SPECTROSCOPY

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Chemistry Lab III

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Every honest researcher I know admits he's just a professional amateur. He's doing whatever he's doing for the first time. That makes him an amateur. He has sense enough to know that he's going to have a lot of trouble, so that makes him a professional.

— Charles F. Kettering (1876-1958) (Holder of 186 patents)

ACKNOWLEDGEMENTS

I express my sincere gratitude to our instructors, Dr. K. S. Viswanathan and Dr. K. R. Shamasundar, for bringing the subject to life and helping us discover, in depth, the science behind the procedures.

I also thank Vivek Sagar (MS11017) for his contribution to this report as my lab-partner, who made the task of performing experiments immensely comfortable and productive at the same time.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

LISTINGS

ACRONYMS

Part I

EXPERIMENTS

1 TO CONTROL A LAMP WITH A SINGLE WAY SWITCH

August 18, 2012

1.1 AIM

To control a lamp with a single way switch.

1.2 THEORY

1.2.1 *Tools*

1. Plier
2. Screwdriver
3. Electrical Line Tester

1.2.2 *Material*

1. Single way switch
2. Lamp
3. Lamp Holder
4. Bakelite Sheet
5. Wires
6. Screws
7. Nut Bolts

1.3 PROCEDURE

1. Took a suitable Bakelite sheet and attached the following using screws & nut-bolts
   a) Power Connectors
   b) Switch
2. Connected the circuit according to the circuit diagram as given in Figure 1, keeping the following in mind

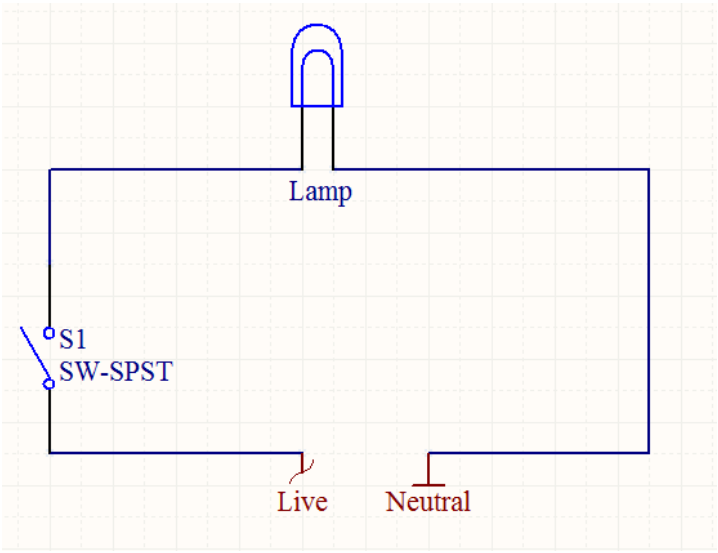

Figure 1: Lamp controlled by a Single Way Switch

a) *Red Wires* are used for the phase connections.
b) *Black Wires* are used for the neutral connections.
c) Colours other than Red, Black and Green can be used for the connecting wires.

1.4 PRECAUTION

1. Connections should be tight, viz. shouldn't come out when pulled.
2. Wires shouldn't be sticking out of the connections without insulation.
3. Wires should be of appropriate length.
4. Colours of the wires should be chosen in accordance with their type.

1.5 ACKNOWLEDGEMENTS

I thank Mr. Jatinder Singh for his guidance during the experiment.

2

TO CONTROL A LAMP FROM TWO DIFFERENT PLACES

August 25, 2012

2.1 AIM

To control a lamp from two different places.

2.2 THEORY

2.2.1 *Tools*

1. Plier
2. Screwdriver
3. Electrical Line Tester

2.2.2 *Material*

1. Single way switch
2. Lamp
3. Lamp Holder
4. Bakelite Sheet
5. Wires
6. Screws
7. Nut Bolts

2.3 PROCEDURE

1. Took a suitable Bakelite sheet and attached the following using screws & nut-bolts
   a) Power Connectors
   b) Switch
2. Connected the circuit according to the circuit diagrams as given in Figure 2 and Figure 3, keeping the following in mind

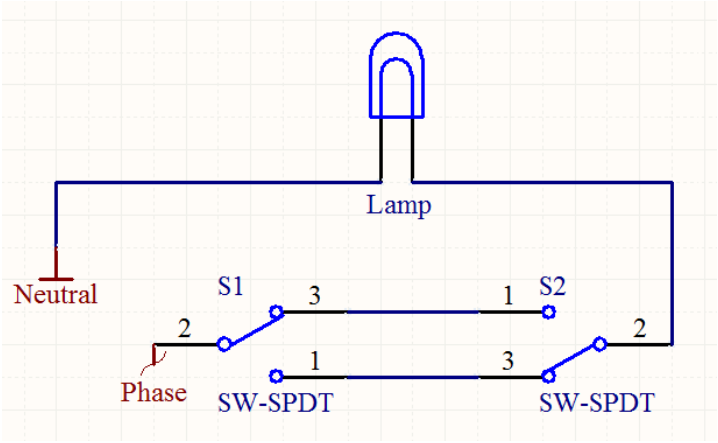

Figure 2: Lamp controlled by 2 different Two Way Switches

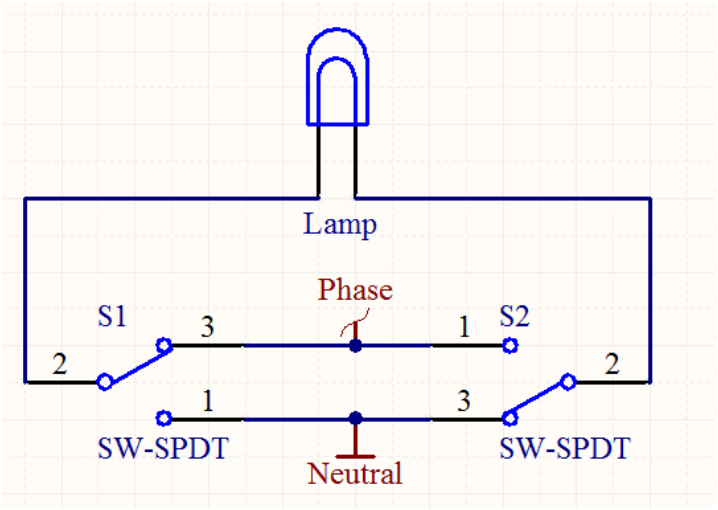

Figure 3: Lamp controlled by 2 different Two Way Switches

a) *Red Wires* are used for the phase connections.
b) *Black Wires* are used for the neutral connections.
c) Colours other than Red, Black and Green can be used for the connecting wires.

2.4 PRECAUTION

1. Connections should be tight, viz. shouldn't come out when pulled.
2. Wires shouldn't be sticking out of the connections without insulation.
3. Wires should be of appropriate length.

4. Colours of the wires should be chosen in accordance with their type.

2.5 ACKNOWLEDGEMENTS

I thank Mr. Jatinder Singh for his guidance during the experiment.

Part II

THE SHOWCASE

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COLOPHON

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The style was inspired by Robert Bringhurst's seminal book on typography "*The Elements of Typographic Style*".

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