CHARACTERISTICS OF MICROWAVE PLASMA

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ABSTRACT

Microwave plasma was built to produce plasma in axial direction. Plasma is initiated in a glass vacuum tube by 2.45GHz commercial magnetron and meanwhile system was driven by 14 amperes DC current passing through 16cm inner diameter toroid. Measurements with a Langmuir probe, emissive probe and ICCD for optical spectrometry are used to characterize internal parameters like electron density, electron temperature and different properties of the charged particles under different conditions. Spatial and temporal measurements are provided for argon, nitrogen and hydrogen plasma. The experimental results are compared with the computational modeling.