

***National Seminar***

***SPACE 2.0***

## ***National Seminar – SPACE 2.0***

### ***An era of small satellites, Big applications-Opportunities and Challenges***

***“Space is an inspirational concept that allows you to dream Big”***

Proving this verbatism to Optimum,Dr. MGR-ACS Space Technology Centre under the aegis of Dr. MGR ERI organized a Two-day National Seminar – SPACE 2. O on “An Era of small Satellites, Big Applications, Opportunities and Challenges” from 30 - 31st January 2023” to facilitate the young space aspirants to interact with scientists, researchers, start-up entrepreneurs and experts in the field of space technology.

The Two-day forum mounted its inaugural session on 30-2-2023, presided by our Hon’ble President, **Thiru Er. ACS. Arun Kumar**, who also **unveiled** the model of **Dr.MGR-ACS Cube Satellite**. Rector (R&D), **Prof. Dr. D. Viswanathan** saluted the wisdom gathering and drifted across the recent developments in space technology. The focus of the seminar spotlighted in the words of Addl, Registrar **Dr.V.Cyrilraj**. The ambitious vision behind Dr. MGR-ACS Satellite Tech centre was casted in the verse lines of Vice Chancellor, **Prof. Dr. S. Geethalakshi**. Our Chancellor, **Padmasri RM. Vasagam** conversed on the role of astronomy on the crossroads of interdisciplinary sciences. The prudence gathering perceived, **Distinguished Scientist & Director-Satish Dhawan Space Centre-SHAR, Shri.A. Rajarajan** who instilled on the imperative part of space education and encouraged the aspirants to mend their routine as it takes centre stage in their life. The extensive gathering had their streaks of inspiration from the words of Guest of Honour, **Dr.Prakasha Rao PJKS**, Former Director (Space Infrastructure Program Development) ISRO.



**Prof. Dr.D.Viswanathan, Rector (R&D) , Convener of National Seminar Space 2.0** saluted the wisdom gathering and drifted across the recent developments in space technology



The focus of the seminar spotlighted in the words of Additional Registrar **Dr.V.Cyrilraj, Co-Convener of National Seminar Space2.0**



Release of PDR of Dr.MGR-ACS Satellite by **Shri A. Rajarajan, Director-Satish Dhawan Space Centre-SHAR**



Guest of Honour, **Dr.Prakasha Rao PJVKS Padmashree. Prof. R.M. Vasagam** Former Director (Space Infrastructure Chancellor, Dr.MGR ERI, Program Development) Former Project Director (APPLE - India's First Geostationary Communication Satellite)

On 31.01.2023 The progression of National Seminar -SPACE 2.0 headed its **Session I** on the title "Small is the New Big" by the distinguished scientist & Director-Sathish Dhawan Space Centre(SDSC), Sriharikota,

whose talk schemed over the power of miniaturization of satellites: current trends and discoursed on the evolving challenges in the space sector.

**Padmashree. Prof. R.M. Vasagam**, Chancellor, Dr. M.G.R. ERI, Former Project Director (APPLE - India's First Geostationary Communication Satellite) staged his talk on “**Future Space Technologies**” whose words wheeled over Human Flight Program-Gaganyaan Project, green propulsion initiatives involved and emerging research fields in the space forum.

The session was chaired by Dr. V. Cyrilraj, Addl. Registrar and Co-Chaired by Dr. T. Felixkala, Jt. Registrar (Student Affairs) of Dr. MGR ERI.

**The Session II** festooned its virtual diasporits speaker **Prof.Dr.Venkata Prasad, TU Delft University, Netherlands** who addressed on the title “**Space Internet of Things**” which upheld the principles behind Sensor Wireless Actuator Network in Space (SWANS).

**Dr.Prakasha Rao, Chairman, Project Monitoring Committee, DSRQ, ISRO** upheld his discussions over “Reliability and Quality Assurance for Space Craft System” and conversed on space craft transportation, assessment tools, test and evaluation in satellite management.

