

Supplementary Information:

Crystallographic orientation control and optical properties of GaN nanowires

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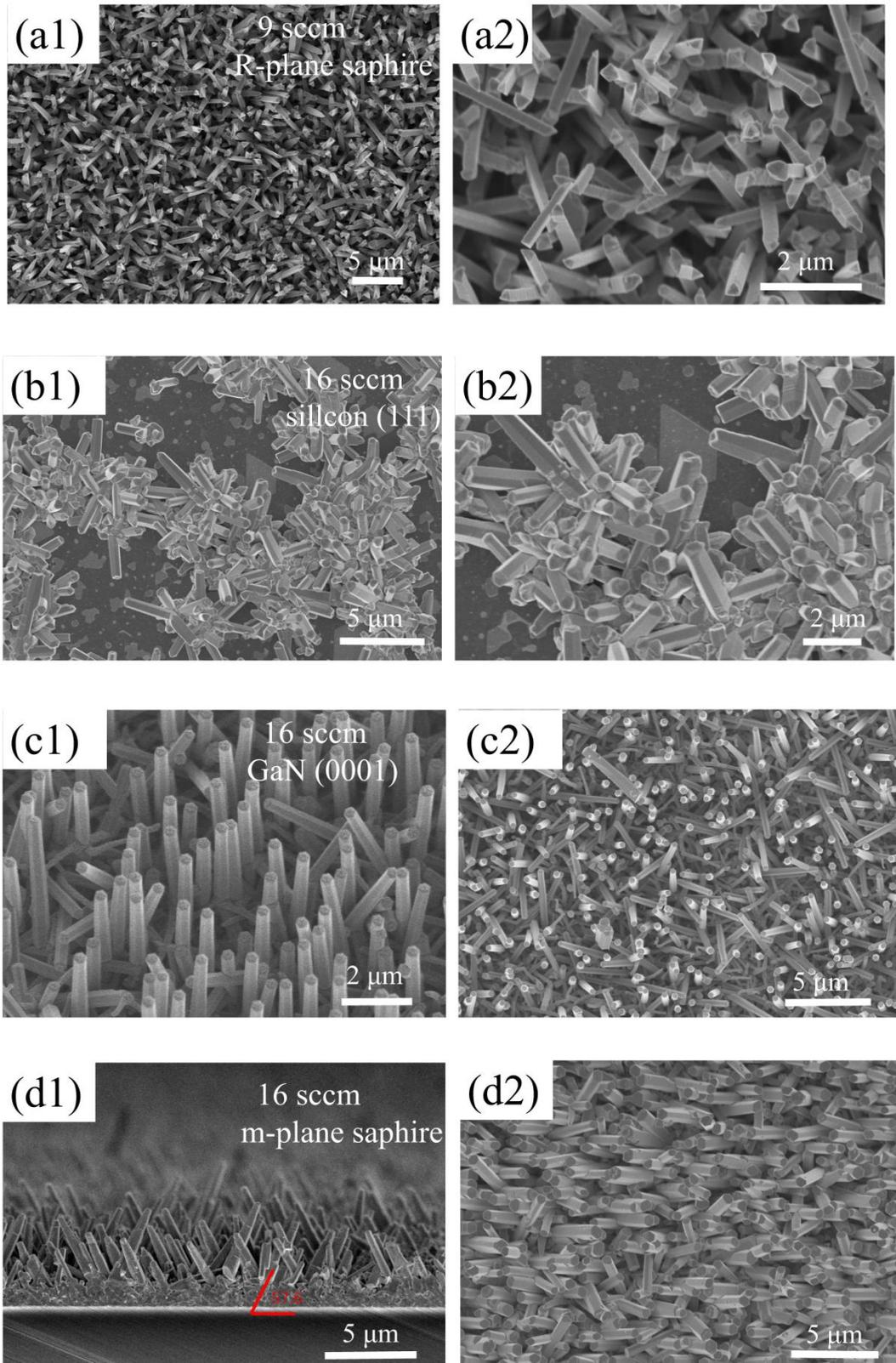


Figure S1. SEM images of the GaN NWs grown on different substrates: (a1,a2) r-plane sapphire under under GaCl flow rate of 9 sccm; (b1,b2), (c1,c2) and (d1,d2) silicon (111), GaN wafer (0001) and m-plane sapphire grown under GaCl flow rate of 16 sccm.

