

Three-Day State-Level Student Workshop Organized at CSIR-CBRI, Roorkee

CSIR-Central Building Research Institute, Roorkee organized a **Three-Day State-Level Student Workshop for KV Students** during **July 18-20, 2018** under the **Jigyasa Student-Scientist Connect Programme** to inculcate scientific temper by introducing them to the innovative techniques of building materials, health monitoring and rehabilitation of the structures, disaster mitigation, fire safety, energy efficient rural and urban housing etc.



On **July 18, 2018**, the **Inauguration Ceremony** of the programme, **Shri Somit Shrivastav**, Deputy Commissioner, Kendriya Vidyalaya Sangathan, Dehradun Region, Uttarakhand, graced the occasion as the Chief Guest and **Dr. N. Gopalakrishnan**, Director, CSIR-CBRI, Roorkee presided over the function.



Students of KV No. 1, Roorkee welcomed the dignitaries with **Scouts' Protocol** and a **Welcome Song**. The workshop commenced with **Lightening of Lamp** by dignitaries and **Saraswati Vandana** by students of **KV No. 1, Roorkee**. **Dr. Atul Kumar Agarwal**, Senior Principal Scientist and Jigyasa Programme Coordinator, CSIR-CBRI, Roorkee conducted the function.

The Chief Guest was presented a **Holy Basil/Tulsi (Ocimum tenuiflorum) Plant**, giving the message of being in harmony with nature. **Dr. Atul Kumar Agarwal** briefed about the spiritual and scientific significance of Tulsi.



Shri Somit Shrivastav encouraged the students to study ancient Indian texts and Upanishads as they hold invaluable knowledge of science. He told that many government and private offices have adopted the verses from these scriptures as their basic guiding principle.



In his Presidential Address, **Dr. N. Gopalakrishnan** motivated all the students to adopt a stress free study schedule and to develop the tendency to learn the what, why and how of everything, as the first step of learning, to achieve the dreams of being the Tendulkar and Kalam of our fields.



Explaining X-ray and X-copy, **Dr. Atul Kumar Agarwal** said that where X-Copy draws our external images, X-ray reveals the weaknesses inside us. So, along with X-copy we should inculcate a habit to carry out our X-ray for our personality, learn from our eXperience and eXpel our weaknesses to eXcel in our lives.



During the Inaugural function, the students of KV No. 1, Roorkee presented a **Science Song** honouring the scientists, a small **skit on Digital India** reflecting the technical advancements of India and a **skit on Swachh Bharat** giving the message of cleanliness.



The latest edition of CSIR-CBRI quarterly bilingual “**CBRI Newsletter Bhawnika**” was also released on the occasion.



The **Inaugural Ceremony** concluded with the **vote of thanks** proposed by **Dr. L. P. Singh**, Principal Scientist, CSIR-CBRI, Roorkee followed by the **National Anthem** by **students of KV No. 1, Roorkee**. A **tree was planted** in the CSIR-CBRI Main Lawns, to send the message of saving the environment.

In the **technical session**, **Dr. Suvir Singh**, Chief Scientist, CSIR-CBRI, Roorkee presented a lecture on "**Fire Engineering**" and informed about the fire safety and challenges in buildings, and the latest technologies developed by CSIR-CBRI for the prevention, protection and confinement of the fire.



With the help of **short video films**, **Dr. Atul Kumar Agarwal**, motivated the students to face the challenges of life with a positive attitude and transform them into opportunities and achievements through hard work and dedication. He said that we need to bring a positive change in the education by reconnecting students with science and developing a scientific temper within them. Dr. Atul Agarwal also presented a lecture on "**CSIR & CBRI: A Scientific Journey**" and introduced the students to research work being carried out by the Institute. He also gave the detailed overview about **Jigyasa** Programme.

Dr. L.P. Singh presented a lecture on "**Nanotechnology**" and informed about applications of nanotechnology in buildings, the use of nanotechnology to modulate concrete and optimize loading capability in buildings.



A **Written Quiz Competition** was organized for the students under the programme, wherein all the students answered questions about various topics of science and scientific institutions like BARC, CSIR and CBRI etc.

The second day of the workshop on **July 19, 2018**, inaugurated with a **Prayer Session** in which the students sought the gift of education, morale and harmony from God.



