

# SCIENCE CENTRE NEWS LETTER

October 2016  
Issue 18



**Published by**  
M. Thennarasan  
I.A.S.  
Municipal  
Commissioner

**Editor**  
D. M. Jariwala  
Add. City Engineer  
(Civil)

**Sub Editor**  
Bhamini Mahida  
Chief Curator  
Divyesh Gameti  
Curator (Science)

**Co-ordinator**  
Dr. Pruthul Desai  
Principal  
P. T. Science College



SCIENCE CENTRE

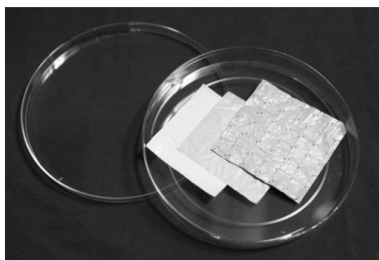
Volume 2, Issue 6

## WHAT'S NEW IN SCIENCE

### Engineers develop a plastic clothing material that cools the Skin.

Stanford University's engineers have developed a low- cost, plastic- based textile that, if woven into clothing, could cool your body far more efficiently than is possible with the natural or synthetic fabrics in clothes we wear today.

This new material works by allowing the body to discharge heat in two ways that would make the wearer feel nearly 4 degrees Fahrenheit cooler than if they wore cotton clothing. The material cools by letting perspiration evaporate through the material, something ordinary fabrics already do. But the Stanford material provides a second, revolutionary cooling mechanism: allowing heat that the body emits as infrared radiation to pass through the plastic textile. To develop their cooling textile, the Stanford researchers blended nanotechnology, photonics and chemistry to give polyethylene- the clear, clingy plastic. A number



of characteristics desirable in clothing material : It allows thermal radiation, air and water vapor to pass right through, and it is opaque to visible light.

To make this thin material more fabric-like, they created a three-ply version: two sheets of treated polyethylene separated by a cotton mesh for strength and thickness. To test the cooling potential of their three-ply construct versus a cotton fabric of comparable thickness, they placed a small swaths of each material on a surface that was as warm as bare skin and measured how much heat each material trapped. the comparison showed that the cotton fabric made the skin surface 3.6 F warmer than their cooling textile. The researchers said this difference means that a person dressed in their new material might feel less inclined to turn on a fan or air conditioner.

## SCIENTIST OF THE MONTH

### Dr. Homi Bhabha

The father of Indian atomic energy and a great scientist, Dr. Homi Bhabha was born on October 30, 1909 in Mumbai (Bombay). His full name was Homi Jehangirji Bhabha. He passed all his examinations from the Cambridge University. He took his engineering degree from this University in 1930 and Ph. D in 1934.

Professor Sir C.V. Raman invited Bhabha to join the Indian Institute of Science at Bangalore as faculty member, which he accepted in 1939. He joined as a Reader in Physics. He set up the Tata Institute of Fundamental Research (TIFR) in Mumbai in 1945. After India attained independence, the then Prime Minister Jawaharlal Nehru called a meeting of the top scientists in the country. He set up Indian Atomic Energy Commission and Bhabha was made its chairman.

In 1954, an "Atomic Research Centre" was set up at Trombay, near Mumbai. Today

this centre is known the world over as the "Bhabha Atomic Research Center" (BARC). In 1956, under Bhabha's guidance India's First atomic reactor 'Apsara' was commissioned at Trombay, near Mumbai. Thereafter, two such reactors- "Cirus" and "Zerlina" were also made functional.



In 1944, Patna University, in 1949, Lucknow University and in 1950, Banaras University Conferred on him honorary doctorate degrees. In 1951, he was elected as the Head of the Indian Science Committee. In 1954, he was awarded the Padma Vibhushan. In 1961, he was honoured with the Dr. Meghnad saha gold medal.

On January 24, 1966 when he was heading to vienna, Austria to attend meeting of International Atomic Energy Agency's Scientific advisory committee, the plane crash near Mont Blanc over the alps mountain range and he passed away.



### Timings

Tuesday to Friday  
9.30 am to 4.30 pm

Saturday - Sunday  
& Public Holidays  
11.00 am to 6.30 pm

### Address

Science Centre  
City Light Road,  
Surat - 395 007

### Contact

0261 - 2255947  
+91 97277 40807

Fax No.

