

NEATH PORT TALBOT COLLEGE COLEG CASTELL NEDD PORT TALBOT

School of Maths & Science Science Practical

Variation of current with potential difference for a filament lamp.

◆ Aim

To determine the relationship between p.d and current for a filament lamp.

◆ Introduction

You will vary the p.d. across a filament lamp and measure the corresponding current through it. You will plot a graph of V against I and determine how the resistance of the bulb varies.

◆ Safety

Control Measures

- You are reminded of the need of good laboratory practice in order to maintain a safe working environment.

Hazards

Electrical hazard.

Take care with circuits. Switch off power before connecting and disconnecting the circuit.



◆ **Procedure**

1. Connect a filament lamp to a variable power supply.
2. Place an ammeter in series with the lamp to measure the current through the lamp.
3. Place a voltmeter in parallel with the lamp to measure the p.d. across the lamp.
4. Increase the p.d. across the lamp in steps of 1V and note the corresponding current in milliamps. Repeat until a p.d. of 12V is achieved.
5. Reverse the lamp and repeat, now treating the current and p.d. as negative.
6. Plot a graph of p.d, V against current, I

Current positive	V /Volts									
	I /mA									
Current negative	V/ Volts									
	I / mA									
Average Values	V/ Volts									
	I / mA									

7. Describe and explain your observations using relevant knowledge of physics
