Newsletter

Innovation Hub

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Issue: 2

Editorial

Genius who made our lives longer, healthier and better

The modern-day world is full of electronic gadgets, starting with mobile phones that people never forget to charge and use in every possible space, clicking photos, sharing personal moments, and watching premium movies. The gaming world has grabbed the attention of huge masses. There is a section of people, not only in India, who consider gaming taboo for so many reasons.

We use calculators for speedy and accurate calculations, digital watches to keep oneself updated, laptops and computers for personal and official work, television for entertainment, refrigerators for preserving food, air conditioners for micro-climates, micro ovens for baking food, mixers and grinders for food processing.

The first electronic gadget was the vacuum tube developed by Sir John Fleming in 1904, who is also regarded as the father of electronics.

Electronics is a branch of physics that deals with the creation and effects of electricity.

Resistors, capacitors, diodes, LEDs, transistors, transformers, relays, ICs, and connectors are some of the basic electronics components developed over the years, and there is continuous evolution in their material, efficiency, and cost-effectiveness.

Transistors (miniature semiconductors) are an example of a three-terminal electronic switch that was created in 1948 at Bell Telephone Laboratories to control current or voltage flow in any gadget. It had a profound impact on the electronics industry.

American physicist and engineer, John Bardeen's invention fetched him the Nobel Prize in 1956 along with William Shockley and Walter Brattain. He became the first person to be awarded the Nobel Prize in physics twice. His second Nobel Prize was awarded in 1972 "for their jointly developed theory of superconductivity, usually called the BCS-theory".

Contd.

The invention of the transistor paved the way for bulky vacuum tubes, which were used in televisions and radios. It is 1/50th the size of a vacuum tube, which consumes less power, is reliable, and makes electronics compact.

Some of the important landmarks in the development of present-day transistors are as follows:
Point-contact transistor, 1947 (made up of two gold foils over the germanium crystal), Type-A transistor, 1948 (modified point-contact transistor), Junction transistors, 1951 (sandwiches of N- and P-type germanium), Mesa transistors, Planar transistors, and Silicon transistors developed by Gordon Teal, 1958 (Germanium transistors often break during high temperatures).

The most modern transistor is a field-effect transistor like MOSFETS(Metal Oxide Silicon Field Effect Transistors), consisting of a voltage-controlled four terminal device that is used for switching and controlling conductivity and designed in such a way that channels of N- or P-type semiconductors run on top of the other type.

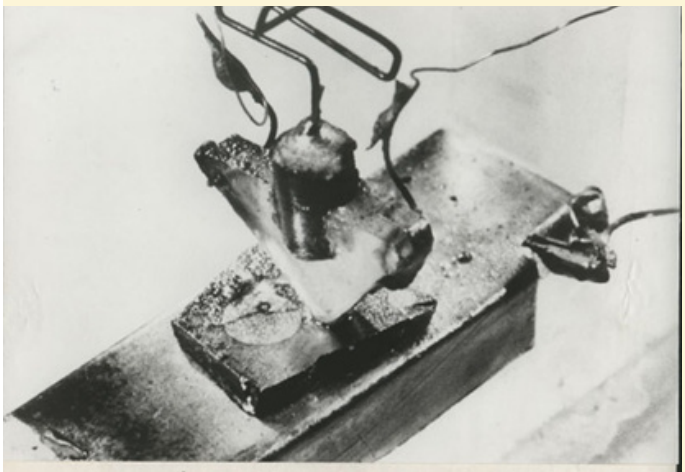
The innovative part of such transistors is that when voltage fluctuates in one of these channels, an electric field is created, which in turn acts like a faucet to turn on or off current through the rest of the transistor.

They have profound uses in automotive, industrial, and communications systems.

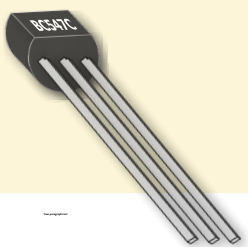
Even though MOSFETS are less efficient than junction transistors, their use in integrated circuits (ICs) and microprocessors is far easier, for which they have been greatly used.

The electronics world is fascinating, like Nobel laureate Bardeen!

The Chicago Tribune, February 3, 1991, quoted him: "Near the end of this decade, when they begin enumerating the names of the people who had the greatest impact on the 20th century, the name of John Bardeen, who died last week, has to be near, or perhaps even arguably at the top of the list... Mr. Bardeen shared two Nobel Prizes and has been awarded numerous other honours. But what greater honour can there be when each of us can look all around us and everywhere see the reminders of a man whose genius has made our lives longer, healthier, and better".



