

Abstract Submitted
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Ion particle and energy flux uniformity control using a phase locked dual ICP coil design DAVID COUMOU, MKS Instruments, ENI Power Division, STEVEN SHANNON, NC State University, Department of Nuclear Engineering — Phase lock drive of multiple power sources to drive a single plasma discharge has demonstrated the ability to modify low pressure discharges in a variety of ways not achievable by other means including control of electrical asymmetry ion energy distribution function shape and uniformity. This work presents an experimental effort to elucidate the relationship between plasma parameters and locked phase between dual inductive coils and between the coils and bias cathode of a commercial 300 mm etching chamber. Adjusting parameters to maintain a constant electron density at the center of the discharge, both ion flux uniformity and average ion energy are impacted by these relative phase conditions.

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