Supporting Information

Quantitative analysis of the incorporation behaviors of Sr and Ti atoms during the atomic layer deposition of $SrTiO_3$ thin films

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ALD saturation behavior of SrO film using H_2O as oxygen source

To clarify the difference of oxidation potential on re-oxidization of TiO_{2-x} between H_2O and O_3, the substrate temperature and oxygen source injection time were fixed to 370 ^oC and 2 s, respectively. The growth behavior of SrO thin films formed using $[Sr(demamp)(tmhd)]_2$ and H_2O evaluated as Figure S1 exhibits typical self-limiting film growth behavior of ALD reaction with the sequence consisted of $[Sr(demamp)(tmhd)]_2$ injection (5 s), Ar purge (5 s), H_2O injection (2 s), and Ar purge (5 s).

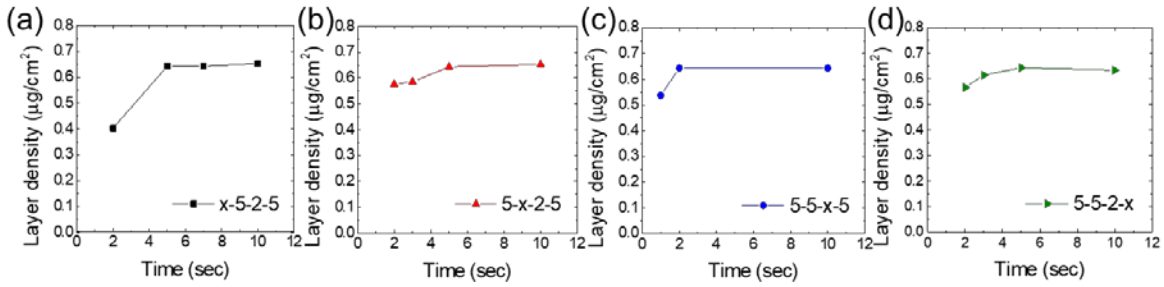

Figure S1. The variations in the layer density of STO thin films deposited for 50 cycles as a function of (a) $[Sr(demamp)(tmhd)]_2$ injection time, (b) $[Sr(demamp)(tmhd)]_2$ purge time, (c) H_2O injection time, and (d) H_2O purge time.