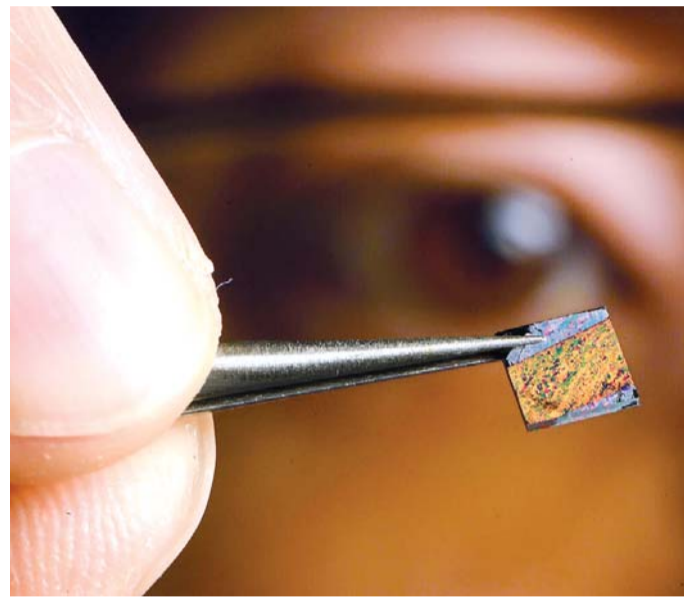


## #RESEARCH

### Heart Attack Test in minutes

Heart attacks require immediate medical intervention in order to improve patient outcomes, but while early diagnosis is critical, it can also be very challenging.



A new blood test diagnoses heart attacks in minutes rather than hours and could be adapted as a tool for first responders and people at home.

"Heart attacks require immediate medical intervention in order to improve patient outcomes, but while early diagnosis is critical, it can also be very challenging, and near impossible outside of a clinical setting," says lead author, Peng Zheng, an assistant Research Scientist at Johns Hopkins University.

"In the future, we hope this could be made into a hand-held instrument like a Star Trek tricorder."



researchers say. Though created for speedy diagnostic work in a clinical setting, the test could be adapted as a hand-held tool that first responders could use in the field, or that people might even be able to use themselves at home.

"We're talking about speed, we're talking about accuracy, and we're talking of the ability to perform measurements outside of a hospital," says Barman, a Bioengineer in the Mechanical Engineering department.

"In the future, we hope this could be made into a hand-held instrument like a Star Trek tricorder, where you have a drop of blood and then, voila, in a few seconds you have detection."

The heart of the invention is a tiny chip with a ground-breaking nanostructured surface on which blood is tested. The chip's 'metasurface' enhances electric and magnetic signals during Raman spectroscopy analysis, making heart attack biomarkers visible in seconds, even in ultra-low concentrations. The tool is sensitive enough to flag heart attack biomarkers that might not be detected at all with current tests, or not detected until much later in an attack.

Though designed to diagnose heart attacks, the tool could be adapted to detect cancer and infectious diseases, the researchers say. "There is enormous commercial potential," Barman says. "There's nothing that limits this platform technology."

Though an estimated 800,000-plus people have heart attacks every year just in the United States, heart attacks remain one of the trickiest conditions to diagnose, with symptoms that vary widely and biological signals that can be subtle and easy to miss in the early stages of an attack, when medical intervention can do the most good.

People, suspected of having heart attacks, typically are given a combination of tests to confirm the diagnosis, usually starting with electrocardiograms to measure the electrical activity of the heart, a procedure that takes about five minutes, and blood tests to detect the hallmarks of a heart attack, where lab work can take at least an hour and often has to be repeated.

The stand-alone blood test, that the team created, provides results in five to seven minutes. It's also more accurate and more affordable than current methods, the

# Siachen, Meghdoot, Trishul and Lord Shiva



Balbir had painted the *Naamam* of Lord Shiva on each of the aircraft, three horizontal lines, which he assured us would deter the Pakistani generals more than the weapons the Hunter could carry. When the weather cleared, a few missions would orbit high over the Himalayas, with the aim of 'painting' on both the Pakistani and Chinese radar systems, so as to let them know that 'we are there.' It was during these high altitude orbits that some pilots claimed to have seen the image of *Lord Shiva with his Trishul*, cast over the peaks. Balbir assured us that if we applied the *Shiva Naamam* on our foreheads before getting airborne, we would even be able to see Mount Kailash.



Wg. Cdr. CSV Ramany, VM (G)  
The author is a retired IAF fighter pilot

This is a tale of the Siachen Glacier Operation Meghdoot and Lord Shiva, and how they blended into the Hunter Strike Squadron. The Siachen Glacier has been a bone of contention since the Karachi agreement of 1949 gave a vague demarcation of territories and unspecified authority over them. Indian interpretation was that Pakistani territory, extended till Saltoro Ridge based on the Simla Agreement, where the territorial lines route after the last demarcated point NJ 9842, was "thenceforth north to the glaciers." Pakistan's interpretation was that their territory continued north-east from point NJ 9842 to the Karakoram Pass. As a result, both nations claimed the Siachen Glacier.

