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Combustion Formation of Novel Nanomaterials: Synthesis and Cathodoluminescence of Silicon Carbide Nanowires

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This paper presents the combustion synthesis and characterization of one-dimensional silicon carbide nanostructures (nanowires of 3C-SiC polytype with zincblend structure) by means of cathodoluminescence technique. Cathodoluminescence spectra of nano-SiC samples and, as a reference, of a commercially available SiC micropowder are compared. It is shown that the emission band at 1.97 eV which is slightly evidenced in the spectrum of the commercial SiC under 10 keV electron beam irradiation becomes the prevailing band in CL of the purified silicon carbide nanowires.

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