

## Centre for Electronics Frontiers **Webinar**



### Atomic Layer Etching, Deposition & Modification Processes for Future Nanoscale-devices

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### Biography

Prof. Samukawa obtained a PhD in Instrumentation Engineering from Keio University in 1992. Since July 2000, he has been a full professor at Tohoku University, where he is currently Director of the Innovative Energy Research Center at the Institute of Fluid Science (IFS) Tohoku University.

He is also a Principal Investigator (PI) at Advanced Institute of Materials Research (AIMR) Tohoku university, deputy director of Material Solutions Center (MaSC) Tohoku university, and also joint Chair Professor of Taiwan National Chiao Tung University. He is recipient of Ichimura Award (2008). Additionally, he has been elected as a Distinguished Professor of Tohoku University, a Fellow of the Japan Society of Applied Physics (JSAP) since 2008, a Fellow of American Vacuum Society (AVS) since 2009 and also a Fellow of Institute of Electrical and Electronics Engineers (IEEE) since 2018.

### Abstract

Advances in plasma process technology have contributed directly to advances in the miniaturization and integration of semiconductor devices. However, in semiconductor devices that encroach on the nanoscale domain, defects or damage can be caused by charged particles and ultraviolet rays emitted from the plasma, severely impairing the characteristics of nano-devices that have a larger surface than bulk areas. It is therefore essential to develop a method for suppressing or controlling charge accumulation and ultraviolet damage in plasma processing. The neutral beam process is a method that suppresses the formation of defects at the atomic layer level in the processed surface, allowing ideal surface chemical reactions to take place at room temperature. This technique is indispensable to develop future innovative nano-devices.

**Tuesday 23 June 2020 10:00 -11:00**

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