

BASIC SCIENCES & HUMANITIES

NEWSLETTER

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- *NOTHING EVER BECOMES REAL TILL IT IS EXPERIENCED – JOHN KEATS*
- *YOUNG MEN SHOULD PROVE THEOREMS OLD MEN SHOULD WRITE BOOKS – G.H.HARDY*
- *MY POWERS ARE ORDINARY. ONLY MY APPLICATION BRINGS ME SUCCESS – ISAAC NEWTON*
- *GENIUS IS NOT INSPIRED. INSPIRATION IS PERSPIRATION. – THOMAS EDISON*
- *NATURE IS A MIRACLE WE DEPEND UPON.*

The department organized inaugural and orientation programme for the new entries into the academic year-2018-19. The elite heads of management hosted the event and assured the students as well as the parents of the bright careers at the campus. They expressed their gratitude to the parents for trusting in the efforts of the management and admitting their wards in a very considerable number.

EDUCATION DOES NOT MEAN GOOD JUDGEMENT.

There is a story about a man who sold hot dogs by the roadside, so he never listened to the radio. His eyes were weak, so he never watched television. But enthusiastically, he sold lots of hot dogs. His sales and profit went up. He ordered more meat and got himself a bigger and a better stove. As his business was growing, the son, who had recently graduated from college, joined his father.

Then something strange happened. The son asked, "Dad, aren't you aware of the great recession coming our way?" The father replied, "No, but tell me about it." The son said, "The international situation is terrible. The domestic is even worse. We should be prepared for the coming bad time." The man thought that since his son had been to the college, read the papers and listened to radio, he ought to know and his advice should not to be taken lightly. So the next day, the father cut down his order for the meat and buns, took down the sign and was no longer enthusiastic. Very soon, fewer and fewer people bothered to stop at his hot dog stand. And his sales started coming down rapidly. The father said to his son, "Son, you were right. We are in the middle of recession. I am glad you warned me ahead of time."

The tragedy is that there are many walking encyclopedias who are living creature. I was come across a book: "How to become a millionaire in a month" and the book is sold at \$2, Three hundred and fifty naira equivalent.

SRINIVASA RAMANUJAN

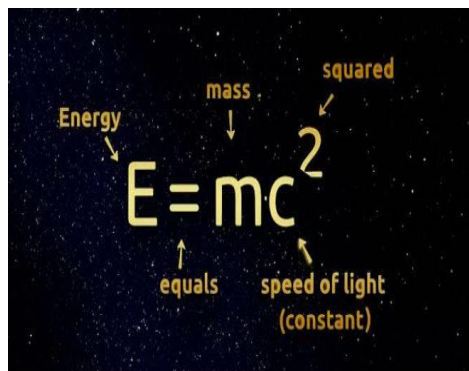
Srinivasa Ramanujan (1887-1920) introduced to the mathematical world. Born in South India, Ramanujan was a promising student, winning academic prizes in high school. But at age 16 his life took a decisive turn after he obtained a book titled A Synopsis of Elementary Results in Pure and Applied Mathematics.

Ramanujan's arrival at Cambridge was the beginning of a very successful five-year collaboration with Hardy. In some ways the two made an odd pair: Hardy was a great exponent of rigor in analysis, while Ramanujan's results were (as Hardy put it) "arrived at by a process of mingled argument, intuition, and induction, of which he was entirely unable to give any coherent account". Hardy did his best to fill in the gaps in Ramanujan's education without discouraging him. He was amazed by Ramanujan's uncanny formal intuition in manipulating infinite series, continued fractions, and the like: "I have never met his equal, and can compare him only with [Euler](#) or [Jacobi](#)."

One remarkable result of the Hardy-Ramanujan collaboration was a formula for the number $p(n)$ of partitions of a number n . A partition of a positive integer n is just an expression for n as a sum of positive integers, regardless of order. Thus $p(4) = 5$ because 4 can be written as $1+1+1+1$, $1+1+2$, $2+2$, $1+3$, or 4 . The problem of finding $p(n)$ was studied by [Euler](#), who found a formula for the generating function of $p(n)$ (that is, for the infinite series whose n th term is $p(n)x^n$). While this allows one to calculate $p(n)$ recursively, it doesn't lead to an explicit formula.

Hardy and Ramanujan came up with such a formula (though they only proved it works asymptotically; Rademacher proved it gives the exact value of $p(n)$).

EINSTEIN'S THEORY OF SPECIAL RELATIVITY



Einstein's equation $E = mc^2$ shows that energy and mass are interchangeable

The theory of special relativity explains how space and time are linked for objects that are moving at a consistent speed in a straight line. One of its most famous aspects concerns objects moving at the speed of light.

Simply put, as an object approaches the speed of light, its mass becomes infinite and it is unable to go any faster than light travels. This cosmic speed limit has been a subject of much discussion in physics, and even in science fiction, as people think about how to travel across vast distances.

The theory of special relativity was developed by Albert Einstein in 1905, and it forms part of the basis of modern physics. After finishing his work in special relativity, Einstein spent a decade pondering what would happen if one introduced acceleration. This formed the basis of his general relativity, published in 1915.

CHEMISTRY IN EVERYDAY LIFE

Have you ever wondered why chemistry is so important? Why do we study chemistry? What is the role of chemistry in life?

