

**AC DRIVEN LOW PRESSURE PLASMA REACTOR
WITH ANNULAR SHAPED ELECTRODES
FOR ABATEMENT OF POLLUTANTS EMITTED
FROM SEMICONDUCTOR PROCESSING**

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Abatement of air pollutants released from semiconductor industries has received attention due to the increasingly stricter regulation on their emission. In order to reduce these pollutants, we have developed an alternative current (AC) driven plasma reactor, characterized by multiple annular shaped electrodes attached to the outer surface of a quartz tube. At a low pressure regime, the abatement experiment is performed with respect to tetrakis-ethylmethylamino-zirconium (TEMAZ), representative pollutants widely used in semiconductor processes. The destruction rates of TEMAZ are compared using a Fourier transform infrared (FTIR) spectrometer by varying the applied voltage and the driving frequency. By optical emission spectroscopy (OES), the spatial distributions of various spectra emitted from glow discharge are compared before and after the TEMAZ injection, and then not only the discharge characteristics but also the influence of residence time is discussed using the emission results.
