SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
(An Autonomous Institution)
Puducherry - 605 107

125 Acres Green Campus | AICTE IDEA Lab | 50+ MoUs | 17 Centre of Excellence | Industry 4.0 ready Curriculum

Sri Manakula Vinayagar Engineering College (SMVEC) an Autonomous institution was established in the year 1999. It is approved by AICTE, UGC, Govt. of Puducherry and affiliated to Pondicherry University. Within this short span of time, it has emerged as one of the leading premier Engineering College in the State.

24 YEARS OF

Approved by

Accredited by NAAC NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL | NBA NATIONAL BOARD OF ACCREDITATION | TCS TATA CONSULTANCY SERVICES

SMVEC - SCHOOLS

School of Engineering
- UG, PG and Ph.D programmes

School of Architecture

School of Arts and Science

School of Allied Health Sciences

School of Agricultural Sciences

School of Physiotherapy

AWARDS AND CREDENTIALS

- AICTE IDEA Lab
- 4-star rating from IIC-MHRD Innovation Council, New Delhi
- ATAL Ranking Award –ARIIA 2021 ranked in the Excellent Band category
- Virtusa Campus Partner
- Winner of Unisys Innovation (Y13) 2022
- Winner of TCS Inframind
- Winner of Smart India Hackathon -2022
- Winner of Virtusa Jatayu - 2022
- Winner of AICTE Lilavati Award - 2021
- Edufuture Excellence Award e-campus Award from Zee News - 2021
- Best Engineering College from National Educational Excellence Award
- Data Quest ranked in 46th position among top 100 Technical schools overall in India 2021-22

CENTRE OF EXCELLENCE

Established 17 Center of Excellence to provide skill oriented 90+ Associate level International Certification courses

IBM, Google, ePLAN, Microsoft, AUTODESK, Texas Instruments, FESTO, cisco, amazon web services, SIEMENS, Tally, DELL EMC, virtusa (Accelerating Business Outcomes), PEGA

OUR MAJOR RECRUITERS

TCS, CTS, UR, UNISYS, MICROCHIP, virtusa, Kaar (In Pursuit of Excellence), ZOHO

PLACEMENT RECORDS

Record breaking Achievements in Placements

1000+	1100+	1000+
Students Placed in 2019-20	Students Placed in 2020-21	Students Placed in 2021-22

www.smvec.ac.in

Explore The Space
(Promoting STEM Education & Space Exploration awareness in Schools & Colleges across Geographies)

Career Opportunities in Space & Allied Industries

- STEM Education
- Internships
- Space Industry

Curtain Raiser Edition - 1

PREFACE

V. Sumitrra Devi

Dear Reader

Greetings to you from " Explore The Space " !

We are pleased to present this booklet, " **Career Opportunities in Space & Allied Industries** " to you.

Our sincere thanks to ISRO for giving us the recognition as - " ISRO Registered Space Tutor ". We are sure that will be a great encouragement for us to go further in our mission of " Space Education for All ".

To be precise, Opportunities in Space is like Space ! Yes, it is ***big*** and ***expanding..***

Space Industry provides opportunities for many different occupations - Engineers, Scientists, Technically skilled personnel, Creative Writers, Media and Communications people etc. This booklet is a Curtain raiser for bigger programmes that will follow.

Our Sincere thanks to **Dr. Venkatachalapathy, Mr. Ramasamy, Prof. Shakila Devi, Dr. Nancy Johnson, Dr. Jaydeep Mukherjee and Mr. Tim Dyer** for sharing their views as articles / opinion.

Our thanks to **Sri Manakula Vinayagar Engineering College and Apex Solutions Ltd.** for their support to the project. We invite you to share your valuable feedback and inputs by email to us - **info@explorepace360.com**

Cheers and Good Luck !

Prof. V. Sumitrra Devi
Chief Administrative Office
Explore The Space
www.explorespace360.com
info@explorespace360.com

03.09.2022

Career Opportunities in Space & Allied Industries

Explore The Space

Promoting STEM Education & Space Exploration awareness in Schools across geographies

An ISRO Registered Space Tutor

CONTENTS

"Explore The Space", Chennai, India, is an educational venture and an NGO working to promote awareness on Space Sciences and Technology among Schools and Colleges through seminars, quiz programmes, study tours and research. ETS connects Institutions and Industry through its programmes.

