

GLORIOUS SCIENCE WEEK – REPORT

(*Vigyan Sarvatra Pujyate*)

Centre of Excellence Government Degree College, Sanjauli, Shimla-06
(22nd to 28th February – 2022)

A week long **Glorious Science Week –*Vigyan Sarvatra Pujyate*** began on 22nd February 2022 at **Centre of Excellence Government Degree College, Sanjauli , Shimla** in collaboration with **Himachal Pradesh Council for Science Technology and Environment (HIMCOSTE)** and **Vigyan Prasara Department of Science and Technology Government of India**. The inaugural session commenced with the felicitation of the Chief Guest Major General (Retd.) Atul Kaushik, Chairperson, Private Education Regulatory Commission, H.P. by Dr. Sudesh Mokhta, Member Secretary, HIMCOSTE.



The blessings of goddess Saraswati were invoked with the lamp lighting by the Chief guest along with other dignitaries and recitation of *Saraswati Vandana* by the students of the Department of Music of the college.

Mr Satpal Dhiman, Additional Director, HIMCOSTE formally welcomed the chief guest and participants from the neighboring colleges of the city .He introduced the four themes of the event namely:

1. **Annals of history of science**
2. **Milestones of modern science and technology**
3. ***Swadeshi Paramparik* inventions and innovations**
4. **Transforming India**

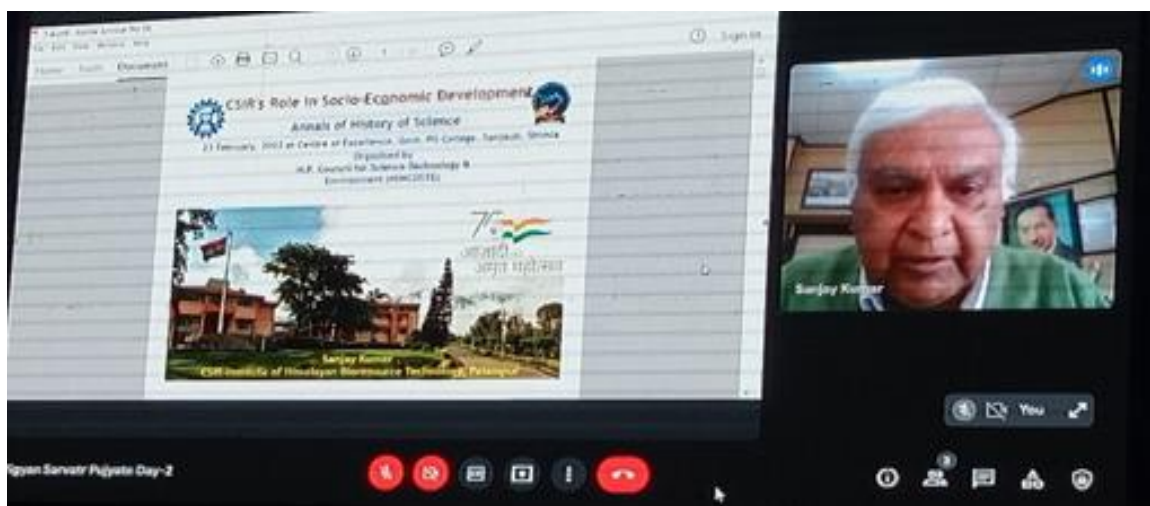
Mr. Dhiman enunciated that these themes would be covered during the science week through experts' talk on various relevant topics, science quiz competitions, exhibition of science models and screening of award winning documentaries and it would culminate in **YUVA VIGYAN PURASKAR CELEBRATIONS** on National Science Day on 28th February 2022.



The Chief Guest, Major General Atul Kaushik S&M, VSM (Retd.), Chairman, Himachal Pradesh Private Educational Institutions Regulatory Commission, said in his address that the event would bring to the fore the stories of people in science who made great achievements in the field of science technology.

