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Abatement of Perfluorinated Compounds Using Cylindrical Microwave Plasma Source at Low Pressure¹ SEONG BONG KIM, S. PARK, Y. PARK, S. YOUN, S.J. YOO, National Fusion Research Institute — Microwave plasma source with a cylindrical cavity has been proposed to abate the perfluorinated compounds (PFCs). This plasma source was designed to generate microwave plasma with the cylindrical shape and to be easily installed in existing exhaust line. The microwave frequency is 2.45 GHz and the operating pressure range is 0.1 Torr to 0.3 Torr. The plasma characteristic of the cylindrical microwave plasma source was measured using the optical spectrometer, and tunable diode laser absorption spectroscopy (TDLAS). The destruction and removal efficiency (DRE) of CF₄ and CHF₃ were measured by a quadrupole mass spectroscopy (QMS) with the various operation conditions. The effect of the addition of the oxygen gas were tested and also the correlation between the plasma parameters and the DRE are presented in this study.

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Seungil Park
National Fusion Research Institute

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