Quoting the example of a potter, **Dr. Atul Kumar Agarwal** told that when a potter creates chillam, this form of soil burns both the soil and its consumer. However, when the same potter brings a positive change in his thoughts and creates a pitcher, this form of soil gives the coolness to both the soil and the consumer by

storing cool water. Similarly, we are capable of generating enthusiasm in the life of many people associated with us by our positive attitude.

Dr. R.K. Goel, Chief Scientist and Scientist in charge, CSIR-CIMFR Regional Centre, Roorkee presented a lecture on "**Tunnel Engineering**", and explained about the diverse types of tunnels, their excavation process; equipment used construction challenges and the key safety features during the process.



B.K. Lakshmi Chand Bhai from Mount Abu Rajasthan spoke about the art of living while presenting a lecture on "**Stress and Memory Management**" and said that a healthy lifestyle and positive ideology should be adopted for stress free life and rapid memory.

Dr. Kulwant Singh, Scientist H, BARC, Mumbai presented a lecture on "**BARC in Human Services**", and talked about the technological contributions of Bhabha Atomic Research Center to the society including clean, eco-friendly, renewable resources, nuclear fusion etc.



An **Oral Quiz Competition** was organized for the students, under which various questions were asked from various subjects including Physics, Chemistry, Biology, Mathematics etc., in various rounds.



Inaugurating the third day of the workshop on **July 20, 2018**, **Dr. Atul Kumar Agarwal**, explained the importance of patience to the students, and informed that a great writer Leo Tolstoy had once said that time and patience are our biggest champions. Patience means to wait, but not idly- that is laziness. Patience is

that even if we lose a thousand times, we work hard and try again, and wait for success. He said that we could hold water in a sieve, provided be patient enough to wait until it turns to ice.

Dr. Achal Kumar Mittal, Senior Principal Scientist, CSIR-CBRI, Roorkee presented a lecture on “**Basics of Earthquake Engineering in Buildings**”, and informed the students about the main risk areas and earthquake resistance techniques in various types of load-bearing masonry buildings and safe evacuation measures during an earthquake.



Dr. Tabish Alam, Scientist, CSIR-CBRI, Roorkee presented a lecture on “**Solar Thermal Collector**” and informed about their types, functioning and applications in production of electricity, purification of air & water and air conditioning in residential and industrial buildings, etc.

Mr. Soju Alexander, Scientist, CSIR-CBRI, Roorkee presented a lecture on “**Intelligent Sensors**” and gave detailed information about the elements of intelligent sensor and its technical capabilities.



Dr. Atul Kumar Agarwal presented a lecture on “**Career Opportunities**” and about the different areas of undergraduate education, examinations and career opportunities after class 12. **Mr. Vipin Kumar Tyagi**, Principal, Kendriya Vidyalaya No. 1, Roorkee asked the students to adopt a scientific approach to their lifestyle. **Dr. Abha Mittal**, Senior Principal Scientist, CSIR-CBRI, Roorkee conducted the technical sessions.



The students visited the **enriched laboratories** of the Institute during the workshop- **Rural Park, Fire Research, Environment Science and Technology - Clay Products, Efficiency in Building, Organic Building Materials, Geo-Technical Engineering, Solar Panel and Structural Engineering** etc., **interacted with the Institute's scientists** and cleared their doubts through interactive Q&A sessions.



In the **Concluding Session** of the workshop, a **Panel Session** was organized with the panellists **Dr. Atul Kumar Agarwal, Dr. Kulwant Singh, Dr. L. P. Singh** and **Mr. Vipin Kumar Tyagi**.



The students and teachers shared their experiences and feedback during the session. The programme received a **positive feedback** from the participants wherein they described it as interesting, creative and informative and expressed their desire to participate in more such programmes in the near future.



Winners of the **Quiz Competition** organized during the workshop were felicitated during the session. The programme concluded with the **distribution of certificates and mementoes** to the participants.



About **90 students** from **11 Kendiya Vidyalayas** including KVS of **Pauri, Lansdowne, Raiwala, Almora, Gauchar, Srinagar, Haldwani I shift, Haldwani II shift, BHEL Hardwar, KV No. 1, Roorkee and KV No. 2, Roorkee**, along with their teachers participated in the workshop.