He laid emphasis on the achievements of various scientists like Dr. C.V Raman, Arya Bhatt, Dr. Abdul Kalam, who have made commendable contributions to science and society. The inaugural session came to an end with the address by Dr. Chander Bhan Mehta, Principal, Centre of Excellence Government Degree College, Sanjauli laying stress on promotion of such activities to inculcate scientific temperament in the younger generation. The post lunch session was a visual treat as its focus was on bringing forth the scientific innovations and science as a means of bringing about social and economic development through screening of documentaries such as ‘**Mega Science Projects :India’s Contribution**’, ‘**Atal Tunnel Rohtaang : An Engineering Marvel**’ and ‘**Vigyan Veer**’. The focus of the session was to celebrate achievements of science and technology over the last 75 years through this programme that would inspire the youth.

The first session of the second day on 23rd February 2022 commenced at 11 am with Dr Sanjay, Director, IHBT Palampur, as the Resource Person. His talk was entitled ‘**CSIR’s Role in Socio-Economic Development: Annals of History of Science**’. He gave an insider’s point-of-view vis-à-vis the emergence of CSIR and its role in taking India on to the path of science and technology. He shared that in the pre-independence era itself, a need was felt for an official Pan-India body espousing the cause of scientific and industrial research. Consequently, in 1940, the *Board of Scientific and Industrial Research* was established, initially for a period of two years. Mr Mudaliar graced this board as its maiden Chairperson. The Resource Person also threw light on the role of Dr Bhatnagar, whose contribution to the field of scientific and industrial research earned him the title of ‘*Father of National Laboratories*’. With the efforts of these luminaries and very especially that of Mr Mudaliar, CSIR came into existence in 1942, five years before India earned its sovereignty from the British Raj. The CSIR established five labs during this period. This number has exponentially risen to 37 in the present times and IHBT Palampur is one of them.



The Resource Person for the session introduced to the audience the sphere of CSIR's work, which includes diverse sectors such as leather industry, minerals, agro-nutrition, biotechnology, healthcare, aerospace, civil infrastructure and engineering. He delved into the significant contributions of CSIR over the years. For instance, CSIR's role in the promotion of technology led innovations, its role in 'Green Revolution' and its efforts in helping Himachal emerge as the biggest producer of Marigold essential oil. He also talked about CSIR's farmer centric initiatives, CSIR Aroma Mission, CSIR Pearl Culture, CSIR makeshift hospitals and CSIR's initiatives for the mitigation of transmission of SARS COVID virus. He also put forth the contribution of women in the field of science and technology and quoted some names like Kamala Sohonie and Janaki Ammal among others. He ended his insightful talk by exhorting and motivating the students to work with sincerity to reach their goal. Towards the end of the first session, the Head of the institution, Principal Dr C B Mehta too addressed the participants which comprised both students and teachers from several institutions across the state. He acquainted the students with different programs such as the winter schools and the summer schools, exclusively being run for promoting science as a subject among the students.

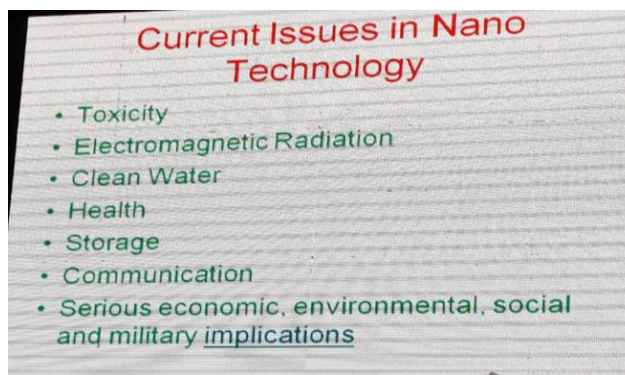
The second session of the second day was helmed by Dr S S Randhawa, Principal Scientific Officer, HIMCOSTE, who was also the Resource person for the session. His discourse was entitled '***Advancements in Space Technology & its Application Over Mountains***'. During the course of this brilliant presentation, he talked about space technology and its applications such as Remote Sensing. He explained the types of platforms used for remote sensing and its application in satellites.





