

thrustMIT

Brochure
MISSION 2017

MANIPAL UNIVERSITY



Manipal Academy of Higher Education
Administration Building



We extend our gratitude to the University for being an excellent support in helping us establish what most institutions would be highly skeptical of.

MIT, MANIPAL



We couldn't thank MIT enough for all the support in our endeavour of making our own fleet of rockets. We would not be standing where we are now without the generous support of the institution.

ESRA



The Experimental Sounding Rocket Association organizes an annual competition known as the Spaceport America Cup, held in the United States.

The competition aims to test and improve rocket engineering skills at under-graduate and post-graduate levels. With hundreds of teams from around the world and major media coverage, it is a world class event thousands of students, professors and businessmen look forward to.

THE TEAM



thrustMIT started off in early 2016 as a small group of rocket enthusiasts with an aim of introducing undergraduate rocketry in India. The team aspires to spread knowledge, promote, foster and bring about technical innovations in the ingenious field of rocketry. The team has come a long way since, and is constantly working towards perfection.

OUR WORK



LAPWING-1

The team's first ever project was Lapwing-1, a prototype rocket. With a fiberglass body, fins and internals, and with a team-manufactured H-class motor and an aluminium nozzle, it achieved an apogee of 200m. It housed an Altimeter for recording flight data, a flight computer for apogee detection and a recovery unit for safe landing.

SUBSYSTEMS

Aerodynamics

Deals with how the rocket body interacts with the surrounding air, engineers stability, minimises drag losses and designs the parachute.

Propulsion

Works on the development of rocket engines, nozzle designs, motor operating parameters and types of rocket propellants.

Structures

Designs all the internal components and the payload, while taking into account all mechanical and thermal factors that affect the rocket during flight.

SUBSYSTEMS

Composites

Works on lighter and stronger materials for the different components of the rocket. Takes charge for manufacturing and assembling the entire rocket.

Electronics

In charge of safe ignition, design of on-board circuitry, charge deployment and using sensors and microcontrollers innovatively.

Flight Computing

Controls live telemetry, payload functioning and running codes for apogee detection logic.

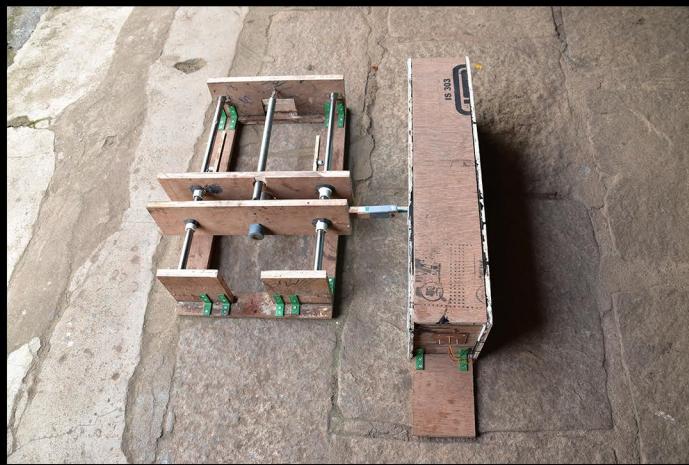
GALLERY



Engine Nozzle



Fiberglass Moulding



Static Fire Test



Propellant Casting

MEDIA COVERAGE

Manipal team set to build a sounding rocket

The initiative is made by a group of 20 second-year students of Manipal Institute of Technology

Deepthi.Sanjiv
@timesgroup.com
IN MANGALURU

A year ago, when a group of likeminded students secured admission into the Manipal Institute of Technology, Manipal University, they got to know about the several student projects in Manipal. "We were not sure if we should join an ongoing student project or start a project on our own. It was our mutual interest towards rocketry that forced us to research further, only to realise that India has very few rocketry teams. We started off as a small team of friends with a mutual love of rockets and a desire to build one ourselves. With the college's approval, we launched thrustMIT and began working on a sounding rocket and we are now making good progress," said Surya Nittur, a second-year engineering student as well as a member of the management team of thrustMIT.

thrustMIT is a team of 20 second-year students and recruitment is on for first year students from across all streams of engineering with the faculty advisor Srinivas G from the Aeronautical Engineering department. Sounding rockets are smaller rockets launched by ISRO, like Rohini series and are not like the large ones used to launch Chandrayaan.

Speaking to Bangalore Mirror, Amogh Govil, technical head of the team, said, sounding rockets are basically research oriented rockets, which carry a scientific payload 50-1500 kilometres above the surface of the earth.



Team thrustMIT seen along with Nokia CEO Rajeev Suri during his recent visit to Manipal; also seen is director of MIT Dr GK Prabhu

Altitude is generally between that of airplanes and satellites. Their small size allows them to be launched from temporary launch sites.

He said, "thrustMIT is working on a sounding rocket which will be around 8 feet tall, attain an apogee of around 10,000 feet and carry a payload of at least 8.8 lbs (4 kgs). We will use a solid propellant for propulsion. We will be employing a flight computer on board our rocket to monitor the flight path."

Meanwhile, Surya stated, there is a prestigious competition held every year in the US.

Experimental Sounding Rocket Association (ESRA) annually hosts an Intercollegiate Rocket Engineering Competition (IREC) for rocket teams from around the world. With a payload size of 8.8 pounds and target altitudes of 10,000 ft, and 30,000 feet above ground level, rockets are typically 4 to 12 inches in diameter and 4 to 20 feet long. Multistage rockets and all chemical propulsion types (solid, liquid, and hybrid) are allowed.

