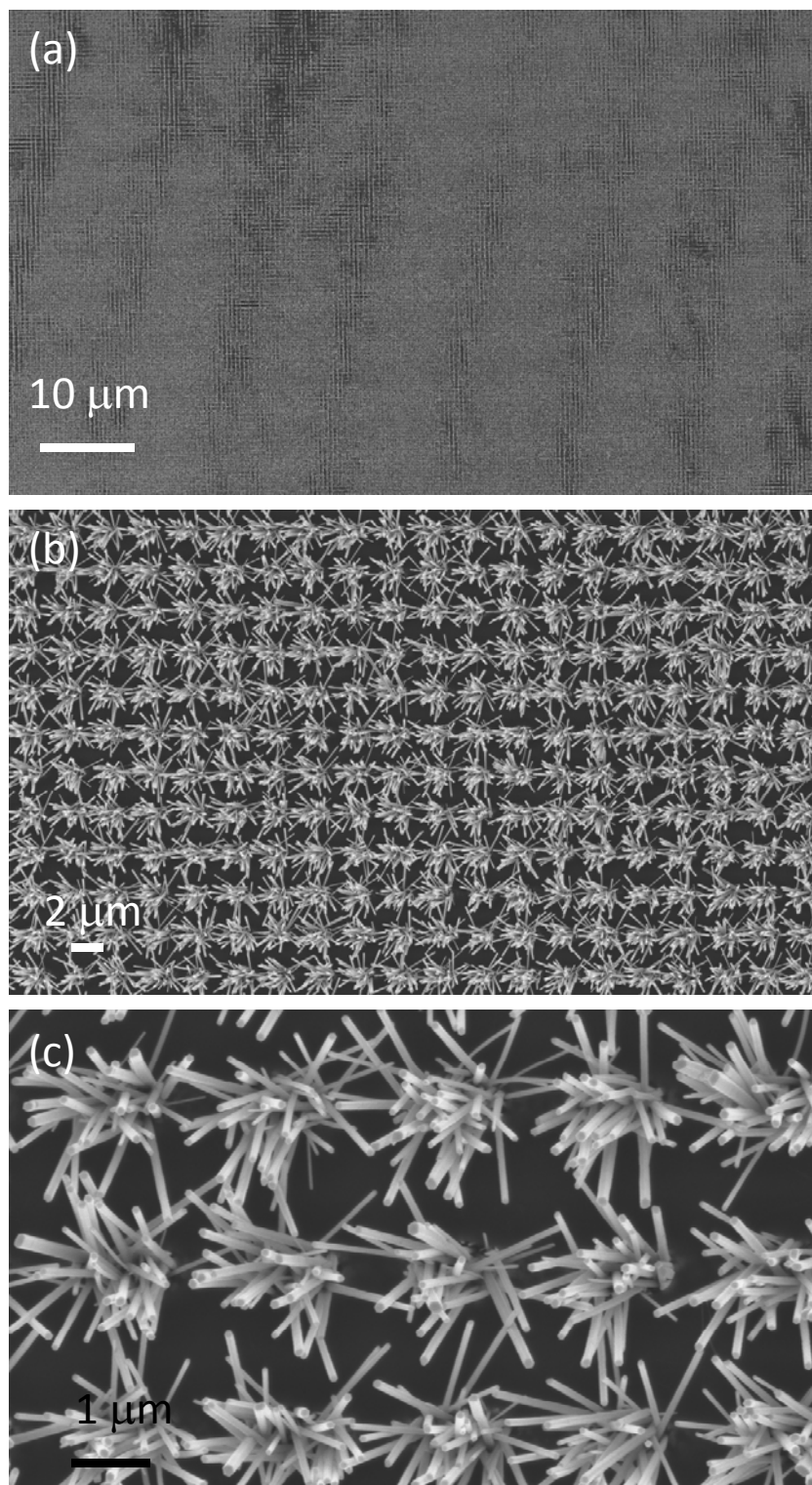


Figure S2. The homoepitaxial growth of randomly aligned ZnO NW arrays on a silicon wafer covered with a polycrystalline ZnO seed layer via LIL approach. (a) , (b) and (c) Top-view SEM images of randomly aligned ZnO NW arrays on Si substrate in large-scale uniform pattern at different magnifications.