In the context of Himachal Pradesh, he portrayed the hazard vulnerability of the fragile hill state. These hazards include geological, atmospheric, hydrological, fire and other accidents such as earthquakes and landslides. The session ended with a formal vote-of-thanks and the august gathering dispersed for lunch.

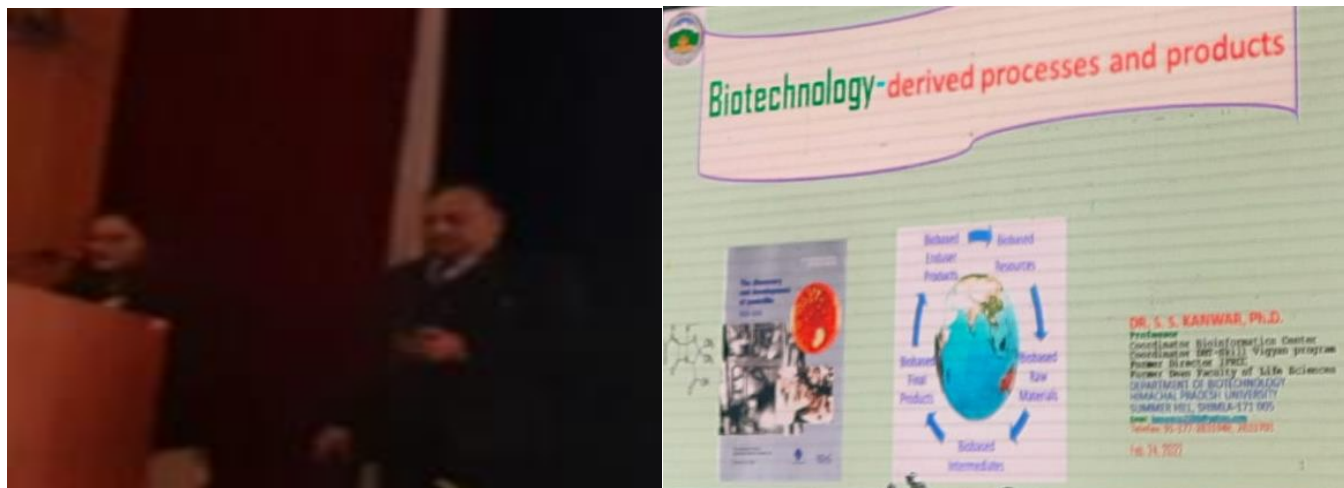
The theme for the 3rd day on 24th February 2022, of the glorious science week was Milestone of Modern Science and Technology. The session commenced at 11 am with the felicitations of the eminent Resource Persons Dr.Mahavir Singh Khachi (Commonwealth Fellow), Professor Department of Physics, HPU, Shimla and Dr S.S Kanwar, Professor Department of Biotechnology, HPU Shimla by Shri Sat Pal Dhiman, Additional Secretary, HIMCOSTE. The first speaker for the day was Dr. Mahavir Singh who reflected his profound knowledge on the Topic : ***‘Issues, Challenges in Nano Technology and Bright Future of Magnetic Nano World’***. The resource person threw light on the importance of nano-technology in different fields of life. He also stressed on the issues and challenges in the fields of nano-technology which are toxicity, electro-magnetic radiation, serious environmental, social and military implications clean water etc. He also put forth his views on the bright future of soft Nanomagnetism.



He stated that in future Nanotechnology might lead to huge advances in health care, improving methods of detecting and treating diseases like cancer. He made the audience aware that nano particles are Eco friendly, Biocompatible and Non Toxic.

He elaborated on the Applications of Magnetic Nanotechnology in the field of Spintronics, Biomedical applications, Communication sector, Sensors, Water Purification and High density storage. The Resource Person enlightened the audience about the huge potential of Nanotechnology to transform the peoples' life for the better. An exalting demonstration of the topic Nanotechnology on our lives galvanized the engrossed participants.