The Siachen Glacier demarcates Central Asia from the Indian Subcontinent and separates Pakistan from China in that region. This Glacier is also the single largest source of freshwater on the Indian Subcontinent. The Glacier is the source for the Nubra river that eventually feeds into the mighty Indus, that irri-

gates the Punjab plains in Pakistan. In 1983, Pakistani generals decided to stake their claim through troop deployments in the Siachen Glacier. Islamabad ordered Arctic-weather gear from a London supplier, unaware that the same supplier also provided outfits to the Indian Army. The Indians were informed about this and initiated their own plan, Operation Meghdoot. Pre-empting the Pakistan Army by four days, by 13 April, 1984, a battalion of the Kumaon Regiment and the Ladakh Scouts marched through ice-bound Zoji-La pass, and controlled all three major mountain passes of Sia La, Bilafond La and Gyong La. To further deter the Pakistanis, it was decided to base a fighter unit at Leh Airfield, and the Hunter Strike Squadron was tasked with this. At that time, Leh Airfield was on a very undulating surface, transport aircraft with fat low pressure tyres could just about be able to operate. For any fighter aircraft, with slim high pressure tyres, it seemed difficult. The approach to land was also for a single runway, due to maintain obstacles on the other side. Two types of approaches were possible. One was a direct approach from Khalsi, and the other was a standard circuit. The circuit was behind the mountain range and the approach was along the slope of the mountain. The airfield could not be seen on downwind and base leg, and was visible only when rolling out on final.

The approach, all along, was just about 100 feet above the slope,



Leh Airfield.

## #BAM BHOLE



and there was a big hump just up after the Indus river, which would give rise to turbulence, erratic winds, speed fluctuations and a mild sink. There was also a big hump in line with the runway, short of the dumb bell, which gave the feeling that the main wheels would touch it. Thankfully quite a few of the issues of Leh Airport have been ironed out, and now it is open to civilian aircraft as well. Now known as Kushok Bakula Rimpochee Airport, it is at an altitude of 10,822 feet above mean sea level, and is one of the highest in the world. The airport is named after the 19th Kushok Bakula Rimpochee, a Buddhist monk, whose *Spiritual Gampa* is in the vicinity of the airfield. Back to April 1984. A detachment of four Hunter aircraft made an uneventful, though very bumpy and turbulent arrival at Leh. Accompanying us were our technical support staff and equipment, the possible armament we may have to use and our tea club major, Domo Balbir. For the first three days after our landing, that entire Himalayan sub-sector was hit by snow storms, so, our Hunters were grounded. During the time, we were told the importance of our mission by the Army Corps Commander, Lieutenant General Prem Nath Hoon. General Hoon was given clear directives by Prime Minister, Indira Gandhi, to

be purely defensive on the Glacier, but nothing could stop him from launching a few surprise pincer attacks and hope that Mrs. Gandhi would not hear of it. Briefing us on the importance and sanctity of our mission was our tea club major Domo Balbir, who would twist his Rajasthanian moustaches and explain to us the real reason for our being there. Weather was bad, there was no flying possible, so, we lived on *chai* all day and *rum paani* in the evening, both of which was provided by Balbir, so, we had no option but to listen to him.

Balbir felt that we and the Hunter Aircraft were reincarnations of *Lord Shiva's Trishul*, who have emerged in Leh Airfield in the Himalayas, to vanquish the enemy. The *Himalayas*, derived from the Sanskrit word *Him*, meaning 'snow' and *Alaya* meaning 'house of snow,' is also known as the heavenly abode of Lord Shiva, who is believed to stay eternally in *Mount Kailash* in a state of deep meditation. Balbir felt that since Lord Shiva had chosen the Himalayas to meditate and let his mind be in total control, we, Hunter Pilots, or the *Trishuls of Lord Shiva* should be ever vigilant and meditate on Lord Shiva, when not flying. Balbir had painted the *Naamam* of Lord Shiva on each of the aircraft, three horizontal lines, which he assured us would

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Overlooking Lake Mansarovar, the highest freshwater lake, a walk around this mountain is said to clear away a lifetime of sins. Next, in the Kinnaur valley of devbhoomi, Himachal Pradesh, is *Kinnaur Kailash* at an altitude of 19,850 feet. This is considered the meeting place of Lord Shiva and Goddess Parvati. Another Himalayan Abode of Lord Shiva is *Shrikhand Mahadev* at an altitude of 16,913 feet. Lord Shiva took the form of a 70 feet stone *Shivling*.

## World Jellyfish Day



Although *World Jellyfish Day* may sound a bit odd to some, it only makes sense to celebrate an invertebrate that has been on this earth for millions of years longer than humans. So, this event is meant to honour our slightly slimy counterparts that can sometimes cause a bit of consternation at the beach. *World Jellyfish Day* has been slated to fall in the springtime in the southern hemisphere, as this is the season when jellyfish will begin their migration to the shores of the northern hemisphere.

