Atomic Layer Deposition (ALD)

Ultratech-Cambridge Nanotech Fiji 200

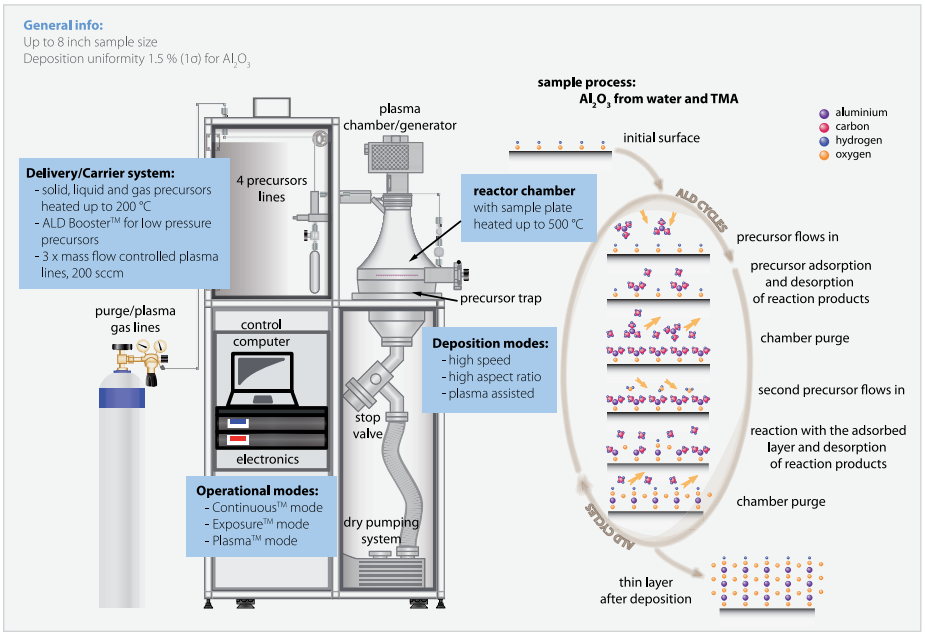
DESCRIPTION

Atomic Layer Deposition is a deposition technique for very thin layers with the thickness control down to a single atomic layer. It belongs to the CVD techniques family. The thickness precision is achieved by pulsed deposition, where first a metal-containing precursor is introduced into the chamber and after a short time (allowing for a monolayer adsorption) the chamber is pumped down. Following step is an exposure to the oxidizing precursor (for oxides) or nitrogen containing precursor (for nitrides). Thus, a monolayer of target material is grown. The metal-containing precursors are usually organometallic ones, for oxidation a water or oxygen plasma can be used, nitrida-tion is done using water or nitrogen plasma. To achieve the deposition in the ALD mode, sample is heated up to a certain temperature, for most processes being in the range 150–300 °C.

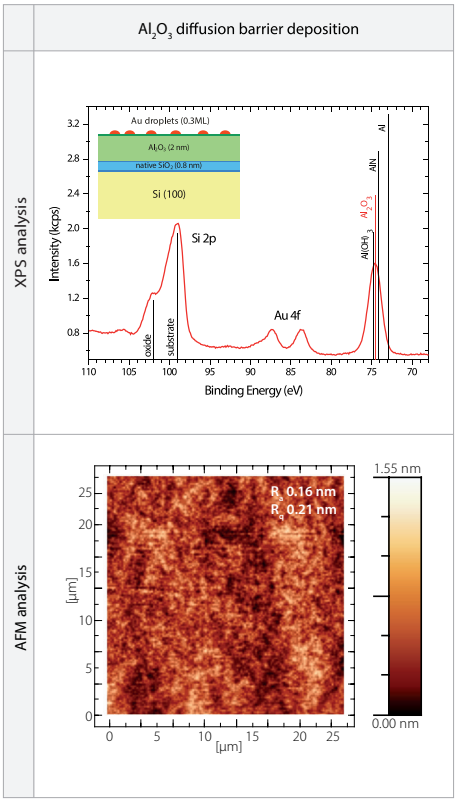
FEATURES

ALD system for up to 8“ samples, equipped with plasma generator.
Standard materials: Al_2O_3, AlN, HfO_2, HfN, TiO_2, TiN, SiO_2, SiN, other materials on request.

- thermal deposition within range RT-500 °C
- 4 precursor lines, with possible upgrade to 6
- plasma-enhanced deposition (3 plasma gas lines)
- expo mode for homogeneous deposition on high-aspect-ratio nanostructures
- controlling oftware allows preparation/modification/storage individual recipes
- fully automatic programmable operation



APPLICATIONS



MORE INFO

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