The second speaker of the day was Dr. S. S. Kanwar, Professor, Biotechnology, HPU Shimla. He shared his views on the topic: ***'Biotechnology – Derived processes and products'***. He emphasized that Biotechnology is science for human welfare and the Egyptians were the first to make biotechnological processes like brewing beer and baking bread in the 4th millennium. He discussed in detail the importance and applications of the various fields of Biotechnology like Medical, Industrial, Environmental, Agricultural, Plant and Animal Biotechnology which has been playing a dynamic role for the benefit of the society.



He also made the audience aware that according to NASDAQ composite index, Biotechnology is the most profitable sector. He apprised the audience about the career opportunities in Biotechnology like Biomedical Engineering, Biochemist, Microbiologist, Medical Scientist, Bio-manufacturing specialist etc. He succeeded in triggering the young minds to think about the innovative ways and use their creativity to determine which smaller questions are likely to yield results, imagine possible answers to their questions

and device ways to test those answers. He added that innovation involves a different way of looking at problems and solving them. The resource person enlightened the students that with a proper fellowship like CSIR/UGC NET etc. students can also get desirable jobs and salaries within a good private as well as government institute. Besides teaching there are broad scope in R&D sector with a good salary package and experience too. He succeeded in increasing the horizon of knowledge of the audience about Biopesticides. He laid stress on the use of Biopesticides and stated that their use reduce soil pollution and erosion. Hence, organic farming requires biopesticides for good crop production. He emphasized that biopesticides are effective in small quantity and often decompose quickly, resulting in lower exposures and largely avoiding the pollution problems caused by conventional methods. He concluded his lecture by stating that Biototechnology is panacea of human health, economy and welfare. Towards the end of the session feed back of the program was given by two Non Medical students of COE, Govt. College Sanjauli **Shrinivas** and **Pranav of B.Sc. I**. Both the students were appreciated by the organizers for showing courage to speak on the stage and interacting with the Resource Persons.

The first session of the fourth day on 25th February 2022 commenced at 11 am with Dr P. K. Ahluwalia, former Professor of Physics Himachal Pradesh University and present President IAPT (Indian Association of Physics Teachers), as the Resource Person. His talk was entitled as **75 Impactful Years of Indian Science and Technology**. He started his talk about the journey of developments in Science and Technology during the past 75 years of independent India. In 1947, our country stood with literacy rate of 12 % and average life expectancy of 32 years with per capita income of Rs. 230. He gave a deep insight of, How the Festival of democracy could be celebrated by using indelible ink to the development of Electronic Voting Machine.



The Resource Person also threw light on the contribution of Dr Homi Bhabha in making of TIFR Mumbai as he desired to build a school of Physics comparable anywhere in the world, later also established AEE Trombay now known as BARC in 1954. He also gave a brief history of using atom for peace as man and making of modern temples (Research Reactors) at BARC as APSARA (1956), Cirus (1960) and Dhruva(1985). He also presented the contribution of former president of India know as Missile Man of India, Dr A. P. J. Abdul Kalam. The five Missiles Prithvi, Agni, Trishul, Akash, Naag created a defence shield for India, which were the materialized thoughts of his imagination. He also elaborated The Green Revolution by M.S. Swami Nathan in Agriculture sector, White Revolution by Dr. Verghese Kurien in the Dairy products. The Resource person also suggested to the audience that everyone should read the book titled as Rebooting India related to Adhar number by Nandan Nilekani, Wings of Fire by Dr. A.P.J. Abdul Kalam and the movies like Manthan and Quantum Indian. He also introduced about India's IT Giants like HCL, INFOSIS and ISRO. He concluded his talk by paying tribute to Dr. C. V. Raman the noble prize winner in Physics.

The second session started with the talk of Dr. Saurabh Chaube, IIT Mandi CATALIST – A Technology Business Incubator on **Start Up in Hills**. He presented India as Startup Nation with third largest Startup Echo system in the world. His mainly focused on the initialization process of Startup which comprise of two major factors, Innovation and Commercialization.



He promoted the future of Science and Technology in India by showing short videos of Startups like Tavasta (3-D print Houses), Dhruv Vidyut (Electric Bicycles), Spandan based on Sun Faux Technology (Medical diagnosis) and Self driving vehicle.

