

**Molecular Layer Deposition of Organic-Inorganic Alloy Thin Films from *p*-Phenylenediamine, Trimethylaluminum and Water**

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Recently, organic-inorganic hybrid or alloy thin films have attracted great attention, because the composites of organic and inorganic materials have structural flexibility owing to the presence of the organic moiety. Here we report molecular layer deposition of organic-inorganic alloy thin films which consists of an organic layer from *p*-phenylenediamine and an inorganic layer of alumina. For the alumina layer, trimethylaluminum and water were used as Al and O precursors, respectively. Growth behavior of the alloy thin films were investigated in the growth temperature range of 200 ~ 400 °C. Their electrical properties were evaluated from Au/Alloy film/Si capacitors by current-voltage and capacitance-voltage measurements. Especially we discuss a possibility to use the alloy films as a charge trap layer for flash memory.