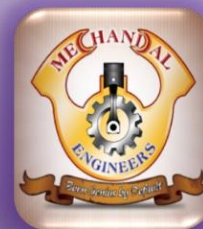




# PANIMALAR ENGINEERING COLLEGE

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POONAMALLEE, CHENNAI- 600 123.



## DEPARTMENT OF MECHANICAL ENGINEERING

### NEWSLETTER-THE TORQUE

.... Ready to be driven

Vol.14. Issue. 1

March 2019



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#### FROM THE PRINCIPAL'S DESK

I congratulate the Department of Mechanical Engineering for taking the initiative to bring out this Department newsletter in a fashionable manner. I hope this newsletter will provide the platform and opportunity to all the students and staff members of Mechanical Engineering to share and update the information on recent developments taking place in the field of Mechanical Engineering. I wish all the best for bringing out many volumes successfully.

#### FROM THE HOD'S DESK

I am very happy that our Mechanical Engineering Department is releasing this newsletter as a fore runner of the department activities for this semester. It is of upmost importance that students know things apart from the fundamentals in all fields to help them in their future. This newsletter in general will help the faculty and students to learn the latest developments. It will surely be of help to the students to advance their skills set.



#### Inside this issue

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## PROJECT EXPO

In this event the final year students of mechanical engineering from various engineering colleges presented their projects and the best three projects were selected and prizes were awarded. The best three projects are as follows

**Step Climbing Rover** presented by:

M.Sivaprakash and S.Praveen from Mechanical Department, SVCE, Chennai.

**Ornithopter** presented by:

Ishant Dubey, G.Sai Keerthana, Mohd. Aamir from Aeronautical Department, Bharath University Chennai.

**License Access Vehicle** presented by:

Rahul Shivakumar, AVIT, Chennai.  
modelling, Water Rocketry, Project presentation and Paper presentation.



*Student demonstrating their projects*

***DID YOU KNOW?***

**WRIST WATCH WAS  
INVENTED IN 1904**

**BY LOUIS  
CARTIER**



## ARTICLES

### Edible drone delivering humanitarian aid

- **Blesson Joshua**  
(I Mech)

The only thing cooler than a drone is an edible drone — especially one that saves lives. An inexpensive drone prototype, called Pouncer, was designed to help deliver humanitarian aid to remote regions with impassible roads.



The drone doesn't just carry essential items for relief, but also features the plywood frame for firewood, wings packed with food and protective covers that can double as shelter. Wind horse Aerospace, the company behind Pouncer, designed the drone in an effort to revolutionize aid in the aftermath of natural disasters. The team hopes the prototype will become a reality in near future.

### 5 Times Stronger than Steel : Fiber Reinforced Hydrogel

- **KrishnaPrabhu**  
(III Mech)



Hydrogels have shown significant potential in everything from wound dressings to soft robots, but their applications have been limited from their lack of toughness – until now. A team of scientists at Hokkaido University have developed a new set of hydrogel composites or "fiber-reinforced soft composites" that combine hydrogels with woven fiber fabric to create a material that is five times stronger than carbon steel. A very soft substance like mud can be made strong enough to make bricks by adding straw as a tempering material. The latter is very similar to the fiber-reinforced hydrogel. Hydrogels are made of hydrophilic polymer chains that absorb up to 90 percent water. They aren't very strong or durable, but by adding glass tiny fibers the researchers created a tough, bendable, stretchable material.

## **A massive device that cleans coastlines - Boomy McBoomface**

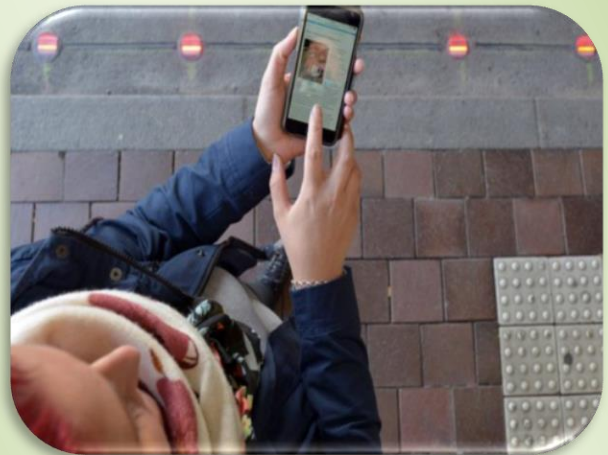
An ocean-cleaning innovation finally became a reality in 2016 after five years of research, prototypes and creativity. Dutch entrepreneur Boyan Slat first proposed an ocean cleanup machine at only 17 years old. But a prototype of the buoyant boom-like device called Boomy McBoomface was finally put into action in June, thanks to more than \$10 million in funding.



Slat's device floats along a coast and creates an artificial coastline, catching debris on the surface of the ocean. A connected conveyor then lifts the garbage into a central tower, where it is sorted for disposal.

## **Sidewalk traffic lights for those glued to their phones**

Let's face it: You simply can't be trusted to peel your eyes away from your phone — even when crossing the street. These sidewalk lights are very helpful for those who are glued to their phones.



That's why German public transportation provider Stadtwerke Augsburg embedded traffic lights in some city crosswalks around the country in April. The company hopes new lights will help tech-focused pedestrians to cross streets safely even if they refuse to look up.

*"The engineer has been, and is the maker of history"*



## ARTICLES

### SABRE ENGINE

- S.Naveen Kumar  
(III Mech)



- Synergistic Air Breathing Rocket Engine
- Reaction Engines Ltd.
- For high speed aircraft and spacecraft
- Jet engine
- 1. Mach 3
- SABRE Engine
- 1. Mach 5.4 – Air breathing mode
- 2. Mach 25 – Rocket mode

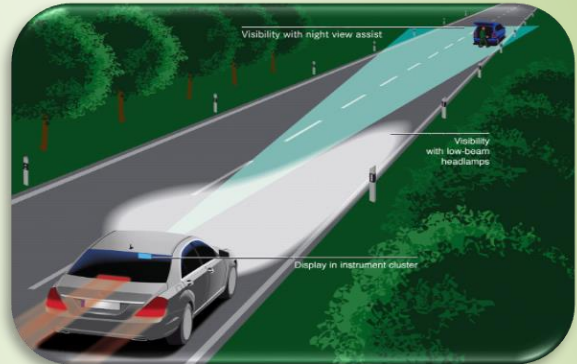
### DUKE ENGINE



- Five cylinder
- Four stroke and valveless
- Has unique axial arrangement
- Vibration free motion
- 36% smaller and 19% lighter
- 3 exhaust head only
- Further on Ethanol , CNG , Diesel .LPG etc.

### NIGHT VISION TECHNOLOGY IN AUTOMOBILE

- S.Yugesh Kanna  
(IV Mech)



Night vision technology is of greater use if one travels at a place where light availability is considerable low. First of all, Germans were the ones who came up with the idea of night vision. They used this in world war II. only later this technology was used in automobiles introduced on Cadillac Deville in 2000. This system uses a thermographic camera to increase a driver's perception and seeing distance in darkness and poor weather. Two types of systems are in this technology one active and the other passive system.

**ACTIVE SYSTEM:** This system uses a infrared source built into the car to illuminate the road ahead with light that is invisible to humans. Pros of using this active system is that it gives high resolution images, works better in warmer conditions. Cons of this are it does not work well in fog or rain and it works only for a shorter range of 150-200 meters.

**PASSIVE SYSTEM:** This system does not use an infrared light source, instead they capture thermal radiation already emitted by the objects, using a thermographic camera.