He also threw light on the achievement of IIT Mandi for establishing first incubated Startup – The Solar Lab (TSL) and various Startup Schemes for setting of new Startups. He ended his entrepreneurial talk with brief introduction of future Technologies as Artificial Intelligence, Block Chain and Mixed Reality – Applications.

A Quiz on Science and Technology was organized in post lunch session in which Six teams from vicinity Colleges participated. There were four rounds in which COE, GDC Sanjauli got the first position and the second position was bagged by St. Bede’s College and the third position by RKMV after the rapid fire round. The day concluded with distribution of prizes to the winners of Quiz Competition.



The first session of the day on 26th February 2022, commenced at 11 a.m. with the formal welcome of the chief guest, Mr. Anil Thakur, additional PCCF wildlife, H.P. , and other dignitaries. Ms. Shweta Shiv Kumar, doctoral fellow at center for wildlife studies, Bangalore was the first guest speaker.

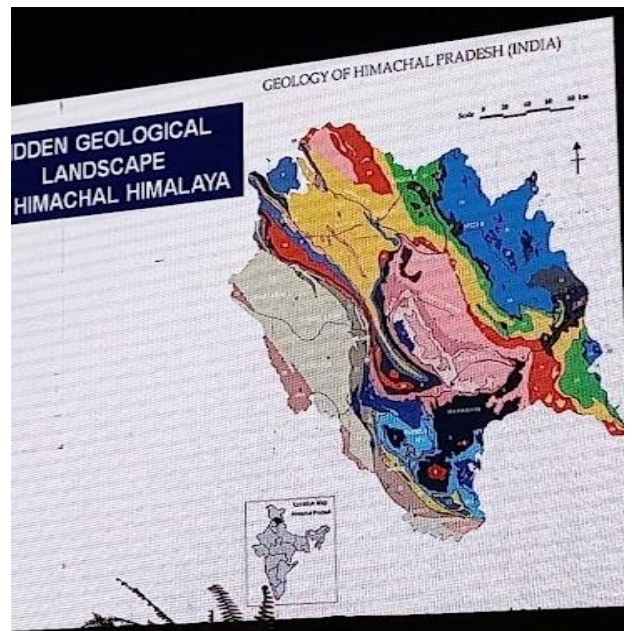
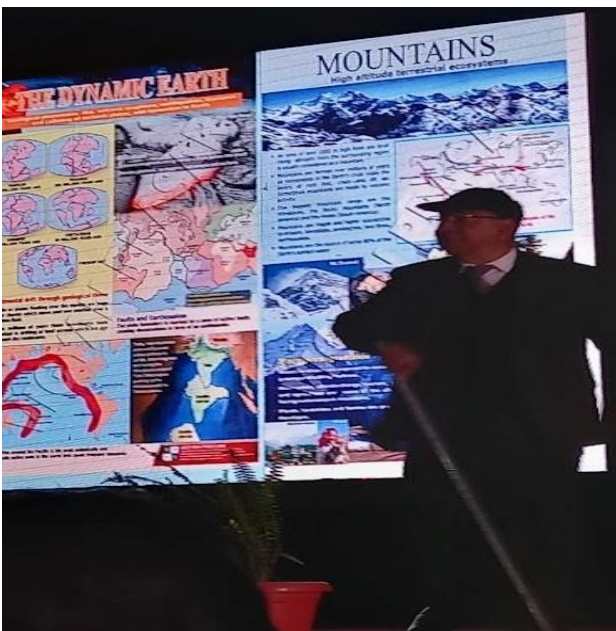
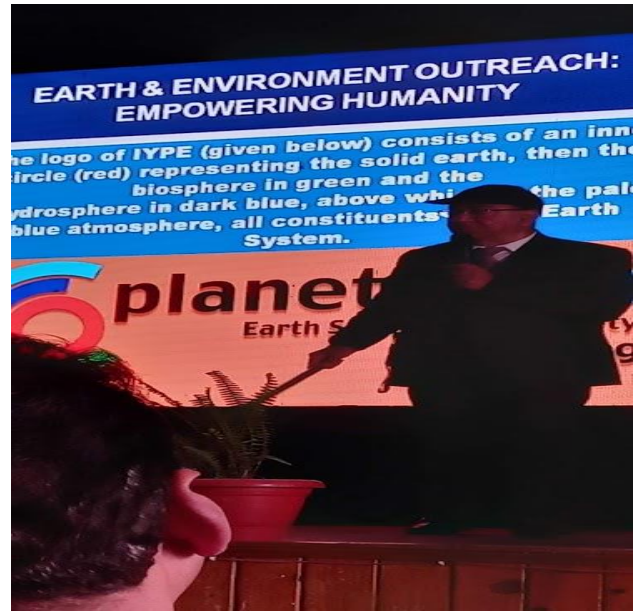
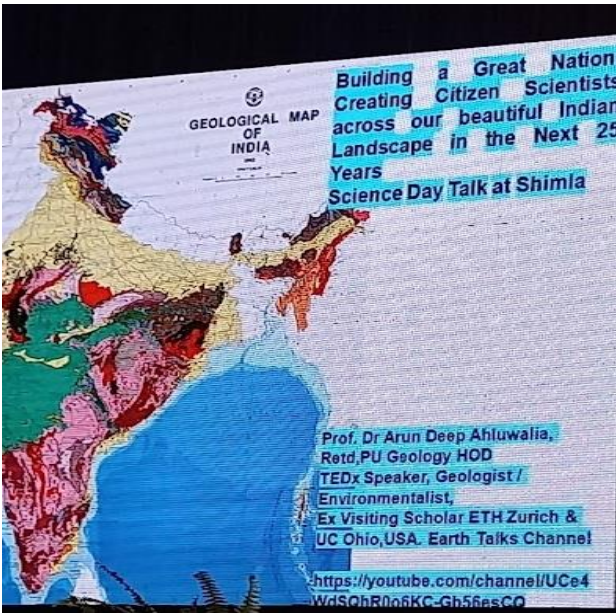
The title of the talk was “**People and Leopards of Himachal Pradesh**”. She started by introducing the behavior of leopards towards humans. She told that nine leopards were found against ten locations in a small region of about 60 km in Shimla. The speaker elaborated the eating habits of leopards in the agricultural landscapes. She gave insight into the attack done by leopards over a period of ten years. She also put forth her contribution in organizing workshops in the different schools for sensitization of students. In the end of her talk, she motivated the students to work on different project on leopard studies.

