

Abstract Submitted
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Self-Doped Titanium Oxide Nanonail Growth on Silicon by Solid-State-Reaction JAEWU CHOI, CHANG-MOOK LEE, Kyung Hee University — Titanium oxide nanonails are directly grown on silicon with a thermal oxide by the solid-state-reaction of the metallic multilayer on a silicon substrate with a thick thermal oxide at a relatively low growth temperature, 800 °C, made possible in the presence of a carbon precursor. The pattern of the multilayer growth pad on silicon promoted the nanonail growth. The nanonails are spontaneously doped by the constituent elements of the multilayer and carbon of the hydrocarbon. The doped titanium oxide nanonails show cathode luminescence in a visible and near-infrared spectrum range. The vertical location of the catalyst layer in the multilayer growth pad directly controlled the head formation of the titanium oxide nanonails.

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