

Low-temperature synthesis of ZnO by wet chemical method

ABSTRACT

Zinc oxide (ZnO) wire was synthesized by hydrothermal method at 70 $\hat{\text{A}}$ $^{\circ}$ C by using Zn acetate dihydrate and ammonium hydroxide as the starting material. The sample was characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM), electron dispersive X-ray (EDX), electron diffraction (ED) and transmission electron microscopy (TEM). The XRD result confirmed the formation of ZnO with wurtzite structure. The ED reveals that ZnO wire is single crystal and grows up along [001] direction. Influence of temperature on crystal growth was evaluated. Results shown that increase in temperature shorten the length of wire.

Keyword: Low temperature synthesis; Zinc oxide; Wet chemical method