MECHAZINE

DEPARTMENT OF MECHANICAL ENGINEERING

2015-16

GALGOTIAS COLLEGE OF ENGINEERING & TECHNOLOGY

Mechazine

HoD's Message:

I am delighted to present the annual magazine of Mechanical Engineering Department. It is such a nice platform for the students to explore their talents. I strongly believe that it would be an excellent medium to learn and unlearn about the potential of mechanical engineeing. I hope that the magazine would manifest the talent of the students.

I congratulate and appreciate all the contributors and the editorial board for the successful publication of this magazine.

I extend my best wishes for the success of this magazine.

Prof. V. K. Dwivedi
(HoD-ME)

Editor's Message:

I feel ecstatic to be a part of the magazine of Mechanical Engineering Department of Galgotias College of Engineering and Technology (G.C.E.T.).

Mechanical Engineering – the foundation of engineers and an engineer is the epitome of creativity. This magazine focuses on enhancing and exposing the flair of students in terms of critical thinking and analysing things technically. This magazine is also a platform for students to share their knowledge. This will create create a bright future for the students. I wish the team of editors for their venture.

Dr. Mohd. Asim Qadri

I am extremely delighted to introduce you to the annual magazine of Mechanical Engineering Department of Galgotias College of Engineering and Technology (G.C.E.T.). Our endeavor is to collect academic information and share with academicians via this magazine. The magazine showcases the technical knowledge, innovative ideas and analytic skills of students.

I am sure that the college magazine will provide a platform to the students to sharpen their writing talent and will strengthen the academic activities of the college.

As the editor of this magazine, I would like to appreciate the hard work of all the authors who have contributed for this issue. Special thanks to the team of editors who endured their efforts to this magazine.

Lastly, I wish success to the team of editors for the magazine.

Dr. M. K. Lohumi

माँ

पाषाण से मजबूत, समंदर सा शांत
और बर्फ से भी शीतल,
ऐसा है मेरी माँ का आंचल।
इस ताकत को मैंने देखा उसकी आँखों मे
हाँ, मैने देखा,एक आंसू मेरी माँ की आखों में।
हर तकलीफ में हो जाती उसकी आँखे नम
छलक आते उसकी आँखो से मोती,
चाहे होती खुशी या फिर रहता गम।
इस एहसास को मैंने देखा उसकी आँखो में
हाँ, मैंने देखा,एक आंसू मेरी माँ की आँखो मे।
जब होता कोई गम या होती कोई पीड़ा
वो छोड के अपने दर्द को,
फैला देती खुशियों का डेरा।
इस दुलार को मैंने देखा उसकी आँखो में
हाँ, मैंने देखा,एक आंसू मेरी माँ की आँखो में।
हर पल तहता उसको मेरे आने का इंतजार
आके उसकी ओट में,
तकलीफो का हो जाता आना दुशवार।
इस हिफाजत को मैंने देखा उसकी आँखो में
हाँ, मैंने देखा,एक आंसू मेरी माँ की आँखो में।

अभिषेक....

WHAT I WISH

Oh God! I don't wish for jewels from the ocean.

I wish to collect the pearls of principles that would add value to the treasure of my character.

Oh God! I don't wish for money.

From the meadows, I wish to collect the flowers of manners that would add value to the fragrance of my prosperity.

Oh God! I don't wish for position.

From the sy I wish to collect the wings of dilligency that would add value to the glide of my success.

Oh God! I don't wish for luxury.

From the eternal universe, I wish to collect the stars of patience that would add value to the radiance of my comfort.

Oh God! I don't wish for things which make me a machine.

I wish for things which make me a human.

Siddhika Tripathi (ME 3rd Year)

The early Earth wasn't green, but it did recycle itself

The Earth is about 4.5 billion years old, give or take a few million years. But most of what we see today on our planet's surface is much younger only a few billion years old, if that.

So how do we know what happened between the time the Earth was formed, and when our modern rock record starts? We can look into each rock's family history.

Researchers have figured out a way to peer back in time by looking at some of the oldest rocks in North America.

Jonathan O'Neil examined rocks from a craton—the oldest part of a continent, an area that has stuck around for a few billions of years as the edges of the continent built up around it—in Canada.

"Most of these rocks are 2.7 billion years old, more or less, which is an age that we find in many of these cartons, or cores of continents. But it had the flavor of older stuff in it," O'Neil says.

That 'flavor' was an isotope called neodymium-142, and its presence in the 2.7 billion year old rocks told a fascinating story.

"Neodymium-142 is very useful to peer through the oldest history of the earth, because it only formed during the first 500 million years of Earth's history," says O'Neil who has studied the area for years.

By analyzing the tracer, he found that the 2.7 billion year old rocks at the center of the continent came from 4.3 billion year old rocks on the early ocean floor. It's quite a pedigree. But the find also adds to a question that is currently puzzling geologists: what on Earth was happening in those 1.4 billion years?

Geologists are still trying to understand what the Earth's geology was like in those early days. Today, plate tectonics shape our planet—continents and oceans slowly cruise around on the globe's semi-molten mantle, crunching into each other like bumper cars—but that might not be what the early Earth was like at all.