THE FIRST TRANSISTOR AS IT WAS PATENTED BY THREE NOBEL PRIZE-WINNING BELL LABORATORIES SCIENTISTS



Result's Out: Quiz Competition

22nd February 2023

A science and technology quiz competition was conducted for the joint ninth and tenth standards, in which 56 participants were present.

The following students were adjudged first, second, and third: Anurag Manna (Memari Crystal Model School, Burdwan), Prajya Biswas (Narayana School, Durgapur), and Nitisha Tamang (Rockvale Academy, Kalimpong), respectively.

The following winners will be provided with a certificate and an attractive prize in an upcoming event at Kalimpong Science Centre.

National Science Day celebration with student of Saptashree Gyanpeeth

National Science Day celebration

28th February 2023

Every year, Kalimpong Science Centre celebrates National Science Day with groups of students to mark the discovery of the Raman Effect by the Indian physicist Sir C.V. Raman.

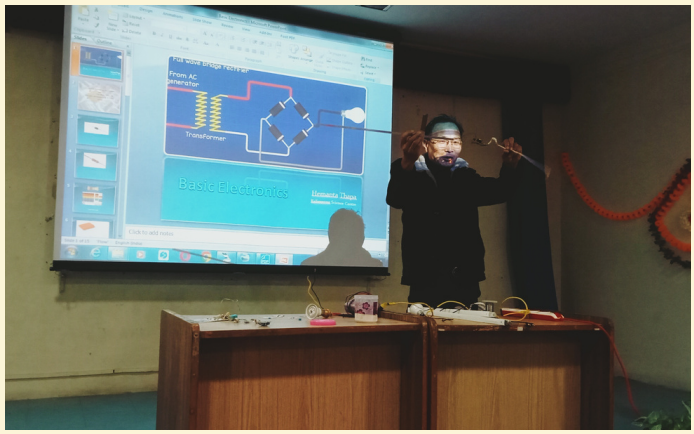
The day was fruitful in every sense. Curator and Head, Dr. B.B. Gurung, announced the launch of the Citizen Science Lab to explore and work on astronomical events such as the Asteroid Search Campaign and Galaxy Classification, to name a few. This Citizen Science Lab will be guided by mentors who've participated in and worked in such programmes themselves.

A team will be formed composed of teachers and senior students at the school level, with the rest of the members being students.

Shri Sovan Acharya, founder of the SA Citizen Science Group (an International Citizen Science Group), has played a key role in forming the Citizen Science Lab at Kalimpong Science Centre.

It was followed by a workshop on basic electronics by Hemanta Thapa and microscopic techniques by Dibhya Rai and Lekhnath Chhetri jointly.

This workshop was attended by 29 students studying in the twelfth standard at Saptashree Gyanpeeth, Kalimpong. Shri Purshottam Thakur, Assistant Teacher of Saptashree Gyanpeeth, was the chief guest of the event.



Glimpses of National Science Day

Pencil Art Competition

23rd March 2023

A pencil art competition was held for the students of third and fourth standard in which 31 entries was received across the state.

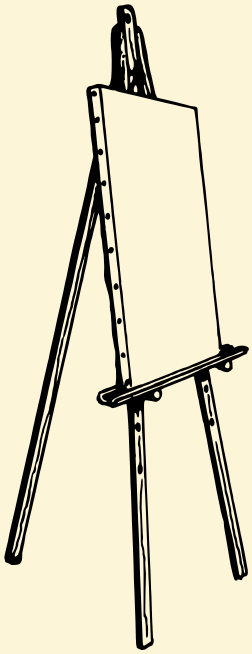
The winner was declared following set of criteria such as technique, composition, originality and impact displayed by the art.

The first, second and third were adjudged winners respectively-

Ruthvik Rai, St. Augustine's School, Kalimpong

Araddhya Roychowdhury, Memari Crystal Model School, Purba Burdwan

Payoja Banerjee, Memari Crystal Model School, Purba Burdwan



Kalimpong Science Centre will provide certificate and attractive prizes to the winners.

Electric cycle by Spandan Manna

15th April 2023

Sri. Spandan Manna, a member of Innovation Hub, Kalimpong Science Centre and a student from Dr. Graham's Homes School, Kalimpong has developed a fold-able electric cycle, equipped with lithium ion battery.

The cycle can carry up-to 100 kg, with 15 degree slope. The ideal go- to solution for covering for those short distances to work or wherever your destination is.

Science Fair at Pokhriabong, Sukhia

8th April 2023

Reachout Initiative, an organisation based in Pokhriabong, Darjeeling in association with Kalimpong Science Centre organised a science fair that was participated by various school of adjoining region. A total of 8 schools presented their science model.

