

Physics Colloquium

Michigan Technological University

Thursday October 16, 2014

4:00PM Fisher Hall 139

Dr. Ed Augustyniak, Technical Director at Lam Research, Tualatin, Oregon

Physics and Physicist in Plasma-Enhanced Chemical Vapor Deposition



Abstract:

Silicon semiconductor integrated circuits involve use of several plasma-based technologies. Plasma-Enhanced Chemical Vapor Deposition (PECVD) is used to illustrate basic principles of semiconductor processing. After the elementary introduction to low temperature non-equilibrium plasmas the focus shifts to plasma

sheath and sheath-related phenomena in dual frequency Capacitively Coupled Plasma (CCP). Topics are presented from physicist's perspective in engineering environment.

CV:

Dr. Ed Augustyniak received his M.Sc. in Physics from the University of Warsaw, Poland. He got a Ph.D. in Physics from Michigan Technological University in 1994. After two years as a postdoc at the University of Wisconsin-Madison, Center for Plasma-Aided Manufacturing, he joined a metrology startup in the Bay Area. This was followed by a 15 year stint at Novellus Systems and Lam Research in PECVD/ALD organizations. Within dielectric deposition he worked on various aspects of PECVD, plasma diagnostics of dual-frequency CCP, new RF applications, process control, and chamber hardware development.



Dr. Augustyniak is accompanied by his wife Monika Sujczynska, who was a Physics Instructor at MTU almost 25 years ago.

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