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UV Radiation from Hydrogen Containing Microwave Plasmas<sup>1</sup> E. FELIZARDO, E. TATAROVA, J. HENRIQUES, F.M. DIAS, C.M. FERREIRA, IPFN-IST, B. GORDIETS, Lebedev Phys. Inst., IPFN - IST, LISBOA TEAM, LEBEDEV PHYSICAL INSTITUTE, MOSCOW TEAM — Extreme ultraviolet (EUV) light sources are of great importance in many applications, ranging from photochemistry to astrophysics. In this work, EUV emissions from He and H<sub>2</sub> surface wave produced plasmas operating at low-pressures (0.1-2 mbar) are investigated. This surface wave source is created using a waveguide surfatron-based setup, the microwave power being provided by a 2.45 GHz generator. The discharge takes place inside a quartz tube with internal/external radii of 3/5mm, under laminar flow conditions (20 to 100 sccm). The EUV end-on emission has been detected by a Horiba Jobin-Yvon Plane Grating Monochromator working in the 8 - 125 nm range. The variations of the ultraviolet spectrum in the range 10 - 120 nm with changes in pressure and power delivered to the launcher have been investigated. The results are interpreted in the framework of a theoretical model based on a self-consistent treatment of particle kinetics, gas dynamics and wave electrodynamics.

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