"The Earth is very very good at recycling its own crust and destroying what it created," O'Neil says. Today, the oldest oceanic crusts can survive for about 200 million years from their birth at a mid-ocean ridge, to their death as they are shoved back underneath a continent. But the oceanic rocks in the new study were able to survive for over 1 billion years, which means something else was going on back then.

"How was it different? How could that big piece of crust have survived for one billion years?" O'Neil says.

It's not just Canada's rocks that are posing interesting problems for geologists. A study published earlier this month focused on rocks from a craton in Australia. It also found that it was unlikely that the Earth's first continental crust emerged by the same processes we see today, and suggested that Earth might have had a single, less fractured outer layer at some point in the past.

O'Neil, for his part, plans to continue looking for traces of the Earth that came before the planet we know and love today. Methods for detecting the tracers he's looking for have only become available in the past 12 years, which means that there are plenty of other rocks in Canada and elsewhere that are waiting to be analyzed.

Mayank Gupta (ME 2nd Year)

WHY ENGLISH IS SO HARD

We'll begin with a box,and the plural is boxes,

But the plural of ox becomes oxen,not oxes,

One fowl is a goose,but two are called geese,

Yet the plural of moose should never be meese,

You may find a lone mouse or a nest full of mice,

Yet the plural of house is houses,not hice,

If the plural of man is always called men,

Why shouldn't the plural of pan be called pen?

If I speak of my foot and show you my feet,

And I give you a boot,would a pair be called beet?

If one is a tooth and a whole set are teeth,

Why shouldn't the plural of booth be called beeth?

Then one may be that,and three would be those,

Yet hat in the plural would never be hose,

And the plural of cat is cats,not cose,

We speak of a brother and also of brethren,

But though we say mother,we never say methren,

Then the masculine pronouns are he,his and him,

But imagine the feminine: she,shis and shim!

Shristi Singh (ME 3rd Year)

Mysterious Places Around The World That Are Hard To Explain... Even For Scientist

Earth never stops surprising us. Every corner of the planet offers some sort of natural peculiarity with an explanation that makes us wish we'd studied harder in junior high Earth science class.

Some of these sites are challenging to get to; others are busy tourist destinations. They keep natural scientists searching for answers and the rest of us astounded by the secrets and mysteries the world continues to reveal.

Blood Falls, Antarctica

Most people won't see Blood Falls in person, but even in photographs, the sight is arresting: a blood-red waterfall staining the snow-white face of Taylor Glacier. Glaciologists and microbiologists have sought to determine what causes the mysterious red flow. They've concluded that the source is a subterranean lake rich in the iron that gives the water its red hue. Stranger still, recent research has revealed microorganisms living 1,300 feet beneath the ice, sustained by the iron and sulfur in the water.

Magnetic Hill, Moncton, New Brunswick

What could possibly cause an automobile to roll backward uphill without power? A magnetic force from within the Earth? Something even more fantastic? Since the 1930s, when the phenomenon of Magnetic Hill was discovered (and almost immediately promoted as a tourist attraction), people have been trying to figure out its riddle.

Surtsey, Iceland

When people try to convince you there's nothing new under the sun, direct them to the Icelandic island of Surtsey. Before 1963, it didn't exist. Then, an underwater volcano in the Westman Islands (Vestmannaeyjar) erupted, and when the activity settled down in 1967, what remained was an island where no island had been before.

Moeraki Boulders, New Zealand

Large spherical boulders, some measuring 12 feet in circumference — are scattered on Koekohe Beach on the east coast of New Zealand's South Island. They formed millions of years ago on the ancient sea floor, collecting and hardening sediment and minerals around a core such as a fossil or a shell similar to the way oysters form pearls.

They're not the world's only examples of what geologists call septarian concretions. You can also visit the Koutu Boulders near Hokianga Harbour on the northwestern coast of New Zealand's North Island, for example. Yet the Moeraki Boulders are some of the world's largest. The particulars of their origin and what caused the distinctive cracks inside them are still being studied.

Longyearbyen, Norway

From April 20 to August 23, the sun never sets over Svalbard, a Norwegian archipelago that lies north of Greenland in the Arctic Sea. The phenomenon plays havoc with everyone's body clocks. Is it noon? Is it midnight? After a day or two, it's hard to tell.

Pamukkale, Turkey

What appears to be a Doctor Zhivago-style snowy landscape in southwestern Turkey is actually the result of calcium carbonate deposits from 17 natural hot springs accumulating over thousands of years. Beginning in the late second century B.C., this area near present-day Denizli was a destination for those who sought the therapeutic benefits of the mineral-rich water whose temperature reaches upward of 100 degrees Fahrenheit.

Today, you can see remnants of the baths at the ancient holy city of Hierapolis, but it's the stunning terraces, cliffs and petrified white waterfalls of Pamukkale, Turkish for "Cotton Palace" that give it remarkable natural beauty.