All of the results indicate triangular cross-section non-polar NWs growth under a low GaCl flow rate while the hexagonal cross-section polar NWs growth under high GaCl flow rate.

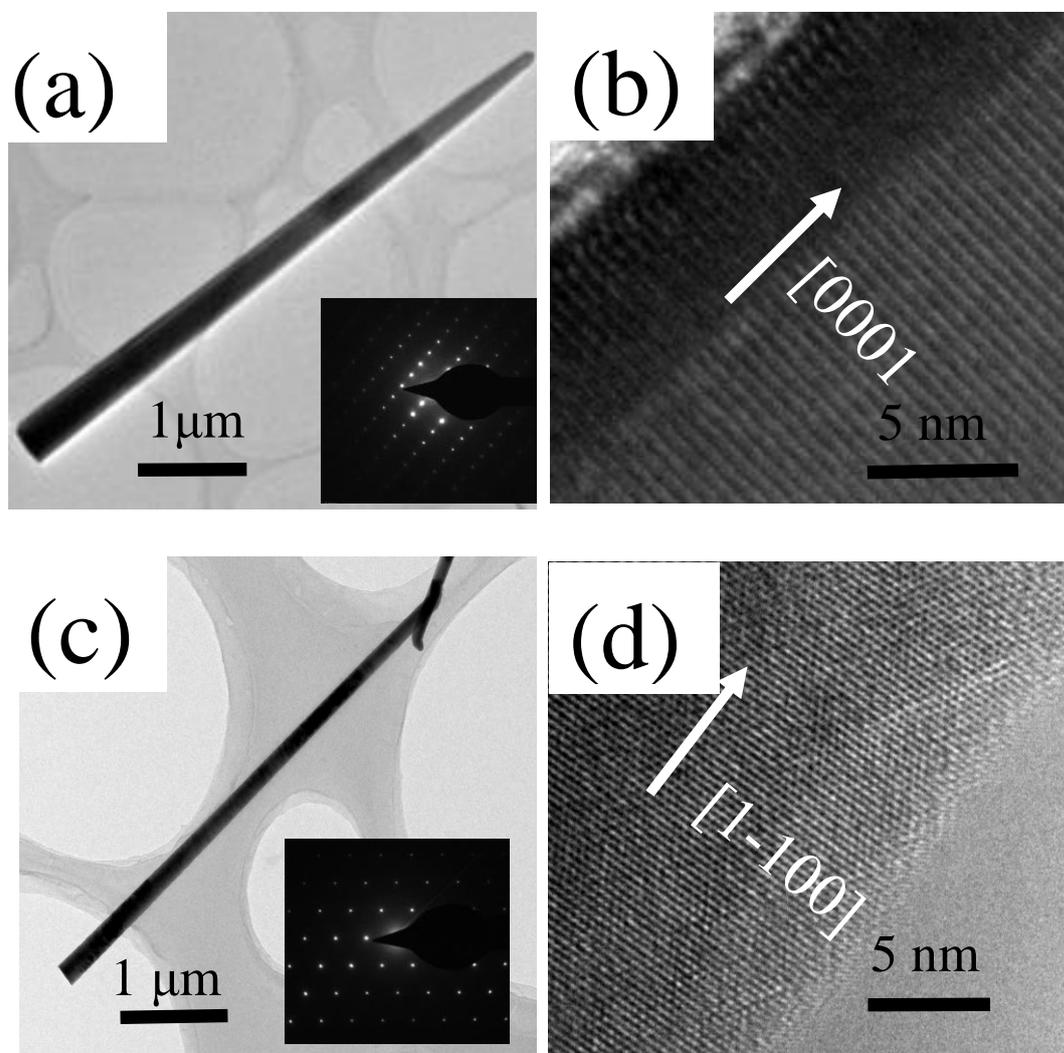


Figure S2. TEM images GaN NWs grown on c-plane sapphire, which is obtained with GaCl flow of 16 sccm with Ni/Au thickness of 4/4 nm. Low- and high-magnification TEM is shown in (a), (c) and (b), (d). The corresponding SAED is shown in inset (a) and (c). These results shown some nanowires are along m-axis while most of the NWs are c-axis.