Resource Team

R. Srinivasan	V. Sumitrra Devi
V. Shakila Devi	S. Ramasamy
V. Ramamoorthy	R. Kailasam
V. Chandrasekaran	Shiv Rawat
P. Nandagopal	Madhusree Daityari
Dr. Sudipta Narayan Roy	N. Shankar
S. Narendra Kumar	D.V. Venkatagiri
Prafull Mokashi	T. Karthik Babu
Prasanna Venkatesh	K. Balachander
Srinivasan Aravind	Dr. A. Patanjali Sastri

Acknowledgement

We thank various Government departments, Private Companies, Subject experts and other Consultants who have contributed in making this publication.

Disclaimer

The information provided in this publication has been gathered with lot of efforts and due dilligence. However, readers are advised to make their own assessment in coming to have any relationships or commercial transactions with the companies / personalities mentioned in the bulletin.

Azadi Ka Amrit Mahotsav is an initiative of the Government of India to celebrate and commemorate 75 years of independence and the glorious history of it's people, culture and achievements.

India became an independent nation on 15th August 1947. Today, it is a country with a population of 121 crores, and a democratic republic.

India has emerged as the fastest-growing major Economy in the world and is expected to be one of the top three economic powers in the world over the next 10-15 years, backed by its robust democracy and strong partnerships.

Fear to Gear - Facing Interview without Fear

Nancy Johnson
Resource Person
Azim Premji University
Bengaluru

As the title goes, fear comes following anxiety. Anxiety is one of the normal emotions anyone could experience. It is a worry that attacks before the challenges are faced by mere assumptions in the negative side of thoughts. What if this happens? What if I do not get through this? What if I forget this, that, etc.,

Eliminating "What if" and focusing on the preparedness for the Interview may avoid pessimistic thoughts to the maximum level. This tends to build more confidence and an attitude of facing challenges in a positive way.

Most common reasons for fear during interviews and how to overcome the anxiety:

(a) **Getting prepared for the interview at the last minute is stressful.** The day before the interview must be peaceful where one need to focus on relaxation. Listen to good music that makes you feel lightened or go for a long breezy walk.

(b) More distractions and diversions during the preparation stage can move your thoughts mixed and clarity may diminish. Never defocus your thoughts while preparing for your day. Ensure your days are well spent by learning well.

(c) Unrealistic expectations from within. Be prepared for the worst as well. This will help you to walk through failure and focus to be better next time. Every moment in life is a learning.

(d) Focusing more on the offer than focusing on the building one's strengths. Know your brand well. You are the best seller of you brand.

(e) Selection of Interview attire the day before the interview. An attire that causes discomfort may lead to mood swings and nervousness during the big day. Ensure to have good number of trials on your attire and practice movements as well.

(f) No vision of goal. **Everyone needs to have a goal come what may**. It can be small or big, but a goal must be set. Without knowing the destination, how does one start the journey? Fix your goal and work towards your goal.

(g) Not knowing about oneself. If an interviewee is asked to talk a few words about himself or herself, most of them say no more than the name, qualification, and hobbies. There are more achievements and credits to talk about oneself. Feel proud and excited to talk about yourself. This not only allows the interviewer to know more about you, but it also allows you to get self-motivated. List down all you need to talk about yourself and practice. Make it natural.

(h) Never bring in any fake personality of yours. This may lead to lots of confusion during discussion and will end up in nervousness.

(i) Get to know for what role you have applied for and a thorough preparation on theresponsibilities and skills required for the same is mandatory. Be assured that you have done a good homework on the same.

(j) Late arrival to the venue. Make sure to figure out the logistics and direction to venue at least a day before to ensure that you reach the venue 30 minutes prior to the said time. This helps you to relax and calm yourself before the show. You need time for self-talk which helps to perform well without fear.

