

Heterostructures of ultrafine ZnO nanorods and carbon-coated SiC nanowires

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Ultrafine ZnO nanorods can be directly grown on carbon-coated SiC nanowires using metalorganic chemical vapor deposition at temperatures of 500~600°C. First, carbon-coated SiC nanowires were fabricated on NiO catalyzed Si(100) in a WO₃ and C carbothermal reduction environment. The diameter range of SiC nanowires was 20~50nm. We flowed DEZn source for 1~2 hours on the SiC nanowires, then ZnO nanorods were grown on the surface of SiC nanowires without the presence of a catalyst. The diameter range of ZnO nanorods was 7~20nm. Heterostructures were analyzed by SEM, EDS, TEM, XRD.