91-261-2255946

E mail

sciencecentre@suratmunicipal.org

Web Site

www.suratmunicipal.gov.in



## SCIENCE FACTS OCTOBER 2016

3rd Oct	World Habitat day (1st Monday of October) (by U.N.)
3rd Oct 1803	Johan Gorrie (Inventor of a Cold Air Process of Refrigeration) was born on this day.
4th Oct 1832	William Griggs (Inventor of Photo Chromo Lithography) was born on this day.
4th Oct 1957	Soviet Union launched first artificial Earth Satellite named "Sputnik-1"
4th Oct	World Space Week (by U.N.)
5 th Oct	World Teachers Day. (by UNESCO)
5 th Oct 1864	Louis Lumiere (Inventor of first Motion Picture Camera) was born on this day.
6 th Oct 1893	Maghnad Saha (Great Indian Astrophysicist) was born on this day.
8th Oct 1917	Rodney Rabert Porter (Discoverer of exact Chemical Structure of an Antibody) was born on this day.
10th Oct 1731	Henry Cavendish (Discoverer of Hydrogen gas) was born on this day.
11th Oct	International Day of the Girl Child (by U.N.)
12th Oct 1860	Elmer Sperry (Inventor of the Gyro Scope) was born on this day.
16th Oct	World Food Day (by U.N.)
19th Oct 1783	The first manned balloon flight done by Scientist Jean Francois Pilatre de Rozier.
19th Oct 1910	Subrahmanyan Chandrasekhar (Nobel Prize winner Astrophysicist of India) was born on this day.
20th Oct 1891	James Chadwick (Discoverer of Neutron) was born on this day.
21th Oct 1833	Alfred Nobel (Inventor of Detonator for Dynamite & Nitro-Glycerine)
22th Oct 1896	Charles Glen King (Discoverer of Vitamin C) was born on this day.
22th Oct 1905	Karl Jansky (Discoverer of Cosmic Radio Wave Emission) was born on this day.
27th Oct 1811	Issac Singer (Inventor of Home Sewing Machine) was born on this day.
28th Oct 1914	Jonas Salk (Inventor of Polio Vaccine) was born on this day.
29th Oct 1656	Edmond Halley (Discoverer of Halley's Comet) was born on this day.
U.N. United Nations / WHO : World Health Organization	

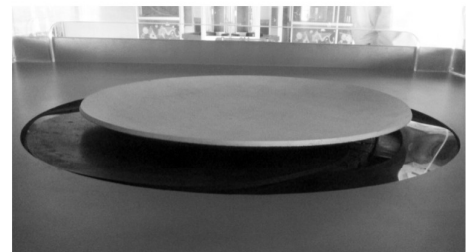
Ans : 1)-C 2)- C 3)- D 4)-A 5)-D



## KNOW THE EXHIBITS AT FUN SCIENCE GALLERY

### Levitating Disc

Press the switch and observe that the aluminum dish jumps up and remains a float. Hidden underneath is a large coil of wire through which alternating current is passed as you press the switch. This sets up a fluctuating magnetic field which in turn induces eddy currents in the conductive aluminum dish. This current sets up another magnetic field around the dish. The repulsion of the two magnetic fields makes the dish float up and stay put at a height where gravity balances the net up ward push by the magnetic field. This principle is made use of in the 'Maglev' train for faster speed.



## SCIENTIFIC QUESTION

### What is an Elements ? (Part -3)

In this part we are going to see the table of elements, element names, symbols and its discovery.

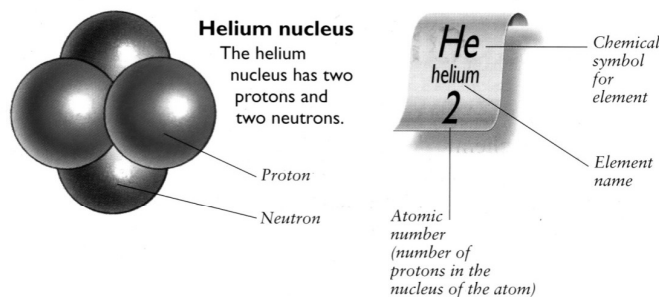
#### table of elements:

One of the basic sets of information in all of science is the list of pure chemical substances, called elements. The list can be drawn as a large chart known as the Periodic Table of chemical elements. there are 118 elements so far discovered. Of these, about 94 natural, occurring on and in planet Earth, or among the planets and stars in space. The other elements have been made, or Synthesized in Chemistry and Physics laboratories. The periodic table groups the elements according to their similarities and differences. These are physical features of an element, such as its weight and density. They are also chemical, in the way that an element reacts or

combines chemically with others.

#### Element names:

Each element has its own name, such as boron, lithium or



zinc. Some names are taken from ancient Latin, Greek, or other languages. Other elements are named after their discoverers or

generally famous scientists. Arsenic, a very poisonous element, gets its name from arsenikon, the old Greek name for the yellow mineral "Orpiment", which is rich in arsenic. The chemical symbol for each element is one or two letters, usually taken from a shortened version of the full name. The atomic number of an element is the number of the particles called Protons inside the nucleus of each atom of the element.

Discovery: the periodic table of chemical elements was proposed in 1868 by Dimitri Medeleev. He wrote down the features and properties of each element on a card, then arranging the cards in different patterns.

