DON BOSCO INSTITUTE OF TECHNOLOGY

Premier Automobiles Road, Kurla West, Mumbai - 400070

Department of Mechanical Engineering
Report on – K12 Activity

Title: Fun with Science
Date: 11th December 2023
Time: 2:00 PM to 4:30 PM
Venue: MMC Lab – Mechanical, Don Bosco Institute of Technology, Kurla

Target Audience: Students of St. Micheal school

No. of Participants Present: 30

Resource Person: Ms. Samina
Organization of Recourse Person: CES's Michael High School, Kurla
Organizing Department / Committee / Authority: ISHRAE DBIT Student Chapter
Faculty Coordinator: Prof. Cleta Pereira

Objectives:

- To encourage students to ask questions, make hypotheses, and engage in the scientific method to develop problem-solving and critical thinking skills.
- To help students grasp scientific concepts by demonstrating them in a tangible, real-world context.

Outcomes:

- Making the students aware of areas of scientific concepts.
- Getting hands-on learning experience.

Detailed Report:

"Fun with Science", a K12 activity was held on 11th December 2023 at 2.00 PM.The activity was conducted by ISHRAE DBIT Student Chapter and ISHRAE faculty Advisor, Prof.Cleta Pereira. The activity was conducted offline for the students of CES's Michael High School, Kurla. The activities performed by the council members was to interact with students and make them understand about science concepts. So, to make the session interesting for the students we the ISHRAE DBIT Chapter student council came up with an intriguing way to make the learning more fun and interactive.

Jaee Hindalekar (Woman in ISHRAE) started the event by introducing the students about team conducting activities.

1st Activity: Capillary Action

Vilas Kodam commenced this activity with the help of an experimental setup. The setup consisted of 2 glasses, one filled with regular water and the second filled with a mixture of water and ink. The 2 glasses were connected with the help of a rolled piece of tissue.

Capillary action is the ability of a liquid to flow in narrow spaces without the assistance of, or against, external forces like gravity. This phenomenon is particularly noticeable in small tubes, capillaries, and porous materials, such as soil and plant tissues. The interaction between the liquid and the surface of the material causes capillary action. Vilas Kodam explained to the students that this process is essential to plants and is employed in many everyday tasks. Pupils were motivated to discuss what they already knew about the topic, which created an interesting learning environment. The students were allowed to closely observe the experimental setup. We concluded the activity by taking group photos.

2nd Activity: Tyndall Effect

Ankit Kshirsagar conducted this experiment. The experimental setup consisted of 3 glasses and a LASER. The first glass was a mixture of salt and water. The second glass was a mixture of chalk powder and water. The third glass consists of a mixture of water and milk.

The Tyndall Effect is the phenomenon where light is scattered in many directions by small particles or colloidal suspensions in a transparent medium, making the beam of light visible. Tyndall effect is more pronounced when the particles present are of a larger size. Hence, due to the large particle size of chalk powder, more scattering is observed when a LASER beam is made to pass through it.

In order to observe the phenomenon of light scattering, the students were eager to utilise the LASER device and send the beam through the solutions. This contributed to students' new understanding of this concept. Common examples of Tyndall effect were given to the students. The pupils were allowed to closely observe the experimental setup. We concluded the activity by taking group photos.

3rd Activity: Refraction of light

The experiment was conducted by Jaee Hindalekar. The setup consisted of a piece of paper with an arrow drawn on it and a glass filled with water.

Refraction occurs when light passes from one medium to another with a different optical density, causing the light to change direction. The arrow is made to face a certain direction and once the glass of water is placed in front of the arrow, its direction is reversed. The water itself acts as a different medium, and the light passing through it can be refracted, leading to a change in the apparent position of objects behind the glass.
Students were urged to consider everyday situations in which they could witness the refraction phenomena. This produced an engaging learning environment for students. The students were allowed to closely observe the experimental setup. We concluded the activity by taking group photos.