(k) Make a checklist of all that are required to carry on the day of interview and ensure all are packed and ready.

(l) These days, most of the interviews happening virtually, one must be ready with acoustic arrangements and good network for a seamless interview process. Just because it is virtual, never be casual. Have the same kind of preparation right from your attire to the skill you require to update to make yourself eligible for the role you are applying for.

(m) Have good and sensible interaction with your interviewer and enjoy the phase. It is the self-responsibility; one needs to adapt to overcome anxiety and fear. Interview is a casual process for the well-prepared person. One need not worry about what the Interviewer or the group of people may evaluate or judge about. Sharpen your confidence and reduce your performance anxiety. Be far from being social phobia. It is natural for any human to feel anxious about. But, with good readiness, one can overcome nervousness.

So, gear up and charge yourself up!
All the best for all your future endeavors!

Choose your space- pack of Opportunities !

Prof. Ar. Shakila Devi
Architect, "Thalam" Architecture and Planning Consultancy Services, Madurai, Tamil Nadu

The curiosity and explorative nature is inborn to every human being on Earth. Believe it or not, our journey towards space exploration starts from our early childhood.

Listening songs to the moon and stars, playing with origamy planes and rockets, flying kites to reach the endless sky, ancient Indian cosmology from the vedas that have verses on the endless nature space, the astrology of marking events to the spiritual thoughts of relating ourselves to the universe. All of these show our attempts to demystify the dark and endless expance of the universe.

Though basic knowledge of space science in knowing our universe is imparted from the school days, there are very few who really explore and grasp the opportunities in this sector.

The vision of the Prime Minister, Government of India on Space Exploration to reach every common man has been gaining impetus through various programmes initiated to support private sector participation, research, financing startups to make in India and encouraging students at both schools and colleges through many awareness programmes, scholarships and innovation competitions. The increase in the number of organisations and companies in both public and private sector is bringing great career opportunities in various specialisations in space industry.

Students graduated from any discipline and can choose a career from the different realms of the space sector ranging from Astronomy, Space Technology, Space Research, Space Laws, Space Architecture, Space laws, Space Medicine and Psychology to many other fields.

The time is just right to put the aspirations to realisations and reap what is sowed !

For career opportunities in ISRO, please check ISRO website www.isro.gov.in

Computer Programming Languages & Space Exploration

S. Ramasamy
Senior Executive Member, Computer Society of India,
Head - IT, Great Lakes Institute
of Management, Chennai

The modern digital computer has been fundamental to the space exploration program. Computers have pro-foundly affected almost every aspect of space technology. Computers are an important asset when it comes to space exploration technology because with their help researchers understood the secrets of the creation of the Universe.

Today, almost everything in space exploration is done with computers. Computers have also lead to many major breakthroughs in space research. From designing spaceships to space photography, almost everything is done with computers.

GREAT LAKES
INSTITUTE OF MANAGEMENT, CHENNAI

Computers have strongly affected almost every aspect of space technology, including spacecraft design, simulation, and mission control, gathering and processing of data generated by the spacecraft. Indeed, the evolution and growth of computer technology is suggestively parallel to the growth in space technology.

The **C programming language** is the language of choice for a majority of spacecraft applications. It has a long legacy of being a trustworthy language for space missions. C is popular for embedded systems, satellites are embedded systems, therefore C is popular for satellites.

The hard work and dedication of Space scientists who worked on the first rock samples and tracked weather patterns for launches, means there are now massive amounts of data. Data Science and tools play a very important role here

INNOVATION IN ENGINEERING

"Innovation comes from people who take joy in their work and imagine the future"

Dr. V.S.K.Venkatachalapathy
Director cum Principal
SMVEC

In engineering studies, the multi disciplinary concept in New Education Policy 2020 has colossal value in transforming the students into competent industry ready graduates. With this as an objective, we have structured 4.0 industry ready curriculum and syllabi by involving industrial experts. **The emerging areas such as Cyber Security, Virtual and Augmented Reality, IoT, Artificial Intelligence and Robotics, Machine Learning, Big Data Analytics, Automation, Embedded Systems, Networking etc., were incorporated in the syllabi pertaining to all the departments.**

To make our Students Globally fit,we have established 17 Centre of Excellence in 80,000 Sq.ft at a cost of 15 Crores to provide 90+ Associate level International Certification courses from IBM, Google, Cisco, Microsoft, Autodesk, Texas instruments, Festo, Bentley, Schneider Electric, Amazon web services, Siemens, Tally, DELL EMC2, Harita Technery, PTC, LN an Excellence in Technology, Didactic solutions which are highly demandable and expectations of industries.