**Dr. R.R Elangovan**, Former ISRO scientist briefed on FMEA (Failure Mode Effects Analysis). He explained about test, evaluation, verification of satellite design modules.

The session had our Chancellor, Padmashree R.M. Vasagam as its chairperson and Dr. L. Ramesh Jt. Registrar (EPA) as its Co-Chair.

The session III prevailed with women as its speakers. The prime speaker, **Smt.R. Pramitha, Founder & CEO of Transcend Satellite Technology** articulated on “**Student Satellites: Payloads and New Technology Trends**”. Her talk tethered over cubesat platforms and types of payloads. She also signified over the Space Debris awareness and Space traffic Management in the virtual dias.

The forum ascended its student as a Proud Speaker. **Ms. S. Balavigneshwari (III B.Sc.,Physics)** asserted her words over an ongoing project “**Sounding Rocket: Design and Development**” and detailed the science principles and simulation techniques involved in the rocket

design. The session was chaired by Dr.Ethiraj, Dean(E&T) of DR.MGR ERI.



**Dr. R.R Elangovan**, Former ISRO scientist briefed on FMEA (Failure Mode Effects Analysis). He explained about test, evaluation, verification of satellite design modules.



**Ms.S.Balavigneshwari** (III B.Sc Physics, Dr.MGR ERI) asserted her words over an ongoing project “Sounding Rocket : Design and Development “

The day anchored its momentum from the tapestry of the sessions held earlier.

**Shri. R. Shakthikumar, Founder & CEO of Orbit Aid Aerospace** gave an insight on “**Fuel station in Space**” and their refueling product named SRDP (Standard Interface Docking and Refueling Port). The speaker also detailed the refueling technology for existing satellites.

The session adorned its virtual dias to welcome its speakers connected virtually. **Dr. Rei Kawashima, Secretary General, University Space Engineering Consortium,(UNISEC)**, Japan elucidated the perspectives and the vision of UNISEC-Global on space science and exploration. The student activities undertaken by UNISEC also briefed on her verse.

**Dr.J. Ramkumar, Department of Mechanical, IIT Kanpur** conversed on “**Artificial intelligence as a creative tool in Product Design**”. The rudiments of machine learning and AI (Artificial Intelligence) were briefed. The implementation of AI in different product design strategy was explained.

The session was chaired by Shri. V. Ranganathan, Former Deputy Director, Sathish Dhawan Space Centre (SDSC), Sriharikota and Co-chaired

by  
Dr. V. Latha Controller of Examinations, Dr. MGR ERI

**Dr. K. Gopala Krishnan, Secretary General, ICTA** gave a brief talk on the milestones of 75 Students’ Satellites Mission. He gave his insight on CANSAT INDIA and WCRC contest. He concluded by sharing his travel experiences in the satellite mission.

The session moved its gear by mounting student as its Speaker in the real time podium. **Mr. Rahul Raj Purohit (II Civil, Dr.MGR ERI)** presented his talk on “Design and Development of Can sat”. He gave a spotlight on the mechanism and principles behind the deployment of **CanSat**.

**Dr.AlexyKucheiko, Associate Professor, Moscow Aviation Institute, Russia** gave his insight on the topic of “**How External Rain Events Impact Dam Safety**”. The session grabbed the fascinating technological principles involved in managing the water in dams and the measures to control flood.

The wise gathering also witnessed the joy of sharing the cascade of activities performed by the Faculty and Students of Dr.MGR-ACS Satellite team which milled over Industrial Visits, Internships, Attending International Conferences/ Seminars, Technical group discussions and the internal seminars which was articulated by **Ms. ST. Sri Siva Sruthika (III Bio Tech,Dr.MGR ERI)**.

The session was chaired by Shri R.Sakthikumar, Founder – CEO Orbit Aid Aerospace Pvt.Ltd., Bangalore and Co-Chaired by Dr. RM. Narayanan, Dean (Sponsored Research& Green and Smart Campus)

**Shri. V. Ranganathan, Former Deputy Director, Sathish Dhawan Space Centre, SHAR** elucidated on “Launch Vehicles and their Subsystem”. He gave interesting concepts behind Orbits, Rockets their Coordinates and thrown light on fuels and propulsion system in Rockets. The video from the on-board camera installed in the launching vehicle of Mangalyan Mission, which was played during the session grabbed the thoughts of young minds.

