MECH TECH MEET S08

CHEM-E-CAR

INTRODUCTION

MTM Season 8 presents Chem-E-Car. Grab this opportunity to demonstrate your ability to control a chemical reaction, which supplies the necessary fuel and use it to propel a car that stops after travelling a specified distance.

The main objective of the competition is to demonstrate your ability to control a chemical reaction. The only source of propulsion of the car is a chemical reaction. (Some examples of Chemical Reactions include the use of pressurized air - creating oxygen through chemical reaction and allowing it to build up the pressure, or application of electrochemical reaction - using electricity generated by dissolution of metals/non-metals in acids/bases).

The aim of the competition is to provide students with an opportunity, in a team oriented hands-on design and construction of a small chemically powered car. It tests the ability of the participants to safely control and harness the energy of a chemical reaction by initiating the car and allowing it to traverse a fixed distance carrying a certain load.

RULES -

1. The dimension of robot should not exceed 30x25x20 cm^3 (L*B*H), however a tolerance of 5% can be considered in any one dimension.

2. The volume of the beaker used ***should not exceed 500ml.***

3. The stopping mechanism has to be controlled by a chemical reaction. No brakes, mechanical or electronic timing devices are allowed.

4. Each team consists of maximum four members. Students from different educational institutes can form a team.

5. Transportation of chemicals to the competition venue is strictly the responsibility of the team. You are also responsible for arranging disposal of chemical wastes generated by your model.

6. Harmful chemicals (concentrated acid, poisonous gases, etc.) are not allowed, your team would be eliminated if chemicals are hazardous and harmful for the surroundings. Use decomposable and domestic chemicals such as- Sodium Bicarbonate, Acetic acid, iodine, hydrogen, hydrogen-peroxide, starch, potassium-iodide, copper, zinc, Aluminium .

(If u want to use chemicals other than stated above then contact to the coordinator)

7. The decision of the event coordinators would be considered final and no further arguments will be entertained.

GAMEPLAY

The vehicle must be powered by a chemical reaction and must be stopped by a quantifiable change, and direct control, of the concentration of a chemical species. This chemical reactant species must be a solid, liquid, or vapour. Use of **commercial batteries** or **commercial engines** is strictly **prohibited** in your car's system. *Ideally, the car should stop after reaching the end of track*.

- INITIATING THE CAR-

Two minutes would be provided for setup of your model. Once the car crosses the starting line, team members cannot touch their bot i.e. no chemicals can be added. Any type of contact with the car thereafter will lead to disqualification. Pushing the vehicle or a mechanical starting device is not allowed (it will lead to penalty). If your car is initiated and not moving (i.e. till it has not crossed starting line), you can retouch the bot if you are within your time limit of 2 minutes

- TRACK DETAILS AND JUDGING CRITERIA -

The exact distance to be traversed would be conveyed to each team two hours prior to the start of the performing round. The foremost point of car's initial and

final position will be noted down to calculate the distance traversed by the car. Final distance will be measured from the finish line. The distance will always be measured from the finish line to the front point on the car. A vehicle that goes outside the course will have its distance measured to where it went out of bounds and accordingly a penalty will be imposed.

CONTACT-

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