

MSL Lecture No. 116, July 24-25, 2008

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Atomic Layer Deposition (ALD) Technology: Current Status and Future Challenges

The atomic layer deposition (ALD) technique was originally invented in Finland in mid 1970s and then vigorously developed in 1990s in the same country, first to meet the needs of fabricating high-quality thin films for electroluminescent flat panel displays based on sulfide thin films and then for high-k and optical applications based on oxide thin films. Presently the ALD technology is in worldwide use by semiconductor industry in production of e.g. oxide films for gate dielectrics in CMOS devices. Due to its unique mechanism based on self-limiting and saturative surface reactions the technique provides us with several advantages such as atomic-level control of both the film composition and thickness, perfect step coverage and large-area uniformity. This lecture course covers both the history and the present status of the ALD technology, and also discusses its future prospects and challenges.

Dates & Time: July, 24, 2008 (Thu): 15:00 - 17:00

July, 25, 2008 (Fri): 10:00 - 12:30

Place: MSL meeting room (R3 Bldg., 1st F)

Inquiry: Prof. H. Yamauchi (ext. 5315)