SRI MANAKULA VINAYAGAR
ENGINEERING COLLEGE
(An Autonomous Institution)
Puducherry - 605 107

Further, with the assistance of grants received from AICTE, the institute established IDEA Lab which houses 3D Printer, Laser Engraver and Cutting Machine, Vinyl Printing and Cutting Machine, PCB Marking and Engraving Machine, Wood Router etc., This IDEA lab acts as a catalyst to enhance student's skills such as problem-solving, critical thinking, time-management, self-management, communication and writing, analysis and research methodologies,

INNOVATION IN ENGINEERING

"Innovation comes from people who take joy in their work and imagine the future"

team work, and other versatile skill sets to inculcate employability skills along with entrepreneurship skills. Besides the above, we have signed MoU with Virtusa-Java full stack, PEGA University Program, Wipro Talent Next, PLM, TCS-CSBS etc., to meet industry requirements. We have also established Institute Innovation Council (IIC) where students are given training under Design Thinking, IPR, Entrepreneurship Development Program and Incubation.

Outcomes:

- **Winners of National Level Innovation contests like Smart India Hackathon, Virtusa Jatayu, Unisys cloud2020, TCS-Testimony, Hackquest, EngiNx, Kore.AI Hackathon etc., consistently.**
- Resulted in placement with higher packages.
- 90% of our students is getting placed in reputed multinational companies every year.
- 66 design patents were granted and 54 patents were published.

We are proudly say, SMVEC imparts Innovation in Engineering curriculum, a new venture providing solutions to the changing demands of society and promote human well-being.

"Do Innovate to provide solutions to the challenges around us"

"India is exciting, Communication is the key for bigger success"

Tim Dyer
President, Elcon Precision Inc
San Jose, USA

What are the major technology breakthroughs / advancements that you have seen in your Company / Space Business in the last 5-10 years.

a) Ion engines in space craft and micro satellites have created opportunities. **b)** New and advanced non-contact inspection equipment is less costly and has enabled us to improve quality. Systems like optical CMMs and digital X-Ray systems. **c)** SPC Software has improved and is easier to use, also enabling us to determine risks and process stability **d)** Direct imaging systems for photolithography enable us to make small high purity refractory metal (Tungsten, Molybdenum) components for joining and brazing hermetic assemblies.

What is your opinion on Indian Market ? The Indian Market is very exciting. It offers lot of opportunities for a company like us and we look forward to working with Indian Customers & Suppliers.

"Hands-on Collaborative project is essential"

Dr. Jaydeep Mukherjee
Director
NASA, FSGC, USA

From my experience with school and college students in Florida, engaging in hands-on collaborative project is essential for the overall development of a student. Hands-on collaborative projects are those where the students build something, using their knowledge of science, mathematics, engineering and technology. The students should be from a mixture of various backgrounds. Some of the students should be focused on sciences and some on engineering. In the real world, especially for projects in outer space, science leads the mission but most of the work is done by engineers. Sitting in a Class room and getting 90% or 95% does not mean anything if the students cannot apply their knowledge to the real world.

Latest Trends in Management

Prof. Kulvinder Kumar, Controller of Examination,
Coordinator IIRS – ISRO Nodal Centre Computer Labs In charge,
DAV Institute of Management, NH III, N.I.T, Faridabad -121001

With significant and fast changing **techno-savvy** leadership, employees and technology, it is an unavoidable need to ensure that trends in management be implemented dynamically by understanding the role of inclusive and servant leadership, globalization, and changes in employment market. It requires not only to work on **ever-changing** risk factors, emotional intelligence, ethical management, but also requires support improvements for enterprise decision making efficiency to be implemented as a discipline.

