PROGRAM

TT-P035

UV-enhanced Atomic Layer Deposition of Al2O3 Thin Film

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We have deposited Al2O3 thin films on Si substrates at room temperature by UV-enhanced atomic layer deposition using trimethylaluminum (TMA) and H2O as precursors with UV light. The atomic layer deposition relies on alternate pulsing of the precursor gases onto the substrate surface and subsequent chemisorption of the precursors. In many cases, the surface reactions of the atomic layer deposition are not completed at low temperature.

In this experiment, the surface reactions were found to be self-limiting and complementary enough to yield uniform Al2O3 thin films by using UV irradiation at room temperature. The UV light was very effective to obtain the high quality Al2O3 thin films with defectless.

Keywords: UV-ALD, Al2O3