Abstract:-

The aim of this work is to determine the electrical conductivity of glow discharge in dry air at low pressure (0.15-5 torr), using the (I-V) characteristic curve. From the axial electric field strength (E) and discharge current density (J), we study also the effect of both (helium-neon) laser of power (0.5 and 1mw) the ultra-violet radiation of energy (254 and 366nm) on the electric conductivity at glow discharge, the result shows that the electric conductivity decreases with increasing pressure increases. We find that the conductivity increases when both radiation's
Fig(2): Axial electric field as a function of current density for different values of laser power at pressure 0.2 torr.

Fig(3): Current density as a function of electric field for different values of (UV) energy source at pressure 0.2 torr.
Fig(4): Electrical conductivity as a function of pressure for different values of currents at laser power 1mw

Fig(5): Electrical conductivity as a function of pressure for different values of currents at constant energy (UV) source
Fig(6): Electrical conductivity as a function of laser power energy at different values of glow discharge current

Fig(7): Electrical conductivity as a function of ultraviolet energy at different values of currents at pressure 0.2torr source
Fig(8): Electrical conductivity as a function of current density at different values of power laser.

Fig(9): Electrical conductivity as a function of current density at different values of (UV) source.
Fig(10): Electrical conductivity as a function of glow discharge current at constant laser power 1mw

Fig(11): Electrical conductivity as a function of glow discharge current at constant (UV) source
Determination of Electrical 

![Graph showing electrical conductivity as a function of current glow discharge (Amp) at different pressures for laser power 1mw.]

Fig (12): Electrical conductivity as a function of current glow density at different values of pressure for laser power 1mw

![Graph showing glow discharge resistance as a function of pressure for different values of energy (UV) source.]

Fig (13): Glow discharge resistance as a function of gases pressure for different values of energy (UV) source
Fig(14): Electrical conductivity as a function of glow current density at constant irradiation values

Fig(15): Glow discharge resistance as a function of gas pressure for different values of power laser