

Nano/Micro-Structured ZnO Rods Synthesized by Thermal Chemical Vapor Deposition with Perpendicular Configuration

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For the synthesis of nano/micro-structured ZnO rods, thermal chemical-vapor deposition (CVD) system with perpendicular setup was used, seen in Figure S1. The experimental setup was vertically positioned by reversely loading the ZnO-seeded Si substrate at the top of an alumina holder. The distance between the substrate and ZnO+C precursor was fixed at about 4 mm.

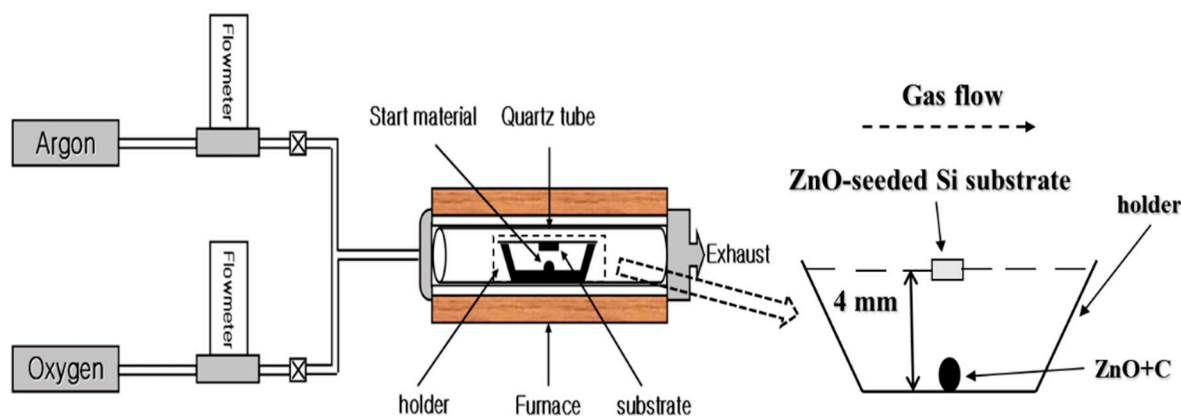


Figure S1. Schematic of thermal CVD with perpendicular setup.

Figure S2 shows the water contact angle on the surface of ZnO-seeded Si substrate. The contact angle of ZnO-seeded Si substrate surface was measured using the contact angle measurement equipment (KRUSS, DSA100, Hamburg, Germany) at room temperature. Surface energy of ZnO-seeded Si substrate was calculated by using the Neumann method [S1]. As shown in Figure S2, the contact angle of ZnO-seeded Si substrate surface was 92 ° and the corresponding surface energy was 20.9 dyne/cm, indicating a slight hydrophobic surface. These are similar to that reported by Davea et.al. [S2].

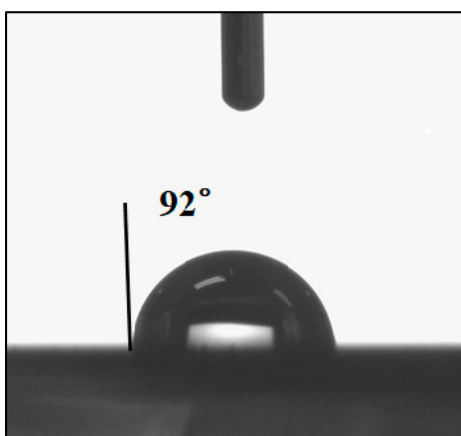


Figure S2. Water contact angle on the surface of ZnO-seeded Si substrate.

References

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- [S2] Davea, P. Y.; Patela, K. H.; Chauhana, K. V.; Chawlab, A. K.; Rawala, S. K.; Examination of zinc oxide films prepared by magnetron sputtering, *Procedia Technology* **2016**, 23, 328–335.