

SCIENCE CENTRE NEWS LETTER

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SCIENCE CENTRE

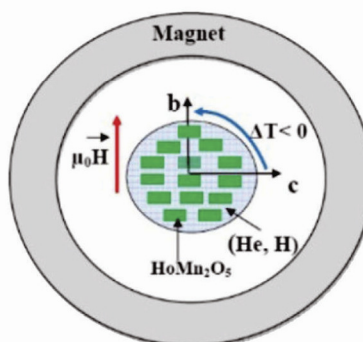
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WHAT'S NEW IN SCIENCE

Magnetic cooling enables efficient, 'green' refrigeration

One novel magnetic cooling approach, developed by a team of Canadian-Bulgarian researchers, relies on solid magnetic substances called magnetocaloric materials to act as the refrigerant in miniaturized magnetic refrigerators. As the team describes in the journal *Applied Physics Letters*, from American Institute of Physics (AIP) Publishing, these materials are the key to the development of a "green" cooling technology whose efficiency is able to scale directly with the generated magnetocaloric effect. Ferromagnetic materials, for example, are known to heat up when magnetized and to cool down when the magnetic field is removed. The researchers originally set out to measure the standard magnetocaloric effect in the multiferroic compound HoMn_2O_5 , because this material possesses an insulating behavior that prevents energy losses associated with

electric currents passing through it when altering its magnetic field. But much to their surprise, they discovered that a giant magnetocaloric effect can be obtained by simply rotating a crystal of HoMn_2O_5 within a constant magnetic field without requiring moving it in and out of



the magnetic field zone. This discovery is an important step toward the development of magnetic cooling technology, and will likely lead to efficient, "green" cooling systems for both domestic and industrial applications. Using the rotating magnetocaloric effect means that the energy absorbed by the cooling machine can be largely reduced," Researcher

said. "It also opens the door to building simplified, efficient, and compact magnetic cooling systems in the future."

Courtesy : Vidhyakunj Higher Secondary School

SCIENTIST OF THE MONTH

P.C.Mahalanobis

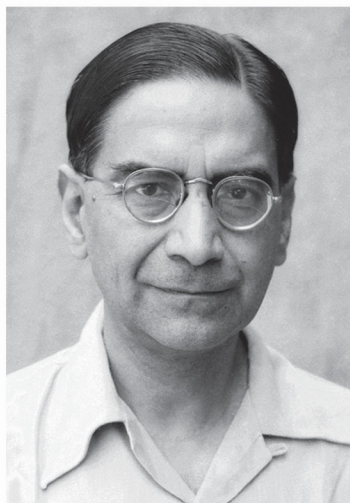
Prasanta Chandra Mahalanobis was born on June 29, 1893 at Kolkata, West Bengal. He did his Bachelors in Science from Kolkata in 1912, Tripos -I Mathematics from Cambridge University in 1914 and Tripos II Physics from Cambridge University in 1915.

Prasanta Candra Mahalanobis was an outstanding contributor to the development of statistical science in India. He founded and built the Indian Statistical Institute. The Central Statistical Organisation and National Sample Survey came into being under his supervision.

He was the founder editor of the journal 'Sankhya' of the Indian Statistical Institute. His

was a tremendous contribution in the formulation of the Second Five Year Plan. He is

the author of over 350 research articles. He is best remembered for the Mahalanobis distance, a Statistical measure. Professor Mahalanobis received the Weldon Medal, Oxford University in 1944, Sir Deviprasad Sarvadhikari Gold Medal in 1957, the Srinivasa Ramanujam Gold Medal in 1968 and the Padma Vibhushan in 1968. He died on June 28, 1972 a day before his Seventy-ninth birthday.



