

**Plasma-Therm Technical Workshop:
Fundamentals of Plasma Processing (Etching and Deposition)**

**Clark Hall
Room 202**

20 September 2019 -- Friday -- 8:00am to 5:30pm

The workshop will focus on the fundamentals of plasma etching and deposition. Lectures will include the basics of plasma reactors and mechanisms for etching and deposition and review state-of-the-art etching and deposition technologies as applied to semiconductor, MEMS, and nanofabrication. Talks will cover compound semiconductor, dielectric, and deep silicon etching as well as PECVD and high density plasma CVD of silicon based materials. Fundamental and new ideas for metrology, endpoint detection and sample thermal budget management will be presented.



**Registration is free, however online pre-registration by 13
September 2019 is requested at**

<https://www.surveymonkey.com/r/7RQWPRV>

For general and registration inquiries, please contact:

Prof. Hiu Yung Wong

Tel: 408-924-3910

Email: hiuyung.wong@sjsu.edu



Objectives

- Learn the fundamentals of plasma, reactors, and etching mechanisms
- Review current etching technologies for deep silicon etching, compound semiconductors, and dielectrics
- Provide essentials of PECVD and HDPCVD
- Explore the basic metrologies and endpoint detection
- Understand thermal budget considerations

**Continental breakfast and lunch will be provided
Scheduled details and speaker information follows:**

Program

8:00am	Registration (light breakfast courtesy of Plasma-Therm)
8:30 am	Welcome
8:45 am	Basics: Plasma, Reactors, and Etching Mechanisms
10:45 am	Break
11:00 am	Dielectric Etching
12:00 pm	Networking Lunch (Courtesy of Plasma-Therm)
1:00 pm	Compound Semiconductor Etching
2:00 pm	Deep Reactive Ion Etching of Silicon
2:45 pm	Break
3:00 pm	Metrology/Endpoint Basics
3:30 pm	Thermal Budget Management
4:00 pm	PECVD and HDP CVD (high density plasma CVD)
5:00 pm	Conclusion (Note: Q&A will be encouraged during the talks)

Speaker Information: David Lishan, Ph.D.



After receiving his undergraduate degree in Chemistry from UC Santa Cruz and Ph.D. from UC Santa Barbara in Solid State Electrical Engineering he has worked and published on a wide range of material, semiconductor, and chemistry R&D projects in the areas of lithography, photochemistry, x-ray mask fabrication, PVD, and plasma processing. During over 20 years at Plasma-Therm, he has had business unit management and worldwide marketing responsibilities as well as managing the development and release of the plasma dicing product. Currently in dual roles as a Principal Scientist and a director in technical marketing, he has recently organized and presented plasma processing workshops at leading institutions throughout the world. His primary focus is on the application of plasma processing for R&D, MEMS, photonics, data storage, power, and compound semiconductor applications. He holds two patents in the area of semiconductor processing and has over 60 publications and conference presentations.

With Plasma-Therm, he has organized and presented plasma processing workshops at leading institutions throughout the world, including Harvard University, UC Berkeley, University of Notre Dame, UC Los Angeles (UCLA), University of South Florida, Stanford University, Lund University (Sweden), IMRE (Singapore), UC Santa Barbara (UCSB), ISCAS (Beijing, China), SINANO (Suzhou, China), Shanghai Jiao Tong University, UT Austin, Cornell University, Pennsylvania State University, KANC (S. Korea), University of Alberta, Weizmann Institute, University of Queensland, University of New South Wales, Politecnico di Milano, Fondazione Bruno Kessler (FBK) National Tsing Hua University, UC Davis, George Washington University and University of Michigan.