A science exhibition was displayed on behalf of Kalimpong Science Centre for the students and general people.

The chief guest for the event was Sri. Bhupendra Bomzan, Executive Sabhasad, GTA, Sri S.P.Sharma, Chief P.R.O, GTA and Miss Binita Khambu Rai, MOD Mass Education & Library, GTA.

The event was judged by Sri. Hemanta Thapa, Education Assistant and Sri. Furtengi Sherpa, Mentor, Kalimpong Science Centre.

The winner of the event is as follows:

St. Milerepa Academy, Sukhia Pokhari(First)
Rangbhang Higher Secondary School, Rangbhang Busty (Second)
Bright Horizon Academy(Third).

St. Milerepa Academy

Rangbhang Higher Secondary School

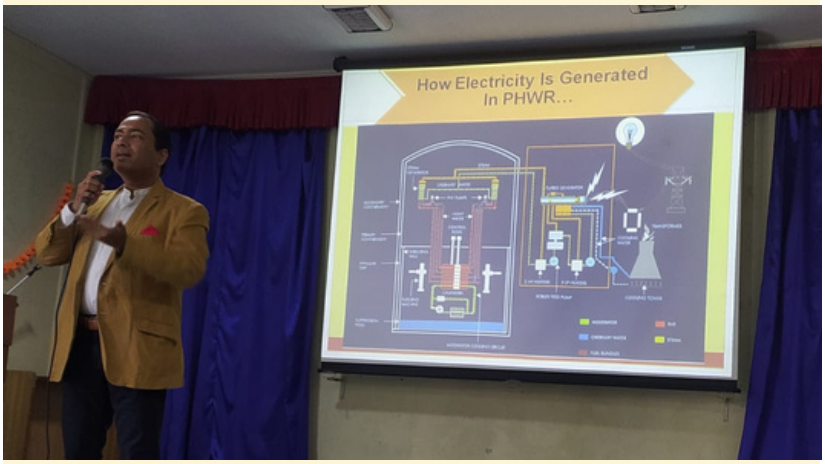
Bright Horizon Academy

The other participating school was Dhajia Higher Secondary School, Pokhriabong High School, St. Charles Public School, Orange Villa High School and Mangarjung High School.

Talk on Nuclear Energy

25th May2023

A lecture cum interactive session was organised by Kalimpong Science Centre with Sri. Amritesh Srivastava, Dy. General Manager, NPCIL, Govt. of India in the presence of student of St. Augustine's School, Kalimpong.



The speaker presented today's scenario of Nuclear Power and its efficiency in generating electricity to mitigate the power demand of India. He also added that nuclear energy is most eco-friendly power source with the motto 'safety first and production next'

Further, as proposed by Nuclear Power Corporation of India Limited that Kalimpong Science Centre will be provided with Nuclear Power Plant Gallery for public display which will be completed within a short span of time.

The purpose of the Gallery development is for public awareness regarding Nuclear Power Plant in India and its subsequent production.

The chief guest of the event was Sri. Sanjay Verma, Assistant Teacher of St. Augustine's School.

KSC Science Olympiad

Kalimpong Science Centre proudly announces that, we are conducting KSC Science Olympiad, season-1 for joint Ninth & Tenth standard residing and studying in any private or Government school located within GTA area.

The competition has 3 stages, screening, prelims and final.

Any candidate wishing to participate can fill up registration form and submit online. A link will be generated soon.

Screening at Paramount School

As far as Kalimpong is concerned, screening in physical mode is going on. The result of screening is scheduled to be announced on 30th June 2023.

A single winner will get a cash prize of Rupees 50,000 (Fifty thousand only) and free membership at Innovation Hub, a subscription based unit of Kalimpong Science Centre.

Rockvale Academy

Photo Gallery

St. Joseph's Convent visits KSC

Pranami Balika Vidya Mandir visits Innovation Hub for Summer projects

Visitors column

Excellent, especially the ones involving light and mirrors were great!

Ankitaa,
Rishi Nagar, Delhi

The Science Centre Kalimpong is very important Centre for educational purpose.

Goutam Deb,Mayor
Siliguri Municipal Corporation

Ex-Vice Chancellor, UBKV,Coochbehar
Dr. S.K. Chakrabarty and other delegates

Chief Patron

Dr. B.B. Gurung
Curator & Head

Managing Editors

Furtengi Sherpa

Hemanta Thapa

Contact us:
sciencecentre02@gmail.com
http://www.kalimpongsciencecentre.org
9064744618
8906864344