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Snapshot of the Event:

Geotagged Photos:

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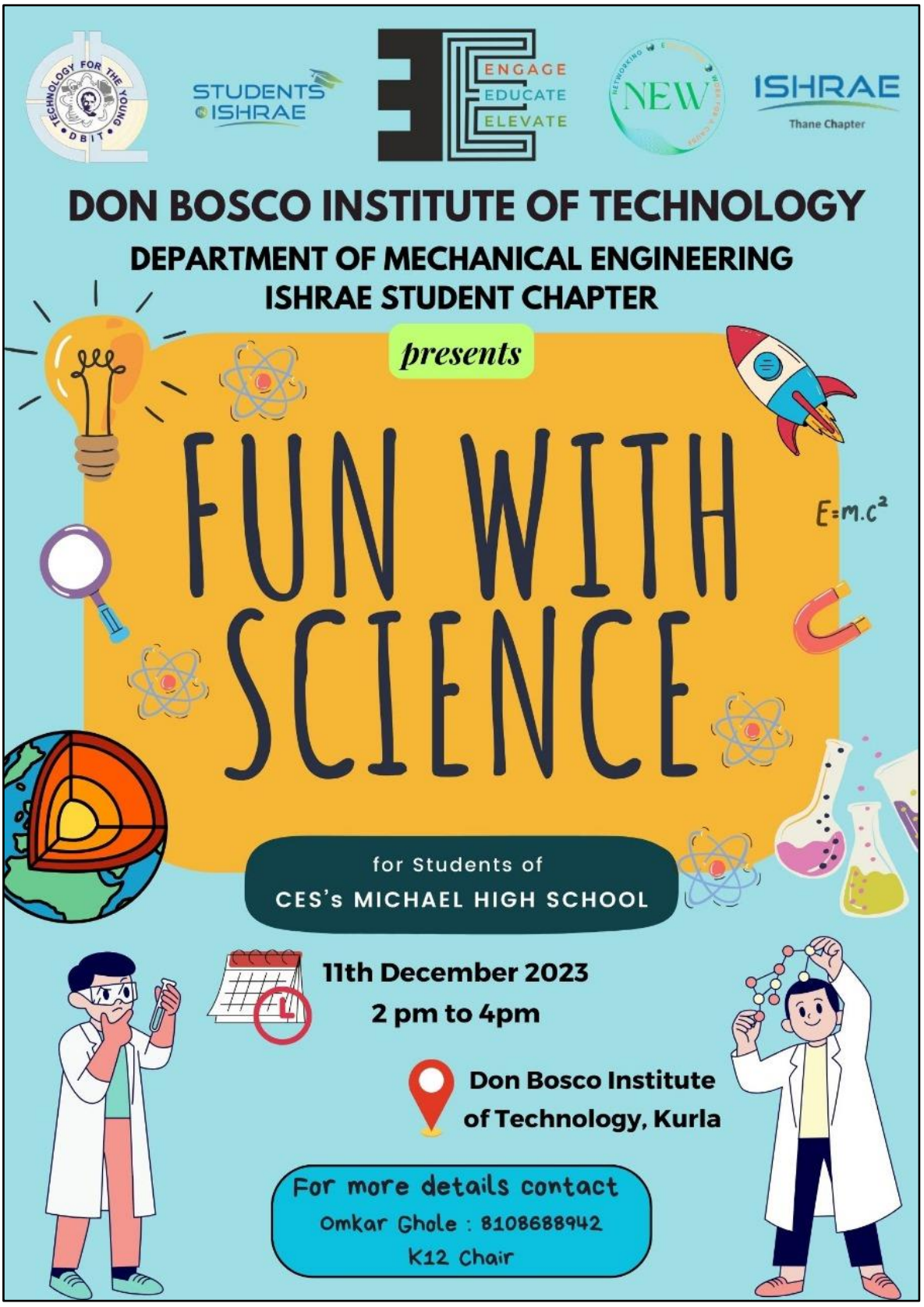
Event Poster:



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List of ISHRAE attendees for the event.

Sr. No.	Name	Position
1	Sahil Jadhav	Secretary
2	Vilas Kodam	Co K12 chair
3	Ankit Kshirsagar	Sports chair
4	Jaee Hindalekar	Environment chair
5	Rahi Prajapati	Chapter working committee
6	Vedika Mathews	Sub-Chapter working committee
7	Amogh Solanki	ISHRAE member
8	Sanjay Gundeti	ISHRAE member

Report Prepared By: Vedika Mathews

Name of the Student: Vedika Mathews

Post of the student: Sub-Chapter Working Committee

Report Approved By: Prof. Cleta Pereira

Name of the Faculty: Prof. Cleta Pereira

Post of the Faculty: Faculty Coordinator