

## Effect of a seed layer on atomic layer deposition-grown tin oxide

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**Abstract :** The effect of seed layer on the preparation of tin oxide thin film by ALD using tetrakis(ethylmethylamino) tin precursor was examined. The average growth rate of tin oxide film is about 1.4 Å/cycle from 50°C to 150°C. The rate rapidly decreases at the substrate temperature at 200 °C. The seed effect was not observed in crystal growth of thin oxide. However, the crystalline growth of seed material in tin oxide was detected by thermal annealing. ALD-grown seeded tin oxide thin film after thermal annealed was characterized by ellipsometry, XRD, AFM and XPS.

**Key Words :** Tin oxide, ALD, seed layer, thermal anneal