

Abstract Submitted  
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**Radial distribution of plasma parameters in a  $\text{BF}_3$  discharge** LUDOVIC GODET, SVETLANA RADOVANOV, RAJESH DORAI, Varian Semiconductor Equipment Associates, GILLES CARTRY, CHRISTOPHE CARDINAUD, Nantes University, France, VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES TEAM, NANTES UNIVERSITY, FRANCE COLLABORATION — The radial distributions of discharge parameters in a pulsed DC plasma doping system have been studied using measurements of time-resolved electron density, relative ion density, plasma potential and electron temperature in  $\text{BF}_3$  and Ar plasmas during active discharges. The effects of the electric field on the radial distribution of the plasma parameters are investigated. These measurements could be taken as the basis for interpreting on-wafer uniformity. Negative plasma potentials are observed when using a hollow cathode to create plasma while implanting at ultra low energies. The kinetics of plasma generation during the pulse-on phase has been discussed.

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