

UMF Equipment – Atomic Layer Deposition System

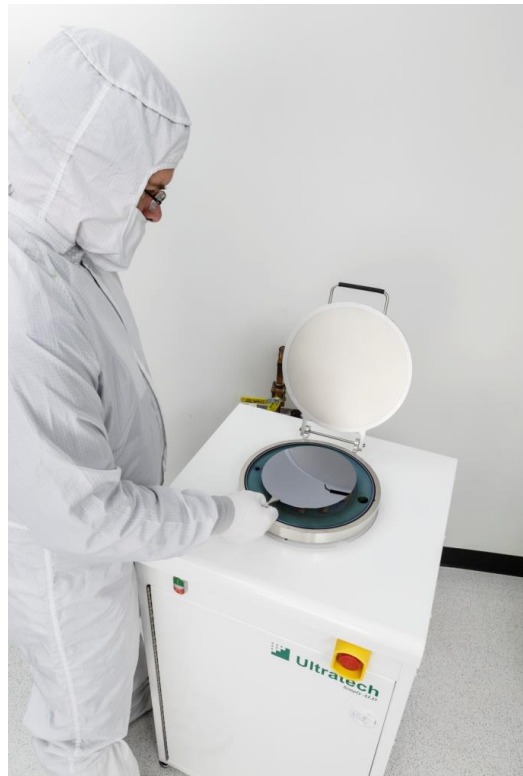
Ultratech Savannah ALD System

Atomic layer deposition (ALD) is a thin-film deposition technique based on the sequential use of a gas phase chemical process. The majority of ALD reactions use two chemicals, typically called precursors. These precursors react with the surface of a material one at a time in a sequential, self-limiting, manner. Through the repeated exposure to separate precursors, a thin film is slowly deposited. ALD is considered one deposition method for producing very thin, conformal films with control of the thickness and composition of the films possible at the atomic level. ALD is a key process in the fabrication of semiconductor devices, and part of the set of tools available for the synthesis of nanomaterials.

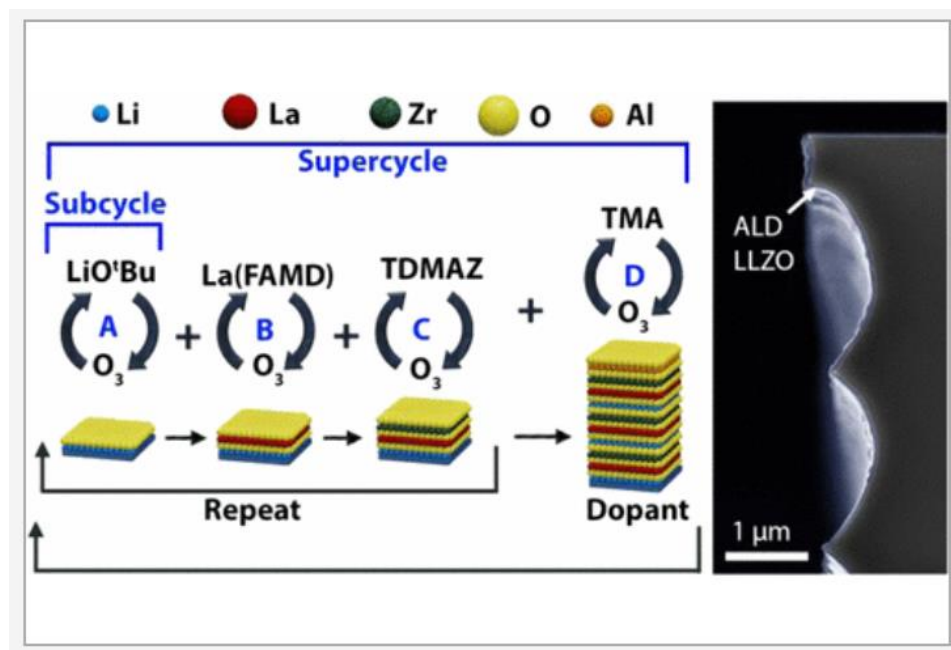
- Features:
- Substrate size: Up to 8"
 - Port: 5 precursor lines includes one ALD Booster for low vapor pressure precursors
 - Substrate temp.: max. 280°C
 - Deposition Uniformity: < 1% (1σ) for Al₂O₃ film
 - Application: Gate dielectric (microelectronics, transistors), encapsulation/ moisture barrier (solar, organic electronics, MEMS), diffusion barrier (Li-ion batteries), functionalization (graphene, carbon nanotubes)

Please refer to supplier information page: <https://www.veeco.com/products/savannah-thermal-ald-for-randd> for further details of the system.

For any inquiry, please contact Dr. Terence Wong (Tel: 3400 2075; Email: tai-lun.wong@polyu.edu.hk).



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Atomic Layer Deposition of the Solid Electrolyte Garnet $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ [Chem. Mater. 2017, 29, 8, 3785-3792]