From 2017, the IREC will be the premiere event at the Spaceport America Cup (SA Cup).

Siddharth Naik (composites), Vedang Kokil (avionics) and

"The goal right now is to be Prateek Pati (management)

The Bangalore Mirror
1/12/16



India's future is bright. These students are launching their own rocket! 😊

ISRO - Indian Space Research Organisation



These Engineering Students Are Building A Rocket To Take A 4 Kg Payload To The Height Of 10 KM

indiatimes.com

India Times
4/12/16

WHY SPONSOR US?

We are one of the first rocketry teams in India.

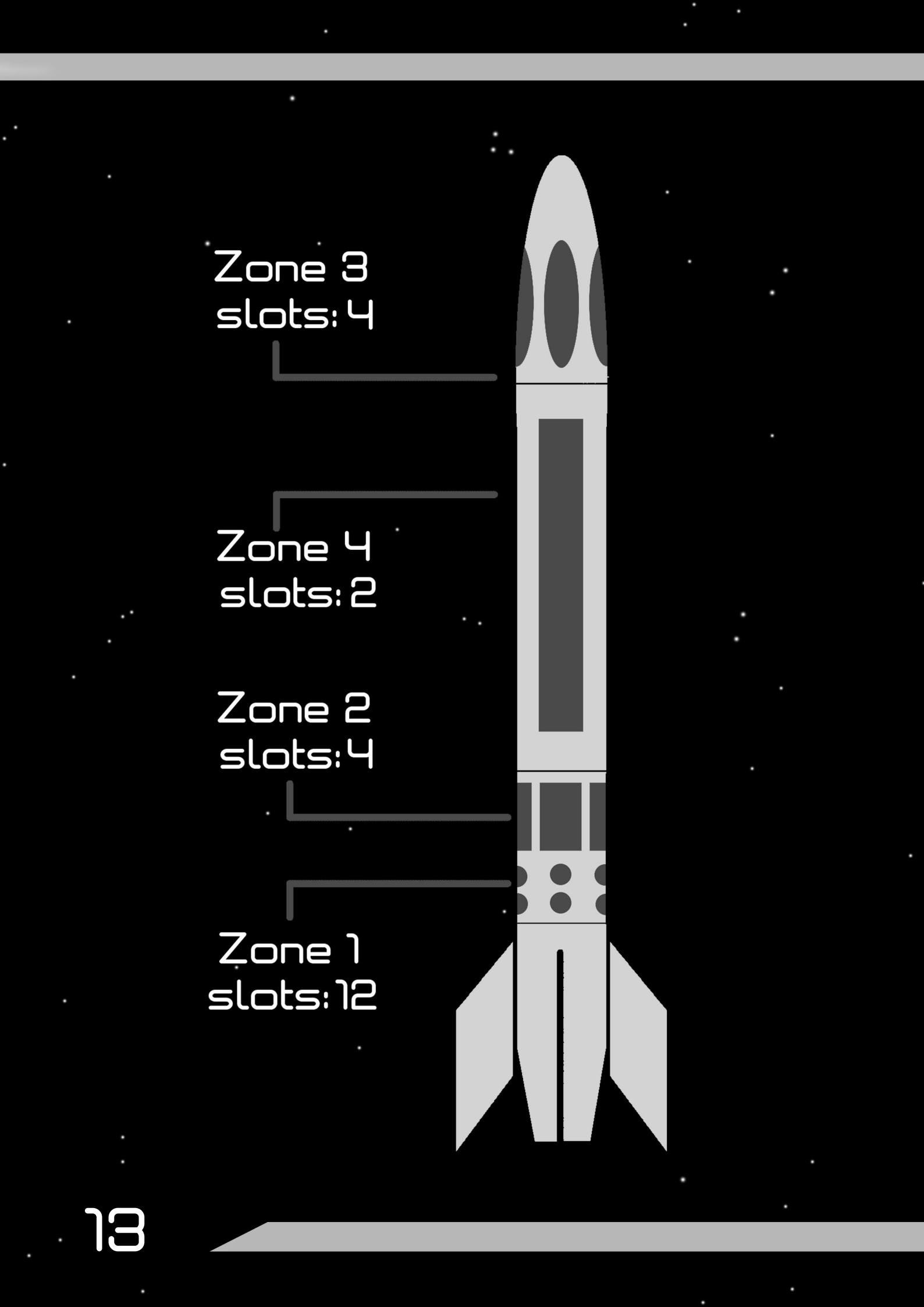
We take part in the biggest rocket engineering competition in the world, with thousands of spectators from across the globe.

Rocket science has always been the most advance field of research, so investing in us is investing in the future of Indian space research.

Since we don't have a lot of competitors from India, we not only represent the university, but also the nation.

SLABS

AMOUNT (₹)	50,000	75,000	1,50,000	3,00,000
PLACE ON ROCKET	Zone 1	Zone 2	Zone 3	Zone 4
LOGO ON APPAREL	✓	✓	✓	✓
MENTION ON SOCIAL MEDIA	✓	✓	✓	✓
LOGO ON OUR WEBSITE	✓	✓	✓	✓
PUBLICITY DURING LOCAL EVENTS	✓	✓	✓	✓
PUBLICITY DURING LAUNCH EVENT	✓	✓	✓	✓
AVAILABILITY FOR PROMOTION	✓	✓	✓	✓



Zone 3
slots: 4

Zone 4
slots: 2

Zone 2
slots: 4

Zone 1
slots: 12

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 www.thrustmit.in

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#liftoff