Investigating LDRs

A light dependent resistor is a resister that depends on the amount of light shining on it.

Introduction

I will be investigating how much of a current that flows through the resistor depends on the amount of light that is shining on the LDR.

Planning

My prediction for this coursework is that the more the further that I move the LDR from the light the weaker the current will be on the milliammeter.

Equipment

The equipment that I will be using will be:

Milliammter
LDR
Cell (battery)
Meter Ruler
Lamp
Power Pack
4 Leads
Component Clip

Method

Step by Step

I will be working in a pair. I will set up a circuit that will measure the amount of light that will shin on the LDR. I will be taking 8 reading of different distances. We will be repeating each concentration three times so all together we will have 24 sets of results. This will make it a fair test.

I will be changing the amount of light going to the LDR by moving the LDR further away from the light that means that I will be chang ing the distance. I will by measuring the current that flows thought the circuit by using a milliammeter. To get a reading the light has to shin on the LDR (semi conductor) this will let free the electrons, which lets the current flow throw the circuit to the milliammeter

I will make this a fair test by repeating each distance three times and this will also make the readings more accurate. I will also be using the same equipment and the same amount of Voltage (8 nominal). There will be no lights in the background because the light will shin on the LDR and it will make the test unfair. The only thing that will change is the distance from the LDR to the light.

Here is a table that shows the distances I will be using:

	Distance (cm)
1	5cm
2	10cm
3	15cm
4	20cm
5	25cm
6	30cm
7	35cm
8	40cm

Here is a diagram that show how a LDR works:

Here is a picture of the circuit I will be using:

Here is a table of my results:

	Distance (cm)	Current test 1 (MA)	Current test 2 (MA)	Current Test 3 (MA)
1	5cm	9.3	9.3	9.3
2	10cm	5.3	5.3	5.3
3	15cm	3.4	3.4	3.4
4	20cm	2.4	2.4	2.4
5	25cm	2	2	2
6	30cm	1.4	1.4	1.4
7	35cm	1.2	1.2	1.2
8	40cm	1.1	1.1	1.1

This table show that I have made my distance c orrect and I have read the readings on the milliammeter accurately.

Analysis of results

The graph starts off high and swoops down low this means if the distance is short then there is a larger amount of light go to on the LDR so there is lots of electrons that are being released so there is a high current. Then if the distance is further away from the light then there is a small amount of light go to on the LDR so there is few electrons that are being released so there is a low current.

My predication said that the more the further that I move the LDR from the light the weaker the current would be on the milliammeter. And my predication was correct.

Evaluation

The experiment involves investigating how much of a current that flows through the resistor depends on the amount of light that is shining on the LDR. I think that the test went good because my result come out correct that is because I made it a fair test. I took 24 reading all together and put it into a line graph. I found out that my predicati on was correct and that the further away the LDR is from the light the less current there is. My original finding and conclusion were correct see last section for details. My results are accurate because I carried out a fair test, which then allowed my rec ording to be accurate. I had one anomalous result, which did not fit into the pattern maybe it was because there was a little big of light in the back ground so the reading did not come out correct. If I would improve my investigation I would have done more readings to make it an even fairer test and I could have compared my result with other peoples results.