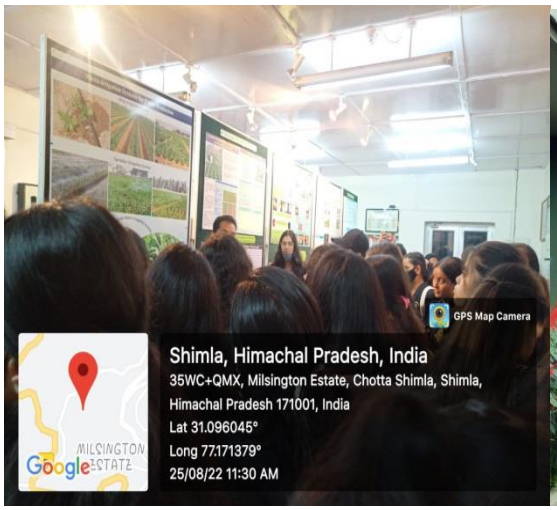
Session- 2022-2023

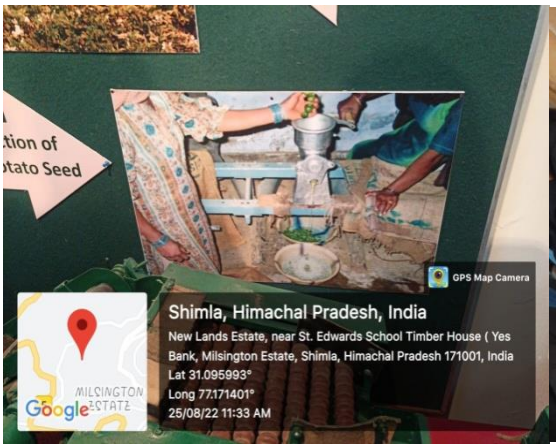
VISIT TO CPRI

On August 25th, 2022, B.Sc. III year students visited the Indian Council of Agricultural Research (ICAR) Central Potato Research Institute (CPRI) in Shimla. Established in 1956, the CPRI facilitates hybridization work in potato breeding and maintains seed potato health. The purpose of the visit was to show the students the electron microscope and other machines used in the institute, and to brief them about the history, working, and achievements of the CPRI.

During the visit, the students were shown the working of the Transmission Electron Microscope (TEM) in one of the labs. The students were amazed to learn that the TEM can magnify specimens up to 3 lakh times. This is due to the very small wavelength of electrons, which is inversely proportional to the resolution of the microscope. With advancements in technology, the magnified image of live samples can be observed through cameras present on the insides of the microscope, directly on a screen, and on a photographic plate.

The students were also shown images of various viruses captured through the cameras of the TEM. Overall, the visit provided the students with an opportunity to see the ICAR-CPRI Institute and the TEM, and gain knowledge about the working of this powerful microscope.





PARTICIPATION IN WORKSHOP

On September 9th and 10th, 2022, the Indian Academy of Sciences, in partnership with the Department of Science and Technology (DST) of the Government of India, organized a workshop on Frontier Areas in Materials Research at Himachal Pradesh University. The initiative was spearheaded by the Editorial Board of the Bulletin of Materials Science, with scientists and professors from various institutes across India coming together to inspire and educate aspiring students about the field of materials science, and the career opportunities available in this exciting area of research.

9th September 2022

During the workshop, four sessions were conducted by distinguished professors and experts in the field of materials science.

The first session was led by Prof. Amitava Patra, who spoke about the contributions of Indian scientists in pre- and post-independence eras. He discussed the origins of physics, chemistry,

and mathematics, as well as modern sciences, and highlighted some famous scientists from India during these periods. He also talked about the difference between first-generation computers and upcoming technologies.

The second session was conducted by Prof. AyanDatta, who focused on inorganic analogues such as graphene, silicene, and phosphorene. He discussed the structure of graphene and the various allotropes of phosphorus.