## #TRIED & TASTED

# Yummy Tales Of Tummy

There's nothing quite like biting into a light, moist cake with a tender crumb.



If you have been having a bad day, then you know what can instantly cheer you up. Yes, a piece of cake holds the power to make everything right. Wouldn't you agree? There's nothing quite like biting into a light, moist cake with a tender crumb. And if you love baking, then you will know the joy it brings to create sinful treats and make everyone drool over it.

### Almond and Cashew Cake



- Ingredients**
- 1/2 Cup Maida
  - 1/4 cup Cashew powder (grind cashews in a mixer)
  - 1/4 cup Almond powder
  - 1/4 cup Sugar
  - 3 tsp Ghee
  - A pinch of Cardamom powder
  - 1/2 cup Milk
  - A pinch of Coconut (dry), grated
  - 1/4 tsp Baking soda
  - 1/2 tsp Baking powder

- Preparation**
1. Preheat the oven to 350 degree F.
  2. Grease the baking pan and apply some ghee. Use parchment or wax paper to cover the bottom and sides of the pan and keep it aside.
  3. Take a bowl and mix cashew powder, almond powder, maida, baking soda, baking powder and cardamom powder.
  4. In another bowl, add ghee and whisk till its fluffy (should take less than a minute). Add sugar and blend again.
  5. Mix the contents of the two bowls and transfer them to a pan. Add a pinch of maida to grated coconut and sprinkle it on top.
  6. Bake for 20 to 25 minutes and broil for less than a minute.
  7. Serve.

### Marble Cake

- Ingredients**
- 150 gms Butter
  - 150 gms Castor sugar
  - 3/4 cup Milk
  - 3 tsp Vinegar
  - 150 gms Flour
  - 1 tsp Vanilla essence
  - 1 tsp Cocoa
  - 1 1/2 tsp Baking powder
- For Icing:**
- 50 gms Butter
  - 100 gms Icing sugar
  - 50 gms Chocolate, melted
  - 2 tsp Cocoa
  - Sweets (to decorate)

- Preparation**
1. Beat butter and sugar together until light and fluffy.
  2. Gradually beat in the milk and vinegar. Fold in all the flour except 1 tbsp.
  3. Divide batter in half. Fold 1 tbsp flour in 1 half and cocoa in the other.
  4. Place in alternate spoonfuls in a greased and lined 8" cake tin.
  5. Bake at 180 degrees centigrade for 20-25 minutes.
  6. Turn out and cool.
  7. For icing, beat the ingredients together.
  8. Spread over cake.
  9. Decorate and serve.

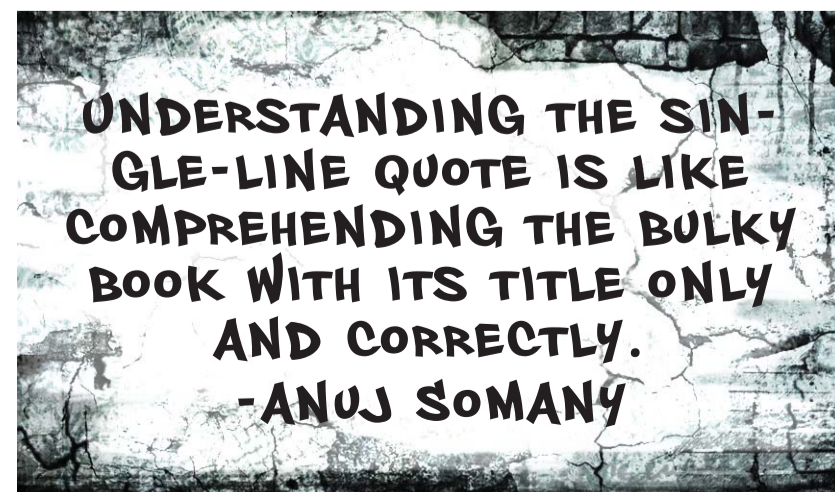
### Truffle Cake



- Ingredients For Sponge:**
- 150 ml Oil
  - 275 gram Sugar
  - 185 gram Milkmaid
  - 375 gram Curd
  - 375 Flour
  - 9 gram Baking soda
  - 9 gram Baking powder
- For Sugar Syrup:**
- 200 gram Sugar
  - 200 ml Water
  - 375 Flour
  - 500 gram Dark chocolate
  - 250 gram Fresh cream

- Preparation**
1. Whisk all the ingredients together except oil. Lastly, add the oil.
  2. Pour in a mould and bake at 180 degrees for 35-40 min. Allow the sponge to cool.
  3. Take one layer on a cake board. Brush it with sugar syrup. Apply the truffle. Repeat the process with the remaining layers of sponge. Finally, finish the top and sides of the cake with truffle. Allow the truffle to set.
  4. Finally, melt the truffle and pour over the cake. Refrigerate and serve thereafter.

## THE WALL



## BABY BLUES



## ZITS

