The Photoelectric Effect

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Abstract

1 Background

2 Introduction

Electrons can be ejected from the surface of a metal when the surface is irradiated with photons whose energies are greater than the work function of the metal. This experiment aims to measure Planck's constant (h) and the work function (ϕ) of the metal by analyzing the photoelectric effect.

2.1 Background and Theory

3 Experimental Setup and Procedure

The experimental setup includes a mercury lamp as the photon source, a lens to focus the light, and an RCA 935 vacuum phototube. Interference filters were used to select photon wavelengths, and neutral density filters tested the dependence of photoelectron energy on light intensity.

3.1 Light Box

4 Results

4.1 Data and Analysis

5 Conclusion

6 References

1. T. Matsumoto. A chaotic attractor from Chua's circuit. IEEE Trans. Circuits Sys., 31(12):1055–1058, 1984.

2. http://www.chuacircuits.com For more information on setup, examples, and matlab example code.