COLNATEC
The Most Advanced Film Thickness Monitors

PRODUCT GUIDE

Atomic Layer Deposition (ALD)

Problem

- Traditional quartz crystal microbalances (QCMs) do not work in ALD systems because
  - the crystal surface must be at the decomposition temperature of the gaseous precursors, and
  - the sensor head does not have temperature measurement or control

Solution

- Heated sensors with integral temperature measurement and specially constructed high temperature quartz crystals can be operated up to 500°C, duplicating ALD conditions identical to the substrates being coated
- Waterless unheated sensors that can withstand up to 500°C
- Temperature-controlling and monitoring instrumentation

Recommended Products

- RC™ or HT™ quartz crystals (up to 200°C)
- SuperQuartz™ (up to 500°C)
- Heated 100°–500°C sensor heads (Tempe™)
- Eon™ monitor

Problem

- Low temperature ALD (<150°C) cannot be accomplished with quartz, due to high noise

Solution

- Our patented, noise-resistant crystals that can be operated at 200°C with or without an integral heater in the sensor head, allowing real-time ALD measurement
- Temperature-compensating crystal instrumentation eliminate rate noise

Recommended Products

- RC™ or SuperQuartz™ quartz crystals
- Tempe™ sensor head
- Eon™ monitor

The key to perfect coatings.

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