Courtesy : Vidhyakunj Higher Secondary School



Timings

Tuesday to Friday
9.30 am to 4.30 pm

Saturday - Sunday
& Public Holidays
11.00 am to 6.30 pm

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SCIENCE FACTS JUNE 2018

1st June	"International Children's Day"
5th June	"World Environment Day"
5th June 1783	Discovery and first launching of primary Balloon
6th June 2012	The astronomical event "Transit of Venus" happened.
7th June 1811	Mr. James Young Simpson (who invented Chloroform) was born
7th June 1979	India Launched first low orbit Earth observation Satellite - "Bhaskar" into the Space
8th June	"World Brain Tumour day"
8th June	"World Ocean day"
8th June 1936	Indian state Broadcasting Service (ISBS) was renamed as "All India Radio" (AIR) on this day
10th June	"Ballpoint Pen Day"
11th June 1963	First Lady Astronomer "Valentina " came back from journey to Space
12th June	" World Day against child labour"
12th June 1872	Railway train started in Japan
14th June	"World Blood Donor Day (WHO)"
15th June 1752	Well-known Scientist Mr. Benjamin Franklin had done experiment of kite.
17th June 2018	The third Sunday of June is celebrated as " International father's Day"
19th June	World Sickle cell Anaemia Awareness Day
21st June 2018	It is the longest day of the year in Northern Hemisphere and longest night of the year in Southern Hemisphere because Sun's rays strikes normally in Northern Hemisphere
22nd June 1973	Successful landing of the astronomer of Skylab in Pacific Ocean after revolving around the earth for 28 days
23rd June	United Nations Public Service Day (UN)
24th June 1961	Successful launching of first Indian "Super Sonic Fighter A. A"
30th June 1880	Longest total Solar Eclipse of millennium

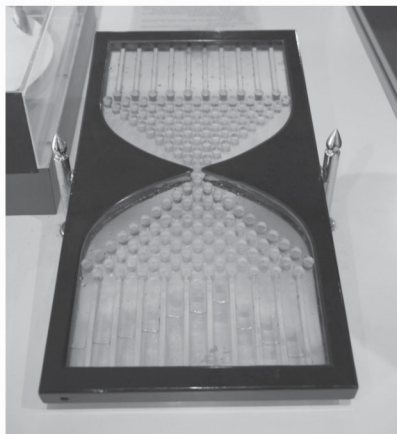
U. N. : United Nations

WHO : World Health Organization

KNOW THE EXHIBIT AT FUN SCIENCE GALLERY

Probability curve (Liquid)

Tilt the container slightly and hold for sometime. The coloured liquid from the top half slowly drains down the incline and gets collected into the lower half. Observe that the volume of liquid collecting at the centre is maximum and it gradually diminishes towards the sides giving rise to a bell-shaped profile. This experiment shows that the probability of a random variable occurring at its mean value is maximum and diminishes for values away from the mean.

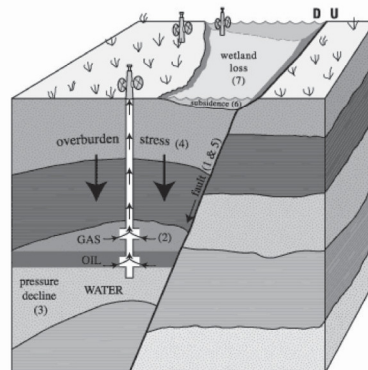


SCIENTIFIC QUESTION

How was petroleum formed?

Petroleum, also called Crude oil, is a fossil fuel like coal and natural gas. Petroleum is formed when plants and animals that lived millions of years ago, died and were covered by millions of tons of sand and mud during a period of millions of years, changed into rocks through chemical actions. These rocks had a dark liquid trapped inside them. When parts of the earth's crust moved upward and some of the liquid oozed out, we came to know of it. The Indians burnt it long before the Christian era, and the ancient Egyptians and the Chinese used it as medicine. We could collect it only

when it naturally seeped from the earth's surface. But now there are various technologies to suck out the



crude petroleum from the oil wells. Petroleum, which is drained out, is

crude in form and so it has to be refined by a distillation process. It is the most common form of separation technology used in petroleum refineries. It is the separation of a mixture into its component parts, or fractions. Chemical compounds are separated by heating them to a temperature at which one or more fractions of the mixture will vaporize. It uses distillation to fractionate. It is by this process that we obtain petrol, kerosene, lubricating oil, fuel oil and asphalt.