Key																He																					
element name																He																					
symbol																He																					
1	H	2	He													1	2																				
3	Li	4	Be													5	6	7	8	9	10																
11	Na	12	Mg													13	14	15	16	17	18																
19	K	20	Ca													21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36						
37	Rb	38	Sr	39	Y	40	Zr	41	Nb	42	Mo	43	Tc	44	Ru	45	Rh	46	Pd	47	Ag	48	Cd	49	In	50	Sn	51	Sb	52	Te	53	I	54	Xe		
55	Cs	56	Ba	57-70	Lu	71	Hf	72	Ta	73	W	74	Re	75	Os	76	Ir	77	Pt	78	Au	79	Hg	80	81	82	83	84	85	86	87	88	89	90	91	92	
87	Fr	88	Ra	89-102	Lr	103	Rf	104	Db	105	Sg	106	Bh	107	Hs	108	Mt	109	Uun	110	Uuq	111	Uub	112	113	114	115	116	117	118	119	120	121	122	123		
*lanthanoids																																					
57	La	58	Ce	59	Pr	60	Nd	61	Pm	62	Sm	63	Eu	64	Gd	65	Tb	66	Dy	67	Ho	68	Er	69	Tm	70	Yb										
**actinoids																																					
89	Ac	90	Th	91	Pa	92	U	93	Np	94	Pu	95	Am	96	Cm	97	Bk	98	Cf	99	Es	100	Fm	101	Md	102	No										



## SCIENCE QUIZ

- 1) **Light Year is related to** a) energy b) Speed c) Distance d) Intensity
- 2) **How many Dynes are there in one gram weight ?** a)- 900 b)- 375 c)- 981 d)-250
- 3) **the unit of energy in MKS system is** a)- volt b)- Erg c)- Ohm d) - Joule
- 4) **Alexander Fleming discovered** a)- Penicillin b)- X-ray c)- Streptomycin d)-Telephone
- 5) **Philology is the** a)- Study of Bones b)- Study of muscles c)- Study of architecture d)- Study of languages

## SCIENCE CENTRE

### Inauguration of Ganesh Exhibition and projects at Science Centre:-

Inauguration of Ganesh Exhibition and projects at Science Centre was done by Hon. Mayor Shrimati Asmitaben Siroya on 03/09/2016. Newly developed Power of Play Gallery, Entry Plaza and Park Exhibits and Gazebo are opened for public from 03/09/2016. The details are as under:

**Ganesh Exhibition :** An exhibition consisting of Ganesha idols in various mudra and made from different materials along with paintings and photographs was organized in the celebration of Ganesha Chaturthi. In this exhibition 225 idols of Ganesha from the collection of Architect Shri Sanjay Joshi and S.V. Patel Museum made from various materials marble, copper, bronze, stone, wood, jute, glass, conch-shell, crystal and more than 250 photographs were exhibited.

**Power of Play:** Power of play gallery is located on the first floor of the Science Centre. This gallery is prepared on the concept of "learning by playing". This gallery is designed for 3 to 12 years children. It is designed to engage young children in holistic / experiential manner.

Children will have open ended museum experience that engages all he senses, invokes imagination, enables experimentation and play and presents ideas and content with fun. Power of play gallery consists of various interactive exhibits, like 'Hello Hello!', 'Toy Train', 'Bumpy track', etc., which gives knowledge by playing. Kids can play with them and learn about human body, different geometrical shapes, vegetables and fruits, etc. This is the best place for children to stimulate creativity and inspire them for active learning.

**Entry Plaza Exhibits:** The entry plaza exhibits are located on the ground floor of Science Centre, between Ticket window and Souvenir Shop. It consists of seating arrangement of different geometrical shapes like Saddle, Cycloid, Epicycloids, Involutives, Geodesics, etc. Visitors can sit on these shapes and also learn about the characteristics of these Geometrical shapes. There is an intellectual puzzle game called Tengram, which helps visitors to understand geometrical shapes.

**Park Exhibits :** The Park Exhibits are located between Museum and Art Gallery. There are 9 sturdy park

exhibits consisting of Pipes of Pan, Turn faster, Bird in a cage, Pin Hole camera, Lift yourself, Elliptical speaking tube, Action and Reaction, Tug of war and Gravity chair. These exhibits are based on the different principles of Science.

**Gazebo :** Surat Municipal Corporation has built up a 'Gazebo' with capacity of 50 to 100 students in its empty plot located near the Science Centre and behind Maheshwari Bhavan. This Gazebo can be used by the visiting school/college/academic Institution to the Science Centre by paying applicable deposit in advance to serve the ready food to its students. Moreover, the Gazebo can also be used by the Organization/Individual, who have booked Science Centre's Art Gallery / Auditorium/Amphitheatre, during their booked session for maximum of four hours (and in its multiplication) by paying applicable deposit in advance. Only vegetarian food can be served and activities or items banned by the Government cannot be performed in the Gazebo. This gazebo includes facilities of drinking water, bus/car parking, wash-rooms and a adequate road for transportation.

