

India International Science Festival 2023

(13th December, 2023)

The India International Science Festival 2023 which is being organized from 17th to 20th January, 2024 at Faridabad featured variety of events including Women Scientists and Entrepreneurs Conclave, S & T Media and Communicators Conclave, New Age Technology Show, Young Scientist Conference, IISF Challenge and many more. CSIR – Central Building Research Institute Roorkee arranged a dynamic and engaging student-scientist interaction outreach activity on December 13, 2023. The event, which drew the enthusiastic participation of 143 students from prominent educational institutions such as Anand Swaroop Arya Saraswati Vidya Mandir Roorkee, Kendriya Vidyalaya 1 Roorkee, Mont Fort Roorkee, and CEOR Institute Roorkee, along with their teachers, proved to be an enriching experience for all involved.

INDIA INTERNATIONAL SCIENCE FESTIVAL 2023
From 17th to 20th January 2024
143 India - 143 Festivals
Science and Technology
Public Outreach in Amrit Kaal

ORGANISED BY
CSIR
GOVERNMENT OF INDIA
Jigyasa
AICTE
ATIL INNOVATION MISSION
CBRI

IISF 2023 – Unleash the Science Spectacle!
Various Electrifying Events Await:

- Student Science Village
- Face-to-Face with New Frontiers of Science & Technology
- Science through Games & Toys
- Students Innovation Festival – Space Hackathon
- Vigyanika – Science Literature Festival
- State S & T Ministers and Center and States S&T Secretaries and officials Conclave
- IISF Challenge
- Education for Fighting Hello-National Science Teachers Workshop
- Young Scientists' Conference
- New Age Technology Show
- National Social Organisations and Institutions Meet (NSOIM)
- Science, Technology and Innovation Exhibition
- S&T Media and Communicators Conclave
- Start-up, Technology and Innovation B2B Meet
- Women Scientists and Entrepreneurs Conclave

Science Outreach Program
Science and Technology Public Outreach in Amrit Kaal
विज्ञान आउटरीच कार्यक्रम
अमृत काल में विज्ञान और प्रौद्योगिकी सार्वजनिक आउटरीच
दिसम्बर/December 13, 2023 रबिन्द्रनाथ टैगोर सभागार/Rabindranath Tagore Auditorium
सीएसआईआर- केन्द्रीय भवन आनुसंधान संस्थान
CSIR-Central Building Research Institute



The event was inaugurated by Shri S.K. Negi, Chief Scientist CBRI in his presidential he congratulated everyone on celebrating this festival. He further motivated students to actively participate in scientific activities and explore their curiosity in the field of science. Shri S.K. Negi highlighted the significance of fostering a scientific temperament among students and encouraged them to embrace innovation and critical thinking. He expressed his belief that events like these contribute to nurturing the next generation of scientists and researchers.



Following this Dr. R Dharmraju, Chief Scientist CBRI in a concise yet comprehensive introduction, shed light on CBRI's impactful skill development programs, underscoring the institute's commitment to nurturing scientific talent. Subsequently Dr. Chandan Swaroop Meena provided a detailed overview of the India International Science Festival 2023. He outlined the main objectives of the festival and highlighted the diverse array of activities scheduled for the IISF week, setting the stage for an exploration of science and technology in a vibrant and interactive manner.



The event unfolded in two enlightening sessions. The first session featured captivating lectures on various Ancient Indian Scientific Technologies. The second session provided students with the opportunity to visit the CBRI laboratories and interact with the scientific community of CBRI.

First lecture of the session was presented by Miss Gunjan Joshi, Project Associate Jigyasa CBRI wherein she discussed about the **“Ancient Indian Metallurgy”** she provided valuable insights to

students, sharing information about remarkable achievements such as the Iron pillar and Bronze bowl. This discussion illuminated the rich heritage of metallurgical advancements in ancient India, offering students a fascinating glimpse into the technological prowess of our ancestors.



