**CHEM-E-SWITCH**

**Event description**

Are you that budding engineer who gets super-excited while tinkering with chemicals? Are you amazed by the variety and versatility of reactions that happen to matter around us? Then this is the right platform for you to experiment with your ideas. Come and reproduce a mechanism with the help of your knowledge in chemistry and engineering skills in order to automate the switch of an electric circuit we've got ready for you. The aim is to make the mechanism turn off the switch of the circuit within the specified time. So bounce those exemplary ideas off your brain, 'coz the stage is set for Chem-e- switch.

**Event Rules**

1. The participants will form teams of maximum three members.
2. There will be only a single round.
3. The chemical reaction, mechanism(along with the type of switch to be used) and apparatus needed should be submitted to the organisers (contacts given below) 4 days prior to the fest date.
4. The mechanism should be set up at the venue of the event only, but you must come with preparation.
5. The electrical circuit(excluding the switch), general laboratory apparatus and a set of specific chemicals (listed below) will be provided by the organisers but other materials (or other chemicals) if required should be brought by the participants.
6. The participants must be present at the venue on time.
7. From the start of the reaction, the switch must be broken within a time, given on spot. No damage to be done to the circuit. No tampering to be done with any components of the circuit.
8. There is no limitation on the size of the mechanism.
9. No human intervention is allowed once the mechanism is made and reaction is fully triggered. It should automatically complete the task. No spilling of chemicals or leaving residues on surroundings is allowed.

**Note - The first half of the event will be utilized for building the mechanism (along with the chemical reaction) and practicing. Judging will be done in the second half.**

**Judging Criteria**

The teams will be judged on the following parameters:

1. The novelty and efficiency of the mechanism.

2. The involvement of chemical reaction in the mechanism.

3. Completion of the task with precision.

\*\* Final decision in case of any dispute will be solely in the hands of the

organizers.

**Example**

A weight can be tied to a string attached to a tethered Magnesium strip. The Magnesium strip is to be placed in Hydrochloric Acid. When enough Magnesium reacts, the strip will break and the weight will drop and open the switch.

Same design can be used replacing Hydrochloric Acid with Sulfuric Acid.

<https://drive.google.com/open?id=1tW-XDaQxiFpVJvqkaWjRPmIoxFfxZnkh>

<https://drive.google.com/open?id=1NC9p-JQ15p2mP7dcSTp55x1CdMPwSMZU>

**Contact**

For any queries regarding the event, contact the organisers at:

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**Chemicals Provided**

1. Baking Soda
2. KMn04
3. Glycerol
4. Oxalic Acid Solid
5. Sulphuric Acid conc.
6. Acetone
7. Zinc Granules
8. Copper Sulphate
9. Dil HCl
10. Dil NaOH
11. Camphor
12. Carbon Disulphide
13. Cu turnings
14. Sulphuric Acid dilute
15. Hydrogen Peroxide
16. Sodium thiosulphate pentahydrate
17. KI
18. Starch
19. Isopropyl Alchohol

For any other chemical team must inform 2 week prior to the event to any one of the organiser through whatsapp or email.

**Other Components:**

1. Arduino
2. Connecting Wires

Any other component (sensors ) should be brought by the team itself.

**Format for Submission:**

1. Chemical Reactions Involved:

2. Mechanism of the Reactions and Setup:

3. Amount of each chemical required:

4. Type of switch used:

5. Requirements for other component:

(Either mail or whatsapp any one of the organizers.)