We all are made of chemicals and everything around us is made of chemicals. Everything we hear, see, smell, taste, and touch involve chemistry and chemicals (matter). Hearing, seeing, tasting, and touching all involve intricate series of chemical reactions and interactions in our body. Many of the changes we observe in the world around are caused by chemical reactions. Chemistry is not limited to beakers and laboratories. It is all around us, and the better we know chemistry, the better we know our world. Chemistry is present in every aspect of life, and a few chemistry in daily life examples are-

Sky is Blue

An object is colored because of the light that it reflects. The white light from the sun contains all the wavelengths, but when it impacts on an object some of its wavelengths are absorbed and some reflected. The blue color of the sky can be explained considering phenomena named Rayleigh scattering that consists of the scattering of light by particles much smaller than its wavelength. This effect is especially strong when light passes through gases.

Ice Float on Water

Ice is less dense than liquid water. The heavier water displaces the lighter ice, so ice floats on top.

How Sunscreen Works?

Sunscreen combines organic and inorganic chemicals to filter the light from the sun so that less of it reaches the deeper layers of your skin. The reflective particles in sunscreen usually consist of zinc oxide or titanium oxide.

Meals are cooked faster in a Pressure Cooker

A pressure cooker has a more elaborated lid that seals the pot completely. When we heat water it boils and the steam cannot escape, so it remains inside and starts to build up the pressure. Under pressure, cooking temperatures raise much higher than under normal conditions, hence the food is cooked much faster. This signifies the role of chemistry in our daily life.

Coffee keeps us awake

Coffee keeps us awake because of the presence of a chemical called adenosine, in your brain. It binds to certain receptors and slows the nerve cell activity when sleep is signaled.

Vegetable is colored

Many vegetables and fruits are strongly colored because they contain a special kind of chemical compound named **carotenoids**. These compounds have an area called chromophore, which absorbs and gives off particular wavelengths of light, generating the color that we then perceive. This is where the importance of chemistry can be revealed.

How Soap Cleans?

Soap is formed by molecules with a 'head' which likes water (hydrophilic) and a long chain that hates it (hydrophobic). Then when soap is added to the water, the long hydrophobic chains of its molecules join the oil particles, while the hydrophilic heads go into the water. An emulsion of oil in water is then formed, this means that the oil particles become suspended in the water and are liberated from the cloth. With the rinsing, the emulsion is taken away. This enlightens everyday chemistry.

We cry while cutting onions

Onions make you cry due to the presence of sulfur in the cells which break after the onions are cut. This sulfur gets mixed with moisture and thus irritates your eyes.

WHICH CAME FIRST: THE DINOSAUR OR THE BIRD?

Audubon magazine, January-February issue. **Michael Balter** explains the convergence of ornithology and paleontology in a radical rethinking of avian evolution, which sees birds as "living dinosaurs, the one surviving lineage of extinct carnivorous beasts like Tyrannosaurus rex."

In 1996, a farmer and amateur fossil collector from China's northeastern Liaoning Province found a one-meter-long dinosaur embedded in two separate limestone slabs, which he sold to two different Chinese museums. Paleontologists quickly put two and two together and realized that the specimen, which they named *Sinosauropteryx* and dated to about 125 million years ago, was the first discovery of a feathered dinosaur.

Although a small number of skeptical researchers have since argued that the claimed feathers are really degraded collagen fibers, further discoveries of similarly plumed dinos

bolstered the case. Some of them — such as the four-winged Microraptor, first reported from China in 2000 — probably could fly.

To date more than 20 suspected flying dinosaur species have been reported, and there is now an overwhelming consensus that birds represent a lineage of flying dinosaurs that survived the mass dinosaur extinction at the end of the Mesozoic Era, about 66 million years ago. A flood of new genetic research released at presstime confirmed that birds subsequently saw an early, rapid, evolutionary “big bang” that led to the more than 10,000 species we have today.

FACULTY PARTICIPATION

- Mr. Ch. Srinivasa Rao, Mr. G. Prasanna Kumar, Mr. E.V.Kondal Rao, Mr. M.V. Ramanjaneyulu and Mrs. K. Bhagya Lakshmi attended a five day FDP on “Applications and Mathematical Methods for Engineering Studies” held at Vignan Bharathi Institute of Technology from 2nd to 6th July, 2018.
- Dr A.Raghavendra Rao, Mr. Y. Mohan Rao, Mr. M. Raghavendar, Dr TASS Santhi Sree, Mrs. J. Rama Kumari and Mrs. MSN Swathi attended a Three day FDP on “Contemporary Physics for Engineers and Technologists held at Gokaraju Rangaraju Institute of Engineering and Technology from 4th to 6th July, 2018.
- Mr. Y. Ramu attended a workshop on “Conceptualizing: Teaching and Researching in ELT” held at Vignan’s University on 22nd July, 2018.
- Ms. G. Pavani presented a paper at U.G.C. International Conference on “Dynamics of Feminist Writers: Global Perspectives” held St. Joseph’s College for Women” on 14th and 15th July, 2018.
- Ms. G. Pavani published a paper in “Review of Research”, Aug., 2018.
- Mrs. K. Bhagya Lakshmi attended an International Conference on “Mobile Cloud Computing Communication and Engineering” held at NEC, on 22nd and 23rd June, 2018.