IARE

INSTITUTE OF AERONAUTICAL ENGINEERING

(An Autonomous Institute affiliated to JNTUH, Hyderabad)

Dundigal, Hyderabad - 500 043

LABORATORY WORK SHEET

Name of the Student :.....

Class..... Semester..... I .....

Course Code : AHSD05 .....Course Name : EC Lab .....

Roll Number										

Name of the Course Faculty.....Faculty ID :.....

Exercise Number : 08 .....Week Number : 08 .....Date :.....

DAY TO DAY EVALUATION:

Marks	Aim / Preparation	Algorithm / Procedure	Source Code	Program Execution	Viva - Voce	Total
		Performance in the Lab	Calculations and Graphs	Results and Error Analysis		
Max. Marks	**4**	**4**	**4**	**4**	**4**	**20**
Obtained						

Signature of Faculty

START WRITING FROM HERE :

Preparation of thiokol rubber

Aim : To synthesize thiokol rubber using sodium polysulphide with 1,2 - Dichloroethane.

Apparatus : Breakers, glass rod, funnel etc.

chemicals required :

1. Sodium hydroxide
2. powered sulphur
3. 1,2 - Dichloroethane
4. 5% H_2SO_4 etc.

ROLL NUMBER :

Theory :

It is a rubbery white substance and is obtained by treating sodium polysulphide with 1,2 - Dichloro ethane

$$S_8 + 2NaOH \rightarrow Na_2S_8$$

$$n(Cl-CH_2-CH_2-Cl) + n\,Na_2S_8 \rightarrow [-CH_2-CH_2-S-S-]_n + 2n\,NaCl$$

1,2 - Dichloro ethane — sodium polysulphide — Thiokol Rubber

Procedure :

1. In a 100ml beaker dissolve 2gms NaOH in 50 - 60 ml of water.
2. Boil the solution and to this add in small lots with stoing 4gm of powdered sulphur. During addition and stirring the yellow solution turns deep red.
3. Cool it to 60 - 70°c and add 10 ml of 1,2 - Dichloro ethane with stirring. Stir for an additional period of 20 min while rubber polymer seperated out as lamp.
4. pour out the liquide from the beaker in the sink to obtain thiokol rubber. Wash under the tap.
5. Dry in the fold of fitter paper, the yield is about 1.5 gm. Determine the solubility of the polymer in Benzene, Acetone, 5% H_2SO_4 and HNO_3 etc.

Result :

Yield obtained = 2.34 gm