**Mr.Dusan Radosavljevic, Founder and Head Committee for Space Programme Development (CSPD),Serbia** talked about “**Space Startups**”. He articulated on the use of space in the context of CSDP (Common Security and Defence Policy). He inspired the young people to flaunt their space skills in World Can Sat & World Rocketry competition.

The session decked up its student, **Ms.N. Aarthi Shree (II M.Sc. Phy)** as its proud speaker, who presented on the overview of CubeSat system. **Dr. V. Cyril Raj, Addl. Registrar of Dr. MGRERI** gave an insight on 75 Students’ Satellites Mission. He elucidated on the various modules involved in designing the payload of Dr.MGR-ACS satellite intended to save the fishermen community from demarcating the maritime borders.

The session was chaired by Shri R.Sakthikumar, Founder – CEO OrbitAid Aerospace Pvt.Ltd, and Co-chaired by Dr. M Ganesan, Jt. Registrar (CDC, OBE).

“**Every end is a new Beginning**”, the mantra lurking around the corners, the wise gathering geared up to ascent its **Valedictory Ceremony**, presided by the **Chief Guest, Er.S.Kannan, Chairman, The Institution of Engineers (India)**, who scaled up the history of Satellite and rocket regime and specified its technology transfer in his talk. The **Guest of Honour, Shri.V. Ranganathan, Former Deputy Director, Sathish Dhawan Space Centre, SHAR** framed his wisdom words by inspiring the young aspirants of today as evolving space leaders of tomorrow. The **Guest of Honour, Er.D.Gokul, Senior Scientist, ISRO**, who inculcated the patriotic feel of serving back our nation with our best. The grateful



minds and mindful hearts involved in organizing the seminar were appreciated.

The enthralled gathering satiated their knowledge thirst in the space and satellite regime during the sessions upheld in the seminar, was affirmed from the feedback of students resounding the success of the seminar.



**Mr.R.Sakthikumar**, Founder & CEO of Orbit Aid Aerospace gave an insight on “Fuel station in space” and their refueling product named SRDP (Standard Interface Docking and Refuelling Port)



**Dr.J.Ramkumar**, Department of Mechanical Engineering, IIT Kanpur conversed on ”Artificial Intelligence as a creative tool in Product Design”



**Dr.K.Gopala Krishnan**, Secretary General, ITCA, Bangalore gave a brief talk on the milestones of 75 Students' Satellites Mission. He gave his insight on CANSAT INDIA and WCRC contest. He concluded by sharing his travel experiences in the satellite mission.



**Mr.Rahul Raj Purohit** (Iyer Civil, Dr.MGR ERI) presented his talk on "Design and Development of CAN SAT". he gave a spotlight on the mechanism and principles behind the deployment of CAN SAT.



**Ms.ST.Sri Siva Sruthika** (III Bio Tech, Dr.MGR ERI) articulating the cascade of activities performed by the Faculty and Students of Dr.MGR-ACS Satellite team which milled over Industrial Visits, Internships, Attending International Conference / Seminars, Technical group discussions and the internal seminars.



**Ms.N.Arthi Shree**, (II year,MSc Physics, Dr.MGR ERI)as its proud speaker, who presented on the overview of Cubesat system.



**Mr.V.Ranganathan,**  
Former Deputy Director,  
Sathish Dhawan Space  
Centre, SHAR elucidated  
on “Launch Vehicle and  
their Subsytem”..



**Er.D.Gokul,** Senior Scientist, SDSC,  
Sriharikota, ISRO, who inculcated  
the patriotic feel of serving back our  
nation with our best

**Valedictory session** presided by the **Chief Guest, Er. S. Kannan,**  
**Chairman, The Institution of Engineers (India),**





**SAT TEAM -The workforce behind the Conference**