Courtesy :

Vidhyakunj Higher Secondary School

SCIENTIFIC QUESTION

Historical Locks Exhibition

"Historical Locks Exhibition" was inaugurated by Honorable Mayor Smt. Asmitaben Shiroya on Date 12/05/2018. Along with this exhibition an exhibition-cum sale was organized by Surat Municipal Corporation's U.S.D department. In this exhibition 701 locks were exhibited from personal collection of Shri Dharmabhai Patel. The key exhibits involve a 40 kg lock with 8 keys and lock in 0.5 inch of length part from these locks in various shapes, sizes and weight, lock in shape of undivided India, lock with dial number etc. were exhibited.



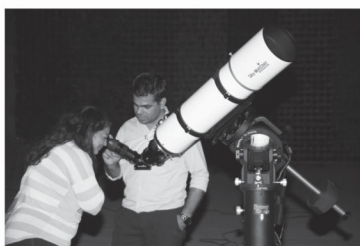
Summer Camp

Surat Municipal Corporation had organized 'Summer Camp' at first floor of Art gallery, Science Centre from 1st to 10th May 2018. In this summer camp two groups were made according to the age group. Group 'A' was for children from 7 to 12 years and Group 'B' was for 13 to 17 years. Students had learnt about Astronomy, Science and Craft. Cultural Committee Chair person visited on 10/05/2018 and give certificated to students of summer camp.



Jupiter Plant

Surat Municipal Corporation had organized night sky gazing event in which Plant Jupiter was shown with the help of telescope on 12/05/2018 & 13/05/2018 at 8:00 pm to 9:30 pm. Total 532 visitor were present in this event.



SCIENCE CENTRE

Science Centre forms the main part of the entire complex; it displays thematic galleries in the field of Science and Technology. The ground floor of Science Centre showcases 3D Theatre and Souvenir Shop. The first floor of Science Centre showcases Planetarium, Fun Science Gallery and Power of Play Gallery and second floor of Science Centre showcases Diamond Gallery, whereas Entering into Space, Textile Gallery, Cosmos Gallery and Polar Science Gallery are under development.

3d Show	Tuesday to Friday (Time)	Saturday, Sunday & Holidays (Time)
English	09:15, 11:20, 12:00, 02:40, 04:00	11:20, 12:00, 02:40, 04:00
Hindi	10:00, 10:40, 12:40, 01:20, 02:00, 03:20	12:40, 01:20, 02:00, 03:20, 04:40, 05:20, 06:00
Science Centre + Planetarium + Museum + Diamond Gallery		
Above 18 Years	Rs. 100	
3 Years to 18 Years	Rs. 65	
Science Centre + Museum + Diamond Gallery		Planetarium
Above 18 Years	Rs. 60	Tuesday to Friday
3 Years to 18 Years	Rs. 40	Saturday, Sunday & Public Holidays
Science Centre + Planetarium + Museum + Diamond Gallery + 3D Show		09:30 to 10:20 English
Above 18 Years	Rs. 120	10:30 to 11:20 Gujarati
3 Years to 18 Years	Rs. 80	11:30 to 12:20 Gujarati
Planetarium		12:30 to 01:20 English
Above 18 Years	Rs. 50	01:30 to 02:20 Hindi
3 Years to 18 Years	Rs. 40	02:30 to 03:20 Hindi
3D Show		03:30 to 04:20 Gujarati
Above 18 Years	Rs. 60	04:30 to 05:20 English
3 Years to 18 Years	Rs. 40	05:30 to 06:20 Gujarati