In the next part, Mr. Sudesh Kumar Mokta, director and member secretary, HIMCOSTE, addressed the august gathering. He motivated the school and college students to come forward and participate in different programs organized for them. Therefore, the chief guest, Mr. Anil Thakur, PCCF wildlife H.P., addressed the audience. He appreciated both the speakers for their research oriented presentations. He admired the efforts put in by the forest department for the conservation of birds. He apprised the audience about the migratory birds especially found in month of December to February. He concluded his lecture by stating that active participation of students in such kind of events is very important to instill scientific temper in them. He also congratulated the organizer for organizing such an enlightening and wonderful event.

After the Chief Guest’s address, prize distribution ceremony was held. Students from the schools of different districts of H.P. were honored by the chief guest and other dignitaries for participating in different activities/competitions held to celebrate glorious science week. It was a proud moment for the winners and their teachers who definitely carried with them great memories to be cherished forever. The categorized of the prizes were, senior rural, junior rural, senior urban and junior urban. The session ended with the formal vote of thanks by Ms. Deepshikha from HIMCOSTE.

The first session of the day 27th February 2022, commenced at 11 AM with the formal welcome of the Resource person Prof. A.D. Ahulwalia, Dr. Anil Kumar Thakur and all the other guests. The main speaker for the first session was Prof Arun Deep Ahulwalia, Retired Professor from Department of Geology, Panjab University, Chandigarh. The topic of discussion for the session was, ” **Building a Great Nation: Creating citizen scientists across our beautiful Indian Landscape in the Next 25 years**. He delivered inactive session on man earth legacy, especially encouraging student to study the geological sciences. He talked about world Heritage in both Cultural and Natural aspects and how to promote cooperation among all nation and people to contribute for the protection of these universal treasure intact for future generation. With the beautiful diagram he explained about super continent Pangea and movement of India northward around 200 million years back. He shared the rich wealth of nation is on geological resources and sites.

He said government of India and UNESCO should identify Geo parks in India. He said about his inspiration was Shri Chandra Vohra, Indian geologist who climb Mount Everest in 1965. He guided students on Earth and Environment outreach: empowering humanity in which Planet Earth- Earth Science for society are inspiring for better knowledge. He further explained the evolution of earth, in which tectonic theories, plate's formation, type of features evolved, geological hazards etc was covered. In relation to hazards, Himalayas are prone to geological disturbances which affect the terrestrial ecosystem. Atlast, he suggested that India's prosperity requires show casting through India's geo-tourism potential & rich diversity.



The Second speaker was Dr. Anil Thakur, Associate Professor, RKMV, Shimla. His lecture was on topic **Plant diversity for human well being**. He told about the rich floral diversity of India in terms of Medicinal Plants. In India there are 1748 species of Medicinal Plants available, out of which 1123 is available in J&K and 643 in Himachal Pradesh.



He explained in detail about the medicinal values of different plants found in Himachal Pradesh and their commercial value. He highlighted the importance of local flora found in Himachal such as **Neem, Bana, Basuti, Longata, Tulsi, Shatavari, Alovera, Ashawgandha** etc. The session ended with vote of thanks.

The Celebration of Science day on 28th February 2022 and the closing ceremony of the week long programme commenced at 11 AM with the formal welcome of the Chief Guest, Hon'ble Education Minister, Govt. of Himachal Pradesh, Sh. Govind Singh Thakur at Gaiety Theatre, The Mall, Shimla.



The other guests were Shri Sudesh kumar Mokhta, Member Secretary HIMCOSTE, Shri Satpal Dhiman, Additional Secretary, Environment, Science and Technology and Joint Member Secretary HIMCOSTE, Shri Pankaj Lalit, Director Elementary Education, Dr. C.B. Mehta Principal, COE, Government College Sanjauli and Shri Anoop Vaid ,Ex Councillor MC .

