

Abstract Submitted  
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**Vacuum UV emission spectroscopy of discharge excited by a RF helical coupling device in N<sub>2</sub>-Ar mixtures** PAVEL VEIS, DEP, CORINNE FOISSAC, IEMN, ADRIANA ANNUSOVA, JAROSLAV KRISTOF, DEP, V. MARTISOVITS, DAPEM, PHILIPPE SUPIOT, IEMN, DEPARTMENT OF EXPERIMENTAL PHYSICS (DEP) COLLABORATION<sup>1</sup>, IEMN UMR-CNRS 8520 COLLABORATION<sup>2</sup>, DEPARTMENT OF ASTRONOMY, PHYSICS OF THE EARTH AND METEOROLOGY (DAPEM) COLLABORATION<sup>3</sup> — Optical emission spectroscopy in Vacuum Ultra-Violet spectral range is applied to study densities, vibrational and rotational temperatures of N<sub>2</sub>(a<sup>1</sup>Π<sub>g</sub>) specie in a N<sub>2</sub>-Ar (0-95% Ar) plasma induced by a helical cavity excited at 27MHz and 400Pa. The N(<sup>2</sup>P) atoms are also analyzed versus the Ar percentage. The strong dependence of the temperatures and density species toward the Ar amount in the gas mixture is consistent with kinetics where the argon metastables play an important role.

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