



Online LTP Seminar

Lecture 2

May 26, 2020

Title: Pulsed plasma for plasma processing
Steven Shannon
North Carolina State University

Abstract: Inductively coupled plasmas have played a prominent role in semiconductor manufacturing for decades due to their efficient power coupling to bulk plasma electrons and subsequent production of reactive species. Pulsed modulation of these sources provides a larger process window with regard to time averaged electron density and temperature by deliberately driving the plasma in non-equilibrium transient conditions. In this talk, some of the benefits and challenges of time modulated operation of plasma sources, specifically inductively coupled sources, will be presented. Power delivery and plasma transient response will be the primary focus of the talk.

Bio:

Steven Shannon is a professor and the director of graduate programs for the Nuclear Engineering program at North Carolina State University. He also runs the Fourth State Applications Research Lab (4-Star), focusing on basic plasma phenomena and industrial plasma applications. Prior to joining North Carolina State in 2008 he was a member of the technical staff at Applied Materials Inc. as well as an adjunct faculty in the Chemical and Material Science department at San Jose State University. Prof. Shannon studied at the University of Michigan in Ann Arbor where he received his BSE, MSE, and Ph.D. degrees in Nuclear Engineering.