There is constant thrust for coping up with **Digitizing** which is altering the business models and shift in organisational culture. For moving forward to the next crest of business management proficiency, it has become necessary that existence of open source change and digital communications be realised. Training for employee engagement, smart work, income distribution, demographic changes, technological changes on how work is undertaken and technological changes on the employment market are also an analytical trends being followed by management. It has become evident that following latest trends in management must include some of the most significant **methodologies** like emerging corporate management best practice change, studying the broadening applications of actuarial science, practice of business management trends for leading remote teams and that it all should become a continuous process. While analysing the trends, both real time and historic data plays key role and thus none can be undervalued.

Incorporating **SDG** goals like sustainability goal in Climate change, Gender and racial inequality in the workplace affecting working and opportunities should be high on any manager's agenda. Besides, working on physical health by using ergonomically designed infrastructures which ensures physical health, focussing on inequalities can improve mental health of employees and thus lead to successful gains. Developments in areas like energy and healthcare can lead to huge infrastructure and innovation which further can change lives of the people. There should be constant and consistent strive for building up nation which begins with strong and dynamic management.

"Stamp with STEM"

S. Balagurunathan
Science Writer, NCERT & Times of India Awardee

Science is a collection of knowledge about natural world. Technology is the application of knowledge in manufacturing things. Science & Technology has made life comfortable and secure. In 21st century a new technology shift has happened. Especially in the pandemic period demand for automation was increased to attain safety standard. Like pandemic period in space travel also lot of automotive processes could be executed. To carry out that exercised we need stem scientist.

Space is a booming industry around the world – current estimates predict that the revenue generated by the global space industry could increase to over $1 trillion annually by 2040. For space tourism in near future re-entry launch vehicles and re-usable Launch Vehicles and micro satellites are going to be used and designed under economic consideration.

How to become STEM – Aspirant : General suggestions for any UG / PG

1. Concepts and application in crore subjects.
2. Gather skills in coding & software
3. One or two internships in winter / summer school
4. Final year project at research institute
5. PG Level entrance exams (GATE /GRE/INAT/JAM/JEST)

INTERNSHIP: STEM requires Inter-disciplinary approach and working collaboration so students can do internship at

1. VSRP – Visiting Students' Research Programme
2. IISER – Indian Institute of Science Education and Research and is possible in IIT, IISC etc.,

Finally, try to become a data collector, because data is the king. A data scientist really is a scientist at heart.

- Scott Belereau

Space Exploration Needs Greater Cooperation

D.V. Venkatagiri
CEO, Explore The Space

The launch vehicles (Rockets) and the Satellite programmes all over the world have made huge progress, ever since the first artificial satellite (Sputnik 1) was launched by the USSR in 1957. Thousands of satellites have been positioned into orbit around the Earth by many Countries. Earth observation, communication, navigation, Biomedical research, weather monitoring, broadcast are some of the applications of Satellites, which is only growing by the day.

Indian Space Research Organisation (ISRO) has been playing a pivotal role in space exploration and bringing glory to the Country and helping its defence forces, government, society, and industry at large. Indian Government's budget this year for the Space Programme is almost Rs. 14000 crore – a number that is steadily increasing to support the increasing demands and ambitions of the sector.

This effort is the result of many years of hard work and sustained International business networking in India and USA done by our team.

A key learning for us is the need to emphasise further the importance of i) STEM education for Space Exploration, ii) global cooperation among countries in Space Programmes and iii) harnessing new technologies with continued research and development.

This booklet, **"Career Opportunities in Space & Allied Industries",** seeks to emphasis a very important aspect-cooperation among all stakeholders -Education Institutions, Research Bodies, Industries, Government, Space Agencies and NGOs - is required for greater penetration of the usage of space technology. Space offers a great opportunity to all of us. And it is up to us to make the best of it.