Racetrack Playa, Death Valley, California

How ordinary stones manage to "sail" over the surface of Racetrack Playa in Death Valley National Park is a mystery people have tried to solve since 1915, when a prospector and his wife noticed tracks that seemed to indicate that the stones had somehow traveled across the dry earth. Short of cosmic intervention, the stones required terrestrial forces to move them.

But what forces? The current prevailing theory about the "sailing stones" of Racetrack Playa, presented by a team of physicists in 2011, involves ice that forms around the stones, causing them to move and to leave a trail in their wake. Many visitors still hope for a more mystical explanation.

Yellowstone National Park

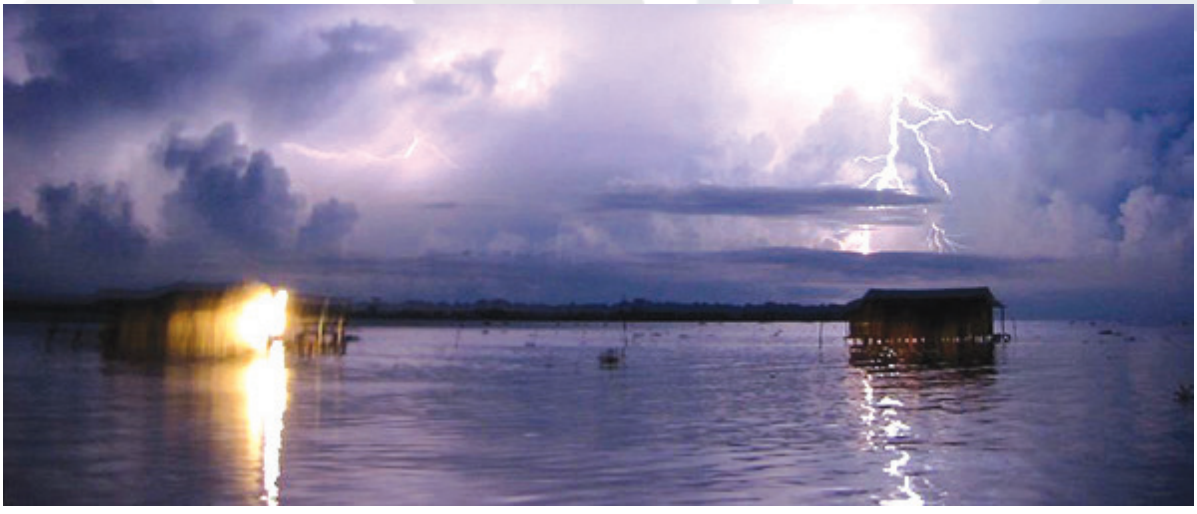
Yellowstone National Park claims the highest concentration of geysers of any place on Earth. Geysers are hot springs with plumbing challenges that result in eruptions. More than 300 can be found throughout the park, and none is more famous than Old Faithful. In fact, Old Faithful is the reason Yellowstone was designated a National Park — the first in the United States — in 1872.

Its name comes from the perceived regularity of its eruptions, which occur every 55 to 120 minutes and last for two to five minutes.The fact that the eruptions aren't quite as regular as they might seem — and that the mean eruption interval seems to be lengthening — keeps geologists fascinated, too.

Relampago del Catatumbo, Ologa, Venezuela

Thanks to its humidity, its elevation and the clash of winds from the mountains and the sea, the southwestern corner of Lake Maracaibo in Venezuela has the world's highest frequency of lightning activity (250 flashes per square kilometer per year).

More than 200 nights per year, with peaks in May and October, lightning flashes fill the sky — sometimes 25 or more flashes per minute. To put that in perspective: The National Weather Service classifies anything over 12 strikes per minute as "excessive." Named for the Catatumbo River, which flows from Colombia in to Lake Maracaibo, the Relampago de Catatumbo, or Catatumbo Lighting, has become a highlight for travelers who spend their nights wide awake and wide-eyed watching the spectacle.



The Lonely Tower, Jordian

A single apartment sits at the top of an ancient tower in the middle of the Jordanian desert. The tower at Um er-Rasas stands 46-feet-tall with no door, no stairs, and no way to ever leave. The square base of the tower, one mile north of the Byzantine city of Kastron Mefa'a is completely solid and constructed so well it still stands after 1,000 years of desert wind and sun. The church and courtyard at its base have crumbled into dust.

Now home to only birds, the tower may be the only standing structure left from the Stylite movement. These ascetic, Christian monks, were so dedicated to self-discipline and depriving themselves of comfort they lived in isolation high above the rest of the world. The Jordanian tower likely housed one of these Stylite monks in the fifth-century.

The Stylites followed the footsteps of St. Simeon Stylite the Elder. Known for his unceasing prayer, Simeon became so popular to pilgrims he had no time for his own devotions. To guarantee he had quiet, Simeon climbed aboard a platform on the top of a tower in the town of Aleppo in modern-day Syria. Although he allowed visitors to climb a ladder to seek his counsel in the afternoons, he never left. Simeon ascnded to his platform in 423 A.D. and remained until his death 37 years later.