

Atomic Layer Neutral Beam Processes for Nanofabrication and Interface Engineering

講師：寒川誠二教授 演講連結

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演講摘要

To achieve charge-free and ultraviolet photon irradiation damage-free processes, we have developed a new atomic layer neutral beam processes based on my discovery that neutral beams can be efficiently generated from the acceleration of negative ions produced in pulsed plasmas. This lecture introduces the atomic layer neutral beam process and discusses its applications to atomic layer defect-free etching, modification, and deposition processes for advanced nano-devices that have recently been pursued.

講者簡介

Joined NEC in 1981 after graduating in Instrumentation Engineering from Keio University. Worked on the research and development of ultra-precise plasma etching processes for ULSI devices. Promoted to Principal Researcher in Microelectronics Laboratory, R&D Group NEC Corporation. Obtained a Ph.D. 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 National Chiao Tung University. His significant scientific achievements earned him Ichimura Award (2008) in the New Technology Development Foundation, Prizes for Science and Technology; The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (2009), Plasma Prize in American Vacuum Society (2010) and IEEE NTC Distinguished Lecturers (2019). 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.