



BIRLA INSTITUTE OF TECHNOLOGY MESRA

Department of Space Engineering & Rocketry

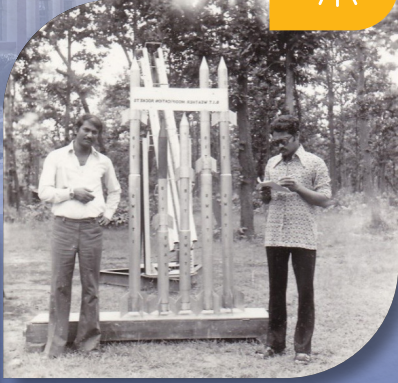
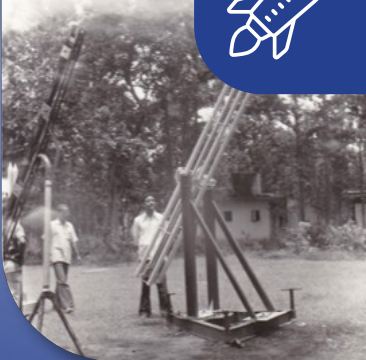
Since 1964

HISTORY

- » Establishment of the Department of Space Engg. & Rocketry - 1964
- » Founder - Shri B. M. Birla
- » Support from Dr. Vikram A. Sarabhai, INCOSPAR, NASA & Princeton University
- » Conceptualized before ISRO

COURSES OFFERED

M. Tech. in Aerospace Engineering with specializations - Aerodynamics, Aerostructures, Materials, Rocket Propulsion, Computational Fluid Dynamics, High Performance Computing



ROCKET CENTER IN INDIA

Work to Start on Research Unit in Town of Ranchi

Special to The New York Times.

CALCUTTA, Feb. 10—Work will begin soon at India's first full-fledged center for rocket research, at the Birla Institute of Technology in the hill town of Ranchi in Bihar.

A fund, with a target of nearly \$2,000,000, has been started for the purpose by B. M. Birla, a leading industrialist.

The center, designed to undertake fundamental research into rocketry, is expected to send up a two-stage rocket late this year.

Some attempts to send up experimental rockets have been made in India. Two years ago a rocket built at the National Science Laboratory, Bangalore, rose a few thousand feet into the air.

The New York Times

Published: February 11, 1962

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NUMBER OF PUBLICATIONS IN THE LAST 4 YEARS

YEAR	JOURNAL	CONFERENCE
2025	12	12
2024	18	23
2023	10	26
2022	7	15

05

No. of patents published

14

Total PhD Scholars

31

MTech students (AY2024-26)

11

Total No. of Sponsored Project in the last 3 years

587.15

LAKHS Total Funds

11

Events organised in the last 3 years

AeSI CFD Symposium (2024), NCAE 2025, 2-day workshop (2025), DRDO-ARDB Workshop and Panel Meetings and many more

PLACEMENT AND HIGHER STUDIES



ACTIVITIES IN THE LAST 3 YEARS

- » Invited talks at various organisations like VSSC, HEMRL, DRDL, RUDN Univ. (Russia), IN-SPACe and others
- » Participation in several National / International events
- » More than 100 distinguished visitors from R&D organisation and industry visited our Department
- » More than 2000 school students have visited our Department in the last 3 years
- » Facilitated IIT Madras and IIST students for their rocket testing
- » Initiated Alumni talk series (online)



EXISTING MOUS :

IITM

IIST

SKYROOT

MANASTU SPACE

RESEARCH AREAS:

Aerospace (Rocket Propulsion / CFD / Aerodynamics)	Fluid-structure interactions	Low speed flows	High speed flows
Hypersonic flows	Turbulence	Free jets	Aero-acoustics
Shocktube	Shock tunnel	Ramjet	Solid
Liquid & Hybrid rockets	Combustion	Microthruster	Fuel Development
Green Propellant	Propellant Processing	Computational combustion	Control techniques - active / passive
Aero-Structures	Materials	CFD	High Performance computing



TECHNOLOGIES DEVELOPED :

- » 3D Printed models for pressure measurements in wind tunnel
- » Drag reduction techniques in supersonic regimes, hybrid rockets, green propellants microthrusters
- » AI based predictions for aerodynamic characteristics of missiles and several others.



DISTINGUISHED ALUMNI:

<p>Shri M. C. Dathan Former Director SDSC/ VSSC, ISRO</p>	<p>Dr. A. K. Chakrabarti Former Director, DRDL</p>	<p>Shri EVS Nambodiri LPSC, ISRO</p>	<p>Shri Sibnath Som Former Director SDSC</p>	<p>Dr. Rajeev Sharma CXO Grid Dynamics</p>
<p>Dr. D. Narayan PD, ADA</p>	<p>Dr. S. Mohapatra ADA</p>	<p>Dr. R. D. Swamy DRDL</p>	<p>A. S. Narayana DRDL</p>	<p>Mr. B. Sampath Rao NAL</p>

RESEARCH FACILITIES:



Jet Facility with Anechoic Chamber



I-STEM Equipment Code :
2033872

Supersonic Facility (4" x 6")



I-STEM Equipment Code :
2033871

Supersonic Facility (2" x 4")



I-STEM Equipment Code :
2033870

Subsonic Facility (2' x 2')



Free Jet Facility



Shock tube and Hypersonic facility



Double Planetary Mixer



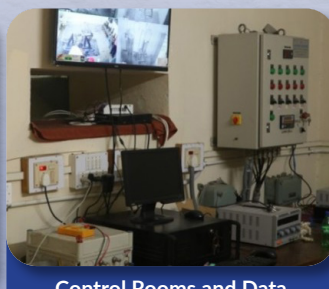
High Speed Dispenser



Chemical Pulverizer



Sigma Blade Mixer



Control Rooms and Data Acquisition Facilities for Liquid, Solid and Hybrid static tests

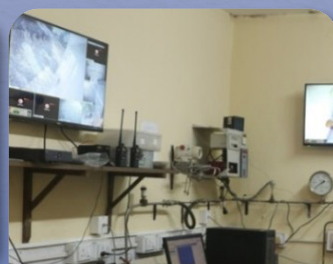


Static Fire Test of Solid Propellant

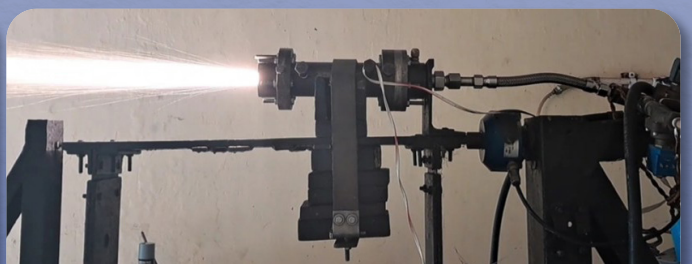


I-STEM Equipment Code :
2037518

Simultaneous Thermal Analyzer (STA)
Supported through DST FIST



Control room



Hybrid Rocket Static Test Stand in Action