Report of
Physics Department

(2020-21)

Mehr Chand Mahajan DAV College for Women

Sector-36, Chandigarh

www.mcmdavcwchd.edu.in

Title of the Activity: Virtual Eureka Physics Fest 2020 to mark the celebration of "International Year of Plant Health" on the theme 'Plant-Environment Physical Interaction'.

Date: 14th October, 2020

Result Declared: 31st October, 2020

Department: Department of Physics

Objectives:

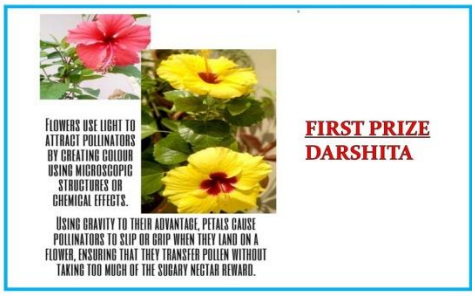
- To raise awareness about plant health being key to achieve the agenda for Sustainable Development.
- To promote awareness on how protecting plant health can help end hunger, reduce poverty, protect the environment and boost economic development.
- To share best practices to keep plants healthy while protecting the environment.

Context: The United Nations General Assembly declared 2020 as "The International Year of Plant Health". Plant health is increasingly under threat. "Climate change and human activities have degraded ecosystems, reduced biodiversity and created new niches where pests can thrive," says United Nations Environment Programme (UNEP) expert Marieta Sakalian.

The Physics of Plants theme is focused on borrowing ideas, methods and quantitative approaches from physics, to address hard questions related to plant biology. To fully grasp the physics underlying plant biology is a necessary step towards a fundamental understanding of plant life and towards the development of novel applications in the expanding agri-tech sector.

Practice: This year owing to COVID-19 situation, Department of Physics organized its annual Eureka Fest as "Virtual Eureka Physics 2020" where humongous number of students (approximately 300) from science streams of the college participated enthusiastically. The various events such as Quiz, Collage presentation, Power Point Presentation, Click a picture and write a story, Plantoons, Caption the picture captured through your lens, and article writing based on themes related to Plant Health were conducted. All entries were amazing and worth recognition. They portrayed beautiful messages on Plant Environmental Physical interaction through their innovative activities.

Evidence of Success: Through this event, students got an opportunity to know the importance of protection of plant health and its relation with physics.



FIRST PRIZE
DARSHITA

SECOND PRIZE
DEBORAH

Title of the Activity: A two day workshop on LEDs: Revolutionizing Illumination Technology

Webinar: 10th November, 2020

Training Workshop: 11th November, 2020

Department: Department of Physics and Renewable energy Committee

Objectives:

- Improve product roadmap decisions in assessing and implementing new technologies, marketing, and product management
- To impart deep practical knowledge about the basic principles of working of LED to the participants
- Importance of Environmental sustainability of using LED bulb

Context:

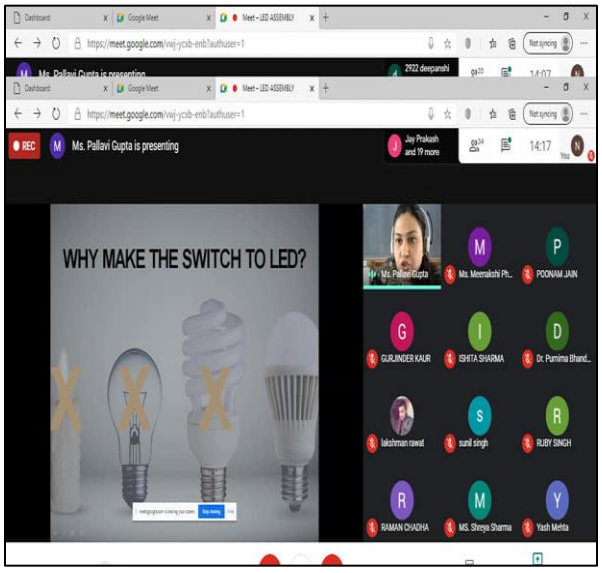
In the history of lighting devices, invention of LED was a turning point. LED stands for Light Emitting Diode. LED is a highly energy efficient lighting technology, and has the potential to fundamentally change the future of lighting In accent lighting and directional marking applications, high- brightness LEDs have emerged within the last six years. With the increasing demand for green earth, LED will play significant role in environmental strain on energy resources.

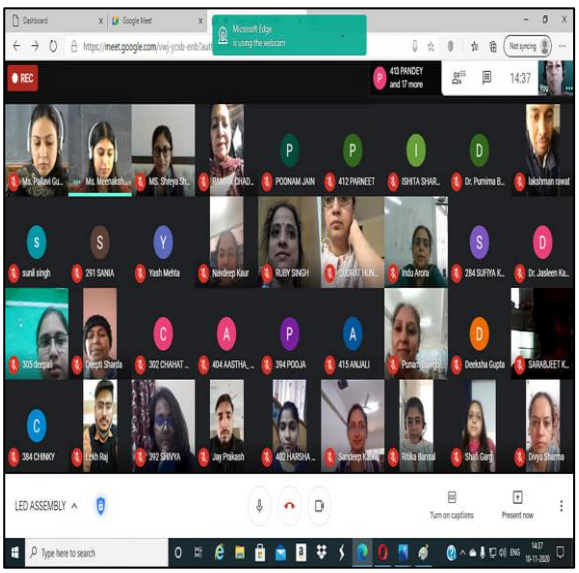
Practice:

This session was comprised of two sections including webinar on Light Emitting Diode: Revolutionizing Illumination Technology and hands on training on assembling LED parts with duration of 2 hours. In the first session, a webinar was organized by the Dept of Physics and Renewable Energy Committee. Mrs. Poonam Jain (Convener of Renewable Energy committee) formally welcomed all the participants. She highlighted the emergence of LED Technology in today's world. Resource person, Dr Pallavi Gupta briefed how LEDs have created a revolution in

illumination technology. In the presentation it was emphasized that LED lights are much more eco-friendly, and are up to 80% more efficient than fluorescent and incandescent lights". In second session, a Hand on training workshop was organized where participants successfully assembled LED bulbs. The workshop aimed at teaching and Non teaching College staff about assembling 9 W and 12 W LED. Total 43 staff members participated in this workshop.

Evidence of Success: Participants successfully made around 50 LED bulbs and tested them successfully at this workshop. Principal Dr. Nisha Bhargava encouraged the participants for pursuing such ventures in future.





Title of the Activity: A Virtual Lab Visit to ATLAS experiment at CERN

Date: 31st August, 2020

Department: Department of Physics and Renewable energy Committee

Resource Person/ Guide: Dr Muhammad Alhroob

Objectives:

- This experiment basically provides unique experiences in understanding the secrets of matter and exploring the mysteries of the universe.
- Learned the basic theories of particle physics like Dark matter, Standard model, Muon spectrometer, Liquid Argon Calorimeter etc.

Context:

ATLAS (A Toroidal Large Hadron Collider Apparatus) is the largest general purpose detector experiment. More than 3000 scientists from 174 institutes in 38 countries work on the ATLAS experiment. This experiment basically provides unique experiences in understanding the secrets of matter and exploring the mysteries of the universe.

Practice:

Dr Muhammad Alhroob, guide of the visit very well explained the basic theories of particle physics like Dark matter, Standard model, Muon spectrometer, Liquid Argon Calorimeter etc. He virtually showed the laboratories, control centers and underground tunnels of LHC that are home to many experiments. This visit was special as even without being physically present at CERN, participants were able to approach the detector closely and from different angles. Our guide stepped into the most hidden corners of CMS and explained the enormity, complexity and incredible performance of the detector in the language of the visitors.

Evidence of Success:

These kinds of virtual visits act as a window into the world of scientific progress and discovery in particle physics research, by offering students, teachers and the wider public from all over the world with a unique opportunity to take a guided walk-and-talk live tour with a researcher through the ATLAS detector, and to learn how science and technology work together for advancing our understanding of the universe. All the participants (53) enjoyed this visit

enthusiastically and got opportunity to widen their horizon of knowledge regarding particle accelerators.

REPORT ON ATLAS VIRTUAL VISIT

Department of Physics organized a Virtual Lab Visit to ATLAS experiment at CERN, Geneva, Switzerland on August 31, 2020 on Virtual platform ZOOM. ATLAS (A Toroidal Large Hadron Collider Apparatus) is the largest general purpose detector experiment. More than 3000 scientists from 174 institutes in 38 countries work on the ATLAS experiment. This experiment basically provides unique experiences in understanding the secrets of matter and exploring the mysteries of the universe. Dr Muhammad Alhroob, guide of the visit very well explained the basic theories of particle physics like Dark matter, Standard model, Muon spectrometer, Liquid Argon Calorimeter etc. He virtually showed the laboratories, control centers and underground tunnels of LHC that are home to many experiments.

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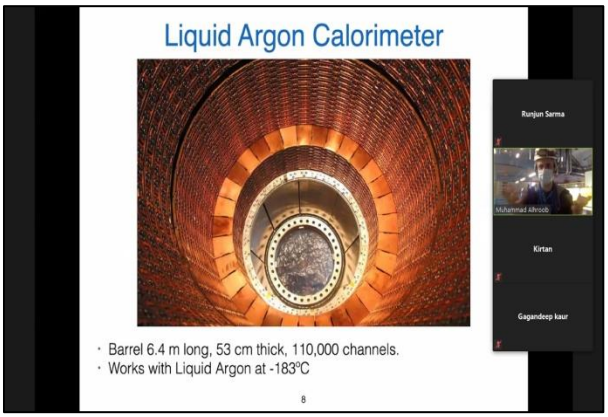


Zoom Meeting 40-Minutes
Raman Chadha
Zoom Group Chat
From Meenakshi Beniwal to Everyone:
please keep audio on mute!
From Me to Everyone:
Its a fantastic tour sir...
From Meenakshi Beniwal to Everyone:
https://docs.google.com/forms/d/e/1FAIpQLSdJwsSo526LqzIXFsvD39BmBgIkp8aZnKHdz12W0xtYEjTad8A/viewform?usp=sf_link
From Me to Everyone:
Is there any possibility to generate/detect Black hole by LHC/CERN?
From AvitA to Everyone:
Sir my question is ta
where will these experiments eventually lead us to..is it the exact origin of life!?
From Me to Everyone:
thank you sir....
From Prabhjot Kaur to Everyone:
sir, can a person with solid state physics and coding background contribute in high energy physics?
To: Everyone
File
Type message here...
Muhammad Alhroob
Unmute
Stop Video
Participants
Chat
Share Screen
Record
Reactions
Leave
Type here to search
ENG
01:23
31-08-2020