“परिचय”



- Metallurgy (धातुकर्म) is the science and technology of extracting metals from ores and crafting them into usable objects.
- In ancient India, metallurgy played a crucial role in shaping the society.
- Iron production revolutionized farming and infrastructure.
- Had spiritual importance in religious practices.
- Metallurgy's legacy continues to influence modern metal industries in India.

The second lecture was delivered by Miss Shreya Negi Project Associate Jigyasa CBRI on “**Water Management and Sanitation Systems of the Harappan civilization**”. In her presentation, she delved into various water storage and conservation technologies employed during the Indus Valley Civilization, shedding light on the sophisticated sanitation practices of that era.



स्वच्छता और जल निकासी प्रणाली

- The cities of Indus civilization were equipped with a **well-planned network of sewerage systems** through **underground drains**.
- A central sewer and drain network interconnected every house, ensuring the **efficient disposal of various forms of waste**.
- These sewers and drains were well-covered and connected to larger outlets, which carried waste away from the urban areas. **This system was the world's first urban sanitation infrastructure.**



Last lecture was presented by Dr. P.K.S Chauhan, Senior Principal Scientist & Jigyasa Nodal CBRI, on “**India's Scientific Heritage**”. He explored various scientific concepts that were known to our ancestors, including Newton's laws, medical science, Pythagoras' theorem, and more. This informative session not only enriched students' knowledge about the advanced understanding of science in ancient times but also instilled a sense of connection with the intellectual heritage of our forebearers. All the lectures had Q&A session in which students & teachers actively participated with queries.



ग्रहों की कोणीय गति

न्यूटन से 700 वर्ष पूर्व भारत के खगोलशास्त्री श्री भास्कराचार्य ने ग्रहों की कोणीय गति के बारे में मध्याधिकारा नामक पुस्तक में पूर्ण विवरण दे दिया था।

ANGULAR VELOCITY OF PLANETS ACCORDING TO BHASKARACHARYA



इस श्लोक के अनुसार चूंकि ग्रहों की सभी कक्षाएँ 360° की होती हैं, एक छोटी कक्षा के चाप के एक मिनट में एक छोटी स्थानिक दूरी होती है जिसे अधिक तेजी से तय किया जाएगा, वेग नियत होता है, जबकि लंबी कक्षा में, चाप के एक मिनट का अर्थ है एक लंबी दूरी जो एक ही नियत वेग से अधिक समय में तय की जाएगी, जिसका अर्थ है कि यह गति में धीमा पतित होगा। इस प्रकार चंद्रमा, बुध, शुक्र, सूर्य, मंगल, बृहस्पति, शनि पृथ्वी से अधिक दूरी पर आरंभिक क्रम में स्थित होने के कारण उनकी कक्षाएं आरंभिक क्रम में लंबी होती हैं इसलिए उनकी कोणीय गति उसी क्रम में धीमी होती है। इसका विवरण मध्याधिकारा के पत्यायदा शुद्धि नामक खंड में है।

कक्षा सवो अपि दिशिपदां चक्रच्छाद्विगस्ता
बुधे सध्वयो वृत्तनि महति स्युर्मैत्ये च लिखाः ।
तस्मादेते शशिशुभ्रुजादिलोमीन्यमस्या
मन्दाहान्ता इव शशुभराज्ञानि यन्तः क्रमेण ॥ २७ ॥

11-12-2022 Dr. P.A.S Chaudhan



Following the lecture session, students had the opportunity to visit the CBRI laboratories including Rural Technology Park, Fire Laboratory and CBRI Exhibition Gallery, where they were exposed to demonstrations of various technologies developed by the institute. This interactive experience provided students with a practical understanding of scientific innovations and showcased their real-world applications. In the exhibition gallery latest technologies of CBRI were showcased. Dr. Chandan Swaroop Meena successfully coordinated the entire event. CSIR- CBRI scientist from different research areas Dr. Naval Kishore Banjara, Dr. Raj Kumar, Dr. Veena Chaudhary, Dr. Kishore Kulkarni, Dr. Humaira Athar, Dr. Rajeev Bansal, Er. Saksham Bharadwaj and Er. Abhinav Tyagi actively participated in the interactive session with the students during visit in the institute.



