

NEWSLETTER

ALBEDO



HINDUSTAN
INSTITUTE OF TECHNOLOGY & SCIENCE
(DEEMED TO BE UNIVERSITY)

APRIL '23

**DEPARTMENT OF
AERONAUTICAL ENGINEERING &
DEPARTMENT OF AEROSPACE
ENGINEERING**



**DEPARTMENT OF AERONAUTICAL ENGINEERING
&
DEPARTMENT OF AEROSPACE ENGINEERING**

Dean's Message



Greetings to all!

It gives me immense pleasure and pride that our department is releasing the second issue of its newsletter, "ALBDEO" as a precursor to departmental activities. This newsletter focuses on the activities and accolades of our department students and faculty. It also focuses on the innovation that occurred in the department over the past three months, revealing the major strengths of the department as well as the academic excellence of our students. I would like to thank and congratulate all the students, Heads, faculty members, non-teaching staff, and supporting staff for their limitless support and earnest efforts for the betterment and development of the department. I believe that this newsletter will motivate teachers and students to share their creativity and new ideas with the world and will help in their overall development. I sincerely congratulate all the members of the editorial board and the especially the coordinator, Mr. G. Dinesh Kumar for bringing up this issue in a perfect manner.

Dr. R. Asokan
Dean Aviation

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Programs Offered

Undergraduate Program

-  **B.Tech Aeronautical Engineering**
-  **B.Tech Aerospace Engineering**

Postgraduate Program

-  **M.Tech Aeronautical Engineering with specialization in Aircraft Maintenance & Avionics**
-  **M.Tech Defence Technology**



EVENTS



&

ACTIVITIES

Boeing Campus Engagement Programme

Centre for Professional and Career Advancement, HITS & Department of Aeronautical Engineering organized Boeing Campus Engagement Programme including a Tech Talk followed by a Panel Discussion on "Future of Engineering in India" on 22nd February 2023.



EVENTS

&

ACTIVITIES

National Seminar on "Small Satellites"

The Department of Aeronautical and Aerospace Engineering, HITS along with the Centre of Excellence in Satellite Technology (CEST) and CubeSat Club, organized a National Level Seminar on Small Satellites and CubeSat workshop on 11th and 12th of April 2023. Alongside this event a Panel Discussion on "The Great Indian Satellite Revolution" was also conducted on 11th April 2023 with high profile panelists from R&D organizations, Industry and Academia. On 12th April 2023, a CubeSat workshop was conducted for the students in which more than 240 students from HITS, KCG Tech and other colleges in and around Chennai has actively participated and gained the knowledge on Satellite design, building and testing.



EVENTS

&

ACTIVITIES

Panel Discussion on "The Great Indian Satellite Revolution"

HINDUSTAN
INSTITUTE OF TECHNOLOGY & SCIENCE
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G20
INDIA 2023

The Department of Aeronautical and Aerospace Engineering
Centre of Excellence in Satellite Technology (CEST)

National Seminar on
Small Satellites: A Revolution in Space & CubeSat Workshop

Panel Discussion on The Great Indian Satellite Revolution

11 April 2023 09:30 AM Andromeda Lecture Theatre

Special Guest:
Dr. S Unnikrishnan Nair, Director VSSC, ISRO

Special Guest:
Dr. A Sivathanu Pillai, Founder CEO & MD, BrahMos, Professor Emeritus (Research), IITB

Special Guest:
Dr. Mylswamy Annadurai, Former Director ISAC, ISRO

Guest of Honor:
Dr. S Rangarajan, CMD, Data Patterns, Chennai

Panel Members:
 - **Panelist - I & D Organization:** Mr. S A Kannan, Programme Coordinator, ISRO Student Satellite Program, ISRO
 - **Panelist - Industry:** Mr. K Anand, Director, NewTech Aerospace Pvt Ltd; Mr. Yogesh Dubey, National Sales Head, Ducom Aerospace, Bangalore
 - **Panelist - Academia:** Prof. M Krishnaswamy, Former Programme Coordinator & Outstanding Scientist, ISRO, ISRO; Dr. K Gopalakrishnan, Secretary General, ITCIA / ITC; Dr. S. N. Sridhara, Vice-Chancellor, IITB; Dr. Senthil Kumar, Director Research, IITB; Dr. Mamta Gulati, Assistant Professor, IITB
 - **Moderator:** Dr. R Asokan, Dean (AI & AI), IITB

Panel Members:

- Dr. S Unnikrishnan Nair – Director VSSC, ISRO
- Dr. Mylswamy Annadurai – Former Director, URSC, ISRO
- Dr. A Sivathanu Pillai – Founder CEO & MD BrahMos & Professor Emeritus (Research)
- Dr. Rangarajan – CMD, Data Patterns, Chennai
- Prof. M Krishnaswamy – Former Programme Director, URSC, ISRO
- Mr. S A Kannan – Programme Coordinator, ISRO Student Satellite Programme
- Dr. K Anand – MD, NewTech Aerospace, Bangalore
- Dr. Yogesh Dubey – National Sales Head, Ducom Aerospace, Bangalore
- Dr. Mamta Gulati – Assistant Professor, Thapar University
- Dr. K Gopalakrishnan – Secretary General, ITCA

Technical Sponsors

DATA PATTERNS



EVENTS



CENTRE OF EXCELLENCE IN
SATELLITE TECHNOLOGY

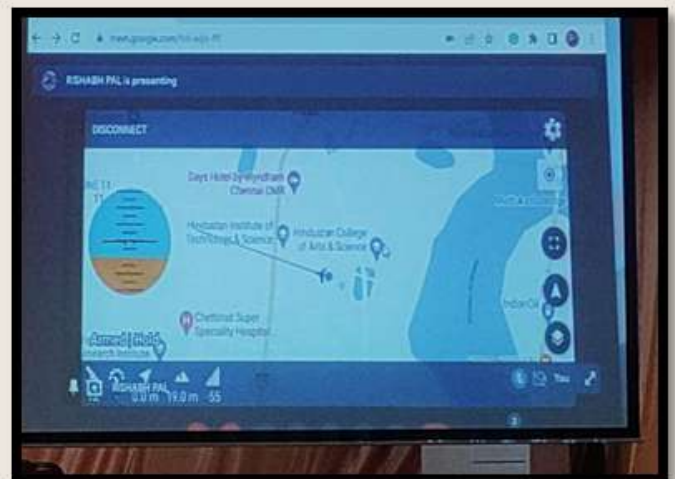
CEST



&

ACTIVITIES

Workshop on Cube Satellite



EVENTS



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ACTIVITIES

Launch Ceremony - Advanced Masters in "Aviation Safety Management"

Hindustan Institute of Technology and Science (HITS) has added another flagship programme "Advanced Master's Programme in Aviation Safety Management" in collaboration with the Internationally renowned and France based School of Aviation-Ecole Nationale de l'Aviation Civile (ENAC). The launch ceremony of this programme was conducted on 18/04/2023 at the Andromeda Lecture Theatre, HITS which was organised by the department of Aeronautical and Aerospace Engineering. In connection to the launch ceremony a conclave on "Aviation Safety Management" was also organised in which stakeholders from the different fields of aviation participated and gave their views on the necessity on Safety Management System (SMS) in the Aviation Safety Management.



Industry & Academic Expertise:

- Mr. Nicolas Cazalis – Vice President, ENAC, France
- Capt. Hemant Kumar – Vice President & Chief of Flight Safety, Indigo
- Dr. Lalit Gupta – Former JDG, DGCA
- Dr. A Sivathanu Pillai – Founder CEO&MD, BrahMos & Professor Emeritus (Research)

EVENTS



&

ACTIVITIES

Launch Ceremony - Advanced Masters in "Aviation Safety Management"



EVENTS

Aero India 2023



2023

AERO INDIA

The Runway to a Billion Opportunities

ATTENDED

EVENT DATE: 13-17 FEBRUARY 2023

Hindustan group of institution showcased their various innovative products such as KCG SAT, 3D Printer, Drones etc in the Aero India 2023 at Hall F stall 4.1 which was much attracted by the industry and R&D Establishments.

Key Highlights:

- Theme for 2023: "The runway to a billion opportunities".
- The Aero India show is held every 2 years.
- It was held by Hindustan Aeronautics Limited (HAL) this year on behalf of the Department of Defence Production of the Ministry of Defence.
- The first edition of the air show was held in 1996.

More than 150 Aero/Aerospace students from HITS visited the expo & Air show along with 4 faculty members on 16th February and got benefitted .



HITS Students Team @ AEROINDIA

EVENTS

ATTENDED



"AERO QUIZ" : School Connect Competition

EVENT DATE: 13-17 FEBRUARY 2023

The AERO QUIZ was conducted for the school students for creating awareness about the Aviation sector as part of AERO INDIA 2023. The competitions was held both modes online and offline where more than 300 school students participated actively and won attractive prizes at HITS Stall in AERO INDIA 2023.

The HITS stall was visited by various officials and eminent persons from industries and they enquired about our area of expertise and other research centers involved in various research projects and product development.

