

P-Type Amorphous Oxide Semiconductor Atomic Layer Deposition System

Technical Sheets

Metal Oxide ALD system

- Spec. of ALD hardware



System Model	Applied® Picosun® R-200 Advanced Plasma ALD
Oxide film	Al ₂ O ₃ HfO ₂ SnO _x
Precursors	PicoSolution™100 source systems for high vapor pressure precursors.
	PicoHot™300 source systems for low vapor pressure precursors.
	Picogases™ connection (NH ₃)
Source inlet cabinet	The volume of cabinet is up to storage 3 PicoSolutoin100 containers
Plasma system	ICP remote plasma generator
Plasma source	PicoPlasma™, gas line (NH ₃ , H ₂ , H ₂ /N ₂ , O ₂ , Ar)
Substrate Temp.	RT~450°C
Wafer size	Square ~ 8 inch

Metal Oxide ALD system

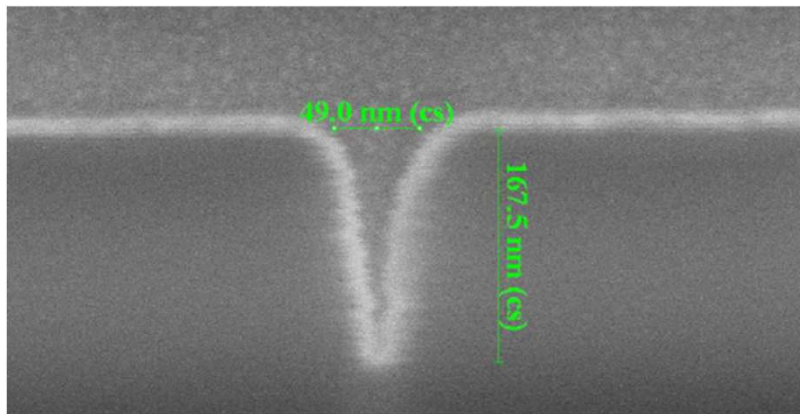
- Spec. of ALD Oxide film

Al_2O_3	HfO_2	SnOx
Growth rate : $\sim 0.9 \text{ \AA/cycle}$ U% of thickness : $\sim 1\%$ for 8' wafer	Growth rate : $\sim 0.8 \text{ \AA/cycle}$ U% of thickness : $\sim 2\%$ for 8' wafer	Growth rate : $\sim 0.15 \text{ \AA/cycle}$ U% of thickness : $\sim 10\%$ for 6' wafer

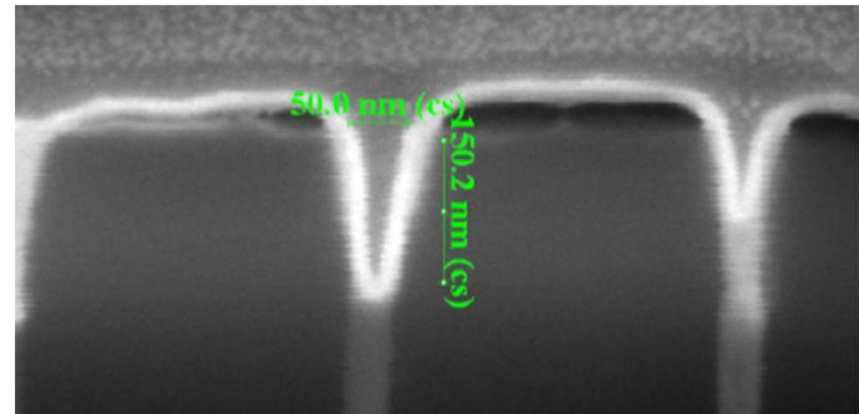
- Process Capability

- 50 nm Via filling

Al_2O_3



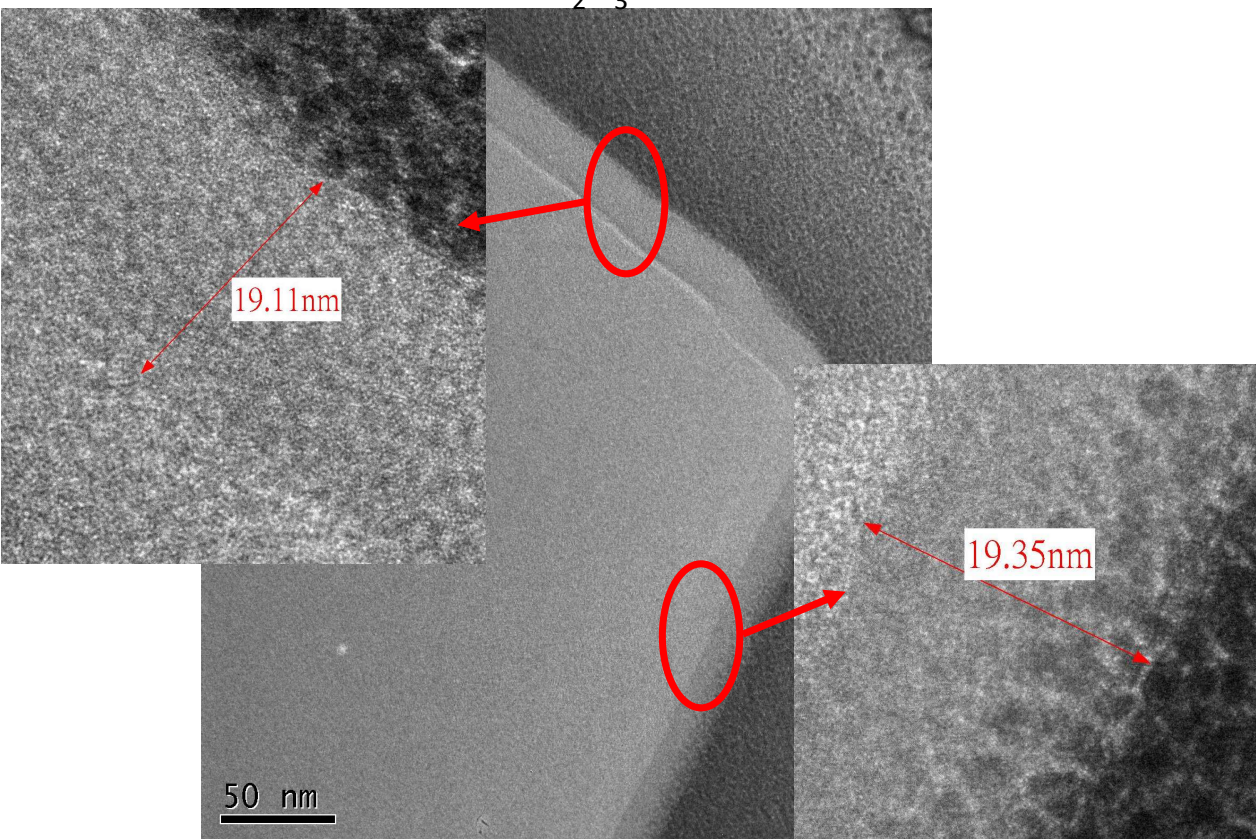
HfO_2



Metal Oxide ALD system

- Process Capability
 - Step coverage

Al_2O_3



HfO_2

