

Abstract Submitted  
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**Plasma Characteristics of Industrial Transformer Coupled**

**Plasma** L. OKSUZ, A.R. ELLINGBOE, Dublin City University Physics Department — Langmuir probes, double probes and capacitive probes are used to characterize an industrial transformer coupled plasma (TCP). Process gasses are mixtures of Ar/O<sub>2</sub>/C<sub>4</sub>F<sub>8</sub>, such chemistry is similar to used in the etching of ULK materials. The obtained results are valuable for optimizing conditions for plasma processing for TCP. The plasma characteristics are investigated for varying gas mixtures, TCP power, substrate bias power and pressures for SiO<sub>2</sub> etching. Optimum etching process is strongly dependent on main power, O<sub>2</sub> flow rate or partial pressure of O<sub>2</sub>, and pressure. The plasma density is found to drop with increasing partial-flow of either molecular gas up to 10% flow of the molecular gas. Further addition of molecular gas has almost no affect on plasma density and electron temperature. The results are understood by a global model.

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