Date 28/5/22

Expt. No. 10

Page No. 24

Experiment 10

Hertz Experiment

Objective:

To understand and appreciate generation and detection of EM waves using Hertz experiment.

Apparatus Required:

An induction coil, capacitors, two copper electrodes of conical shape, DC to DC converter, a battery

About the experiment:

Hertz used a simple homemade experimental setup, involving an inductor and a capacitor to generate electromagnetic (EM) waves. The waves thus generated give a spark between the two spheres. This spark is a result of large potential difference the electrons on the electrodes experience. The electrons accelerate to the opposite electrode and give raise to EM waves.

Observations and Inferences:

This experimental setup is important as the spheres store charges to be released for sparking, the sharp edges are for directing the spark a specific point, one to send, one to recieve.

The spark is produced when a high voltage is applied is because the electrons experience a massive difference in energy between the electrodes, causing them to conduct as a spark.

Teacher's Signature

3. The EM wave produced in this experiment is radio wave.

4. The purpose of the LED is to detect radio waves by using a search coil. As radio waves are not visible to the human eye, a LED detector is used.

5. The intensity the LED emmits increases as the search coil is kept closer to the spark.

Precautions:

It is suggested not to touch any components of the experiment while in use.

Teacher's Signature _____