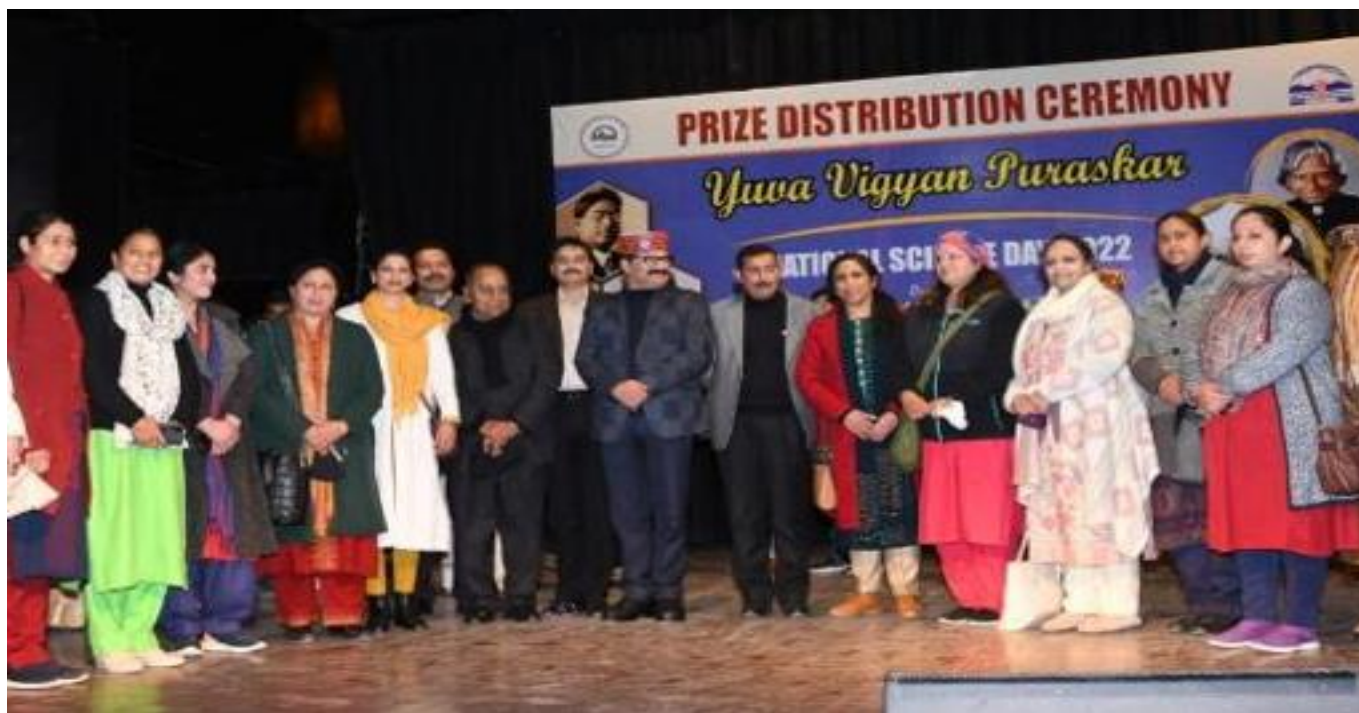
The day was allocated to promote the theme for the science day- 2022: **Integrated Approach in Science and Technology for Sustainable Future** and tribute to Physicist Dr. C.V Raman. The celebration began with the guest lecture given by Dr. Prof. Amandeep Ahluwalia, Retd. CAS in Geology PU Chandigarh. He beautifully illustrated the Evolution of life through fossils. He also explained the different Eras and Periods. He showed beautiful pictures of footprints of Dinosaurs. The speaker fully interacted with the audience and emphasized on preservation of Geological sites. His power point presentation had extracts from newspapers, books and original photos.

The program was inaugurated by lighting the lamp by the Chief Guest and other dignitaries present. This was followed by Saraswati Vandana by the students of COE, Government College Sanjauli. The Chief Guest was formally honoured with Himachali Topi, Shawl and a memento by Shri Sudesh Mokhta.



Shri Sudesh Mokhta in his welcome speech spoke about the celebration of National Science day on February 28th to remember the Raman Effect. He also mentioned that CV Raman won the Noble Prize in the field of Physics in 1930 and this fact is being celebrated as Science Day every year. He emphasized on the aim of HIMCOSTE in inculcating the scientific temper and awareness on various scientific aspects

among students. He said that under Yuva Vigyan Purnskar Yojna, awards of Rs 10000 to 100000 are given to the students of 10+2 Science stream that bag top ten position in Himachal Pradesh Board of School Examinations. The activities of HIMCOSTE were presented by a power point presentation. The STIP was launched by the guests.



The Chief Guest for the occasion Shri Govind Singh Thakur spoke about the importance of Science Day and said that he was very happy to be amongst the young scientists and to honor them. He mentioned in his speech that the students were very talented and he was highly impressed by their models. He said that to develop scientific temper in students “Science Fair” and Eco clubs could play an important role. The

students were given prizes which were categorized in three categories- Meritorious students, Scientific Project Report and Innovative Science Model. About 100 students were given prizes by the Chief Guest.

A vote of thanks was delivered by Shri Satpal Dhiman, Additional Secretary, Environment, Science and Technology and Joint Member Secretary HIMCOSTE. This is how the week long programme of Science concluded successfully with collective efforts of Staff, COE, Govt. College Sanjauli under the able guidance of Nodal Officers Prof. Bharti Bhagra (Assoc. Professor in Geography), Dr. Manisha Kohli (Assoc. Professor in Botany) and HIMCOSTE.