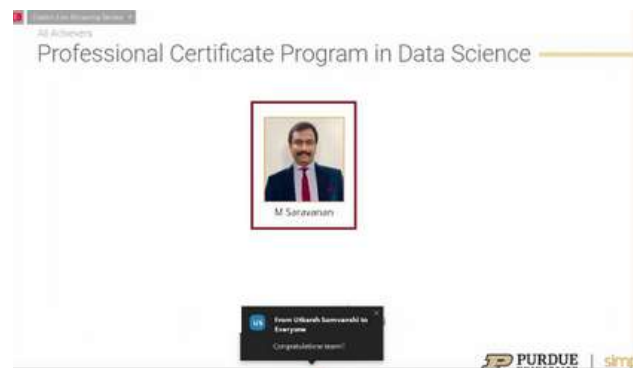



EVENTS

ATTENDED




Dr. M. SARAVANAN, A.P(S.G) attended PURDUE UNIVERSITY Online Convocation 2023 where he received Professional Certification in "DATA SCIENCE" on 23/03/2023

Mr. S.Elumalai, A.P(S.S) & Mrs. T. Sivaganagai attended 9 days FDP in "Design and Development of Industry Led Curriculum in Technological Era" organized by Association of Indian Universities & Amity University



Dr. L. Suneetha, A.P(S.G) attended the IUCEE Engineering Education Research session conducted by IUCEE.



Dr. M. Saravanan published a paper titled "Modelling and analysis of vortex induced vibration in marine risers" in Materials Today Proceedings



Mr. G. Dinesh Kumar, A.P has been selected as the Technical Committee member in AeroTHON'23.

EVENTS

MoU Signing Ceremony B.Voc. in Aircraft Maintenance



EVENT DATE: 5 APRIL 2023

The Department of Aeronautical & Aerospace Engineering , HITS signed 4 MoUs for the B.VoC. in Aircraft Maintenance course as part of National Skill Development Corporation Program.

1. ST Advanced Composites Pvt. Ltd.
2. Bala Aatral Solution Pvt. Ltd.
3. Felix Aviation Services.
4. Dronoid Aerospace Pvt. Ltd.



BEYOND THE DEPARTMENT

Students' Achievements



STRIKER

Team Striker won first prize in "FLIGHT FURY" an Aeromodelling Competition conducted by IIT ROORKEE (Cognizance 2023) and bagged cash prize of Rs. 2 lakhs out of 30 participating teams.

The innovation was a blended wing body which was able to do all the given tasks including the aerobatics challenge. The team was successful in demonstrating it practically during Flying Rounds.

TEAM STRIKER BAGS 1ST PRIZE OF "2 LAKHS"



TEAM STRIKER
Shansha (19103043)
Laura Merin D (19103031)
Danush Datthathireyan K (19103016)

AEROTHON'23

For AeroTHON '23 from the Centre for Autonomous Systems & AERO Club five teams have been registered to take part in the National Level Uncrewed Aerial Vehicle. SAEINDIA Aerospace Forum is organizing AeroTHON 2023 competition for students with primary focus on developing design, build and piloting skills of Uncrewed Aircraft System (UAS) to prepare them industry ready for the emerging market. The students undertake a full design and build cycle of an Uncrewed aerial vehicle meeting specific mission requirements, culminating in a final fly-off event.

DRONE TRAINING

Centre for Autonomous Systems & AERO Club has started Drone Training for the club members and Interested students. The phase-I training is provided under the Nano category with drone weight of less than 250g. Around 100+ students have shown interest and training has been initiated.

BEYOND THE DEPARTMENT

Students' Achievements

CYBROID

Team "CYBROID" participated in SCIMIT '23, a Mega Project Contest held at Manakula Vinayagar Institute of Technology, Pondicherry and the team won 1st place with a cash prize of Rs. 25,000.

The project was a small cube sat which detects UV and ozone concentration which can be launched and the data's can be transmitted .These data, can be sold to industries on a monthly basis . The satellite uses a laser communication system which is more faster than radio communication.



TEAM MEMBERS
O.G Ruban Raj (21103059)
N.. Kavya Shree (2113037)

Congratulations
 Secured International BRONZE HONOR in the International Youth Math Challenge -2022 (IYMC- 2022)



DEVAGUPTAPU SAI PRAKASH NAVDEEP
 2nd Year B.Tech AEROSPACE ENGINEERING
 He got positioned in the top 20% among the Global participants.

#SpeakForIndia
 www.speakforindia.in



WORLD'S LARGEST DEBATING PLATFORM FOR COLLEGE STUDENTS

Instagram: @speakforindiaofficial, Facebook: Speak_A_India, Twitter: @S107061004

Aparajethaa K of 3rd Year Aerospace participated in "Speak for India - Debate" by Times of India and Federal Bank in District Level



YARONA'23 Winners Trophy by Department of Aeronautical & Aerospace Engineering

STAFF ACCOLADES



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SEED GRANT SANCTION ORDER DISTRIBUTION CEREMONY

Congratulations



Seed Grant of Rs. 22 Lakhs has been awarded to 16 Faculty members by the Management of HITS for carrying out preliminary research in identified Research Areas. The sanction order was handed over to young research faculty by Vice Chancellor in presence of Registrar on 20.03.2023 at 9.00 am, Conference Hall, Main Building.

