Intermolecular Defines ALD Process for Efficient Composition Tuning of 3D Crosspoint NVM Selectors

Paper on ALD of Elemental Tellurium to be Presented at ALD Conference

SAN JOSE, Calif., July 10, 2018 -- Intermolecular, Inc. (NASDAQ: IMI), the trusted partner for advanced materials innovation, today announced a new defined ALD (Atomic Layer Deposition) process of Tellurium (Te), allowing for more efficient composition tuning for 3D crosspoint NVM selectors. A paper on the use of ALD of elemental tellurium prepared by Intermolecular's CTO organization will be presented at the ALD Conference on Tuesday, July 31, 2018 at 4:30 p.m. at the Songdo Convensia in Incheon, South Korea.

"Non-volatile memory (NVM) technologies such as resistive random access memory (RRAM) or phase change memory (PCM) has shown the potential in next generation data storage applications. NVM devices need to be packed densely in memory arrays and require a selector device and architecture with high areal density, making three dimensional (3D) integration of both the memory and selector active layers cost competitive and attractive," said Karl Littau, CTO of Intermolecular. "With our defined process, for the first time, ALD of elemental tellurium can be used to tune the composition to realize vertically integrated 3D crosspoint memory."

NVM devices use a selector device, such as the ovonic threshold switch (OTS), in series with the memory element to minimize parasitic currents in the memory array. Intermolecular has leveraged its accelerated High-Throughput Experimentation (HTE) platform to rapidly develop a conformal elemental Te ALD process to tune the composition in various OTS pertinent films. Utilizing Intermolecular's innovative platform, a suitable nucleation layer was identified and deployed to realize continuous, conformal coatings of elemental Te on high aspect ratio test structures.

Materials Innovation Resources:

ALD Brochure
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Ferroelectrics Brochure
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About Intermolecular, Inc.

Intermolecular is the trusted partner for advanced materials innovation. Advanced materials are at the core of innovation in the 21st century for a wide range of industries including semiconductors, consumer electronics, automotive and aerospace. With its substantial materials expertise, accelerated learning and experimentation platform and customer-driven approach, Intermolecular has a decade of experience helping leading companies accelerate materials innovation.

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