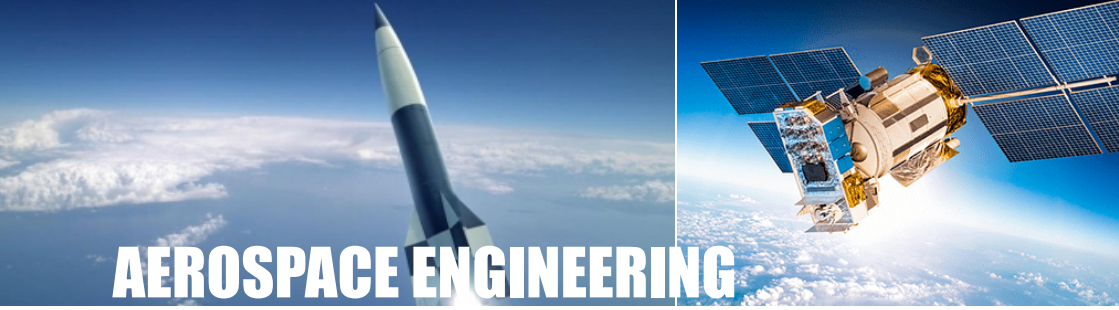
Career Opportunities in Space & Allied Industries

Information on Career options in the Space industry is something all students are seeking to know. There is **no one stop answer** to this arena of information which is much in demand. This edition of the bulletin and its forthcoming ones will focus mainly in giving the readers this insight with full clarity.

The different avenues of study (Aerospace engineering, Mechanical engineering, Applied sciences etc) have been covered in the forthcoming articles. Please note that only few have been covered in this edition – it's a long list, meaning that their great number of organizations waiting to absorb the graduates in.

Also, another very important piece of information – key Space organizations have opportunities for every field of education mentioned here. We have tried to cover other organizations also to provide an idea. Our resource team has mentioned only a very few organizations, both in the private and the public sector, in order to give an understanding of the opportunities available.

With that, we from Explore the Space unfold to you a sky, filled with opportunities for your sparkling career. All the very best.



AEROSPACE ENGINEERING

Qualification : B.E./B.Tech/M.S/M.Tech

PUBLIC SECTOR

National Remote Sensing Centre, Hyderabad - Continuous Airworthiness Manager (CAM)

(Need Engineering Degree in Aeronautical/ Mechanical/Electrical/ Electronics/ Avionics or hold an AME license issued by DGCA with 10 years of aviation experience)

Hindustan Aeronautics Limited (HAL), Aerospace Division Bangalore

Hindustan Aeronautics Limited is a Navaratna Status Public Sector Undertaking under the Ministry of Defence, Government of India with expertise to fabricate large size Aluminium Alloy rivetted structures, welded propellant tanks and water tanks. They recruit engineers in various disciplines.(https://www.hal-india.co.in)

PRIVATE SECTOR

Skyroot Aerospace, Hyderabad, Telangana - Aerospace Manufacturing

(Need B.E/B.Sc in Aeronautical Engineering, , knowledge in CAD modelling, drawings and machine design with experience in design analyses. Experience with SolidWorks, Auto Cad, GD&T)

role – to Identify manufacturing needs for new products in development. Strong knowledge on conventional (Machining, sheet metal, forming, forging, & etc) and new techniques like additive manufacturing. Knowledge on drawing interpretation and CAD Software like AutoCAD, CREO, solid works etc.

CIVIL ENGINEERING

Qualification : B.E./B.Tech/M.S/M.Tech

PUBLIC SECTOR

National Remote Sensing Centre, Hyderabad - Research Scientist, Junior Research Fellow

(Need ME/M.Tech **in Remote Sensing / GIS / Remote Sensing & GIS /Geoinformatics / Geomatics / Geospatial Technology / Spatial Information Technology** with B.E/B.Tech in Civil Engineering or M.Sc., in Agriculture)

Satish Dhawan Space Centre - SHAR, Sriharikota -

Scientists/ Engineers (Structural) - (M.E./M.Tech. in Structural Engineering/ Civil Engineering with Specialization in Structural Engineering with B.E. / B.Tech. in Civil Engineering)

PRIVATE SECTOR

SatSure Analytics India Private Limites, Bengaluru , India- GIS Analyst (Operations)