Dr. G. C. Vishnu Kumar, Asst. Prof., Aerospace, **Dr. N. Purushothaman**, Asst. Prof., Aero,
Dr. P. S. Joanna, Prof., Civil, **Dr. V. Preethi**, Prof., Civil, **Dr. C. Daniel**, Asst. Prof., Civil,
Dr. Shalini R Nair, Asst. Prof., Civil, **Dr. V. Ceronmani Sharmila**, Prof., IT, **Dr. Rajesh M**, Asst. Prof., Mech,
Dr. D. Balaji, Prof., Mech, **Dr. Janaki Raman S**, Asst. Prof., MCT, **Dr. Pavan Kalyan Lingampally**, Asst. Prof., MCT,
Dr. Ponmudi Selvan T, Asst. Prof., Physics, **Dr. N. Rajeswari Yogamalar**, Asst. Prof., Physics,
Dr. Tejaswi Ashok Hegde, Asst. Prof., Physics, **Dr. Samuel Ayofemi Olalekan Adeyeye**, Associate Prof., FT,
Dr. R. Ramakrishnan, Asst. Prof., PED

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NEBULA ASTRO CLUB

Astrophotography

Nebula Astro Club , Department of Aeronautical & Aerospace Engineering organized Star and Comet gazing for school students & common public using Telescopes

1. Celestron Nexstar 8se
2. GSO 12 inch Dobsonian

A group of 19 students and 2 faculty members from Nebula Astro club went on a two day trip to Vainu Bappu Observatory and Yelagiri Hills. The group explored various telescopes, learned about advanced instrumentation, stargazed overnight, observed celestial objects and learned astrophotography, and went trekking on Yelagiri hills. The trip was a successful opportunity for learning and fun experiences.



Astro Club Team at Vainu Babu Laboratory

Charan Nag
B.Tech Aerospace - 3rd YearPrakash Navdeep
B.Tech Aerospace - 2nd Year

STUDENT ZONE

Terraforming Planets!

You know those science fiction stories where humans make other planets habitable? Scientists are exploring the possibility of "terraforming" other planets, which means modifying their environments to make them livable for humans.

Let's dive a little deeper into the idea of terraforming other planets! It's not just some far-off dream anymore – with the progress we've made in space exploration technology, it's becoming more and more feasible.

So, what makes a planet habitable? There are a few factors to consider, but the most important one is water. For a planet to support life as we know it, it needs to have liquid water on its surface. Other factors include the planet's distance from its star (the "habitable zone"), its atmosphere, and its temperature.

Mars is the planet that scientists are most interested in terraforming right now. Despite being cold, dry, and not very hospitable to human life, it has a few things going for it. For one, it has a day/night cycle that's similar to Earth's, which means it wouldn't be too hard to adjust to for any potential colonists. It also has polar ice caps that could provide a source of water.

So, how would we go about terraforming Mars? One idea is to warm up the planet by releasing greenhouse gases into the atmosphere. This would trap more heat from the sun, raising the planet's temperature and melting its ice caps. As the ice melts, it would release more water vapor into the atmosphere, creating a positive feedback loop that would make the planet more and more habitable.

Another idea is to introduce organisms to Mars that could convert its carbon dioxide atmosphere into oxygen through photosynthesis. This would not only create a more breathable atmosphere for humans, but it would also provide a source of food and oxygen for any potential colonists.

But there are a few challenges to terraforming a planet. For one thing, it's going to be expensive – we're talking billions or even trillions of dollars. It's also going to take a long time – centuries or even millennia. And there are potential unintended consequences, like introducing new organisms to a planet that could become invasive species and disrupt the planet's ecosystem.

Despite the challenges, the idea of terraforming other planets is pretty exciting. It's not just science fiction anymore – we may one day be able to turn barren, lifeless planets into thriving ecosystems that support human life. Who knows, maybe someday we'll be able to vacation on Mars!

by,

Aparajethaa K

B.Tech Aerospace Engineering (3rd year)

STUDENT ZONE



Photos taken by Dhruvashish Vangala
B.Tech Aeronautical Engg. (3rd Year)

STUDENT ZONE



Photo by Aparajethaa K
B.Tech Aerospace Engineering (3rd year)



Art by Oshin
B.Tech Aerospace Engineering (3rd year)



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CHENNAI

Department of Aeronautical & Aerospace Engineering

Congratulations

GATE 2023 All India Rank Holders (AIR)

Name of the Student	AIR
Bhavani Prasad Mandapati	9
Bavesh	31
Jaswant Singh	32
Pawan kumar	138
Akshat Jani	158
Viswa Patel	170
Aditya	536

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