

Structure and Photoluminescence Properties of SnO₂/Zn Core-shell Nanowires

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Abstract: SnO₂-core/Zn-shell heteronanowires were fabricated by a two-step process: thermal evaporation of Sn powders and employing a sputtering technique with a Zn target. X-ray diffraction, high-resolution transmission electron microscopy, and EDX spectra coincidentally indicated that the shell layer comprised the Zn phase. From Gaussian deconvolution studies, we observed that photoluminescence (PL) spectra consisted of yellow, green, and ultraviolet (UV) emission bands, regardless of shell-coating. We speculated the possible mechanisms of these emission peaks.