In the third session, Prof. Rabibrata Mukherjee talked about nanoparticle-mediated stabilization and morphology modulation in polymer blend and bilayer films. He discussed ultra-thin coating interactions, their uses, and disadvantages, as well as silicon-based electronics, hybrid IC, monolithic IC, planar transistor proposal, and Moore's Law.

The fourth and final session was conducted by Dr.Indranil Sarkar, who discussed nanotechnology and spintronics-based next-generation devices. He talked about Denard Scaling, multigate transistors, and quantum tunnelling issues that can be solved by spin.

10th September 2022

The first session was conducted by Prof. M. Eswaramoorthy on porous materials and catalysts. He discussed the applications of porous materials and the use of catalysts in the Green Revolution, Hawlery Process, and everything about H2O2.

The second session was conducted by Prof. Ashok K. Ganguli, who talked about the gifts of science to study, including E-vehicles and the latest electron microscope.

The third session was conducted by Prof. UmeshWaghmare on predictive models of materials based on quantum physics and machine learning. He discussed the differences between tetrahedral and octahedral structures and electron waves and introduced the participants to software like Quantum espresso and SEISTA, ferroelectrics, and machine learning.

The fourth session was conducted by Prof. BL Parasad on nanoparticles with different attire. He talked about the properties of nanoparticles and their applications.

CELEBRATING INTERNATIONAL YEAR OF GLASS

On November 16th, 2022, the Department of Physics held a talk in celebration of the "International Year of Glass (IYoG-2022)." The talk was titled "Fiber Optics: Backbone of Present and Future Communications," and the speaker was Dr.Tarun Sharma, Assistant Professor of Electronics and Communication Engineering at the University Institute of Technology (UIT) Shimla, Himachal Pradesh University.

During the talk, Dr. Sharma discussed the principle, working, and usefulness of optical fibers in modern-day communication. He provided a brief history of fiber optics in communications and highlighted major milestones. Additionally, he spoke about the future of fiber optics in fields such as artificial intelligence, nanotechnology, neuromorphic computing, and more.

The talk was informative and provided valuable insights into the critical role of fiber optics in communication technology both currently and in the future.


Optical Fiber & Communications System
realme Shot on realme 7
2022/11/16 11:45


Advantages of Optical Fiber Communication
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2022/11/16 11:36

NATIONAL SCIENCE DAY CELEBRATIONS

Science has always been an integral and significant part of our lives. National Science Day is observed on 28th February every year to commemorate the discovery of Raman Effect by the Indian physicist sir CV Raman in 1928 and serves as a reminder of all the efforts and contributions of scientist who have dedicated their lives to advancing the frontiers of scientific knowledge. Keeping in view the theme, for the National Science Day of this year "Global Science for Global Wellbeing", St. Bede's College, Shimla in collaboration with prominent organizations that work towards advancing science education and research, Indian association of Physics Teachers (IAPT) & Indian Science Congress Association, Shimla Chapter, (ISCA), organised two days program entitled "Discoveries in Science and Sustainable Development" to create awareness and promote scientific thinking among students and general public. The program was attended by students at various colleges of namely Rajkiya Kanya Mahavidyalya (RKMV) Shimla, Government College, Theog, College of Excellence; Sanjauli, Shimla, Shoolini Institute of Life Sciences and Business Management (SILB); Solan, Rajiv Gandhi Government degree college Chauramaidan: Shimla, Shoolini University Solan, and St. Bede's College, Shimla.

The program included talks by eminent speakers, a film on cyclotron, demonstration sessions and sky watching, inter college science quiz competition and exhibition by science students.


Organizes
Science Day-2023
Discoveries in Science
and
Sustainable Development"
February-1st March, 2023
STAR PERFORMER OF BIG SCIENCE: CYCLOTRON
PK AHLUWALIA
PRESIDENT IAPT


Model of
Gold leaf
electroscope
using Al foil
Gold leaf
electroscope


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PHYSICS
REAL LAB
VIRTUAL LAB
MATHEMATICS
FUNCTIONS
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