



Short Course: Plasma Processing; From Fundamentals to Atomic Layer Processes

Prof. Satoshi Hamaguchi

Lecturer: Prof. Satoshi Hamaguchi has been Professor of Engineering at the Center for Atomic and Molecular Technologies, Graduate School of Engineering, Osaka University since 2004. He has been working on analyses of plasma surface interactions for semiconductor processing, using numerical simulations and beam/plasma experiments. Prior to joining Osaka University, he was Associate Professor of Energy Science at Kyoto University, and Research Staff Member at IBM T. J. Watson Research Center, Yorktown Heights, NY. He received his B. Sc., M. Sci., and D. Sci. degrees from the Department of Physics, University of Tokyo, and M. Sci and Ph.D. degrees in mathematics from Courant Institute of Mathematical Sciences, New York University. He is a Fellow of American Vacuum Society and American Physical Society.

Aims: The course provides basic knowledge of plasma processing of materials, focusing on semiconductor processing, and introduces the forefront of research in atomic layer processes such as atomic layer deposition (ALD) and atomic layer etching (ALE).

Who Should Attend?: Students, scientists, and engineers in industry who are interested in learning the basics of plasma processing and, especially, atomic layer processes.

Contents: (3-hour lecture)

1. Basics of plasmas and plasma processing tools
2. Basics of plasma-surface interaction
3. Reactive ion etching and plasma-enhanced chemical vapor deposition
4. Outline of atomic layer deposition
5. Outline of atomic layer etching

Course Materials: Printed and electronic copies of the presentation slides