

STUDY OF He LINES FROM CORONA DISCHARGE

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In this report, we have initiated a systematic spectroscopic investigation of gas helium which is excited by corona excitation. Here are the results of this phenomena observation occurring for point electrode (both negative and positive corona discharges) at 300K as a function of external hydrostatic pressure. An intensity of the visible light emitted from the zone closed to the tip was sufficient for its spectroscopic analysis. The shift and width of the spectra observed were measured as a function of the applied pressure. Additional features were assigned to 'satellites' which were observed to contribute much stronger to atomic lines and molecular bands in positive corona discharges than with negative polarity. Theoretical profiles are calculated in a unified line shape semi-classical theory using ab initio molecular potentials and are compared with experimental lines.