

Titanium Oxide Thin Films Prepared by
Plasma Chemical Vapor Deposition for
Different TTIP Concentrations

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Titanium oxide films have been prepared from titanium tetra-isopropoxide (TTIP) precursor by using plasma chemical vapor deposition (PCVD) system. The films were deposited onto silicon substrates under a constant operating pressure of nitrogen gas. The composition and the structures of the thin films have been investigated by SEM. We observed the TiO₂ thin film with smooth morphology at low initial TTIP concentration, granular morphology at medium initial TTIP concentration, and columnar morphology at high initial TTIP concentration. It is proposed that we can prepare the TiO₂ thin film with controlled morphologies in one-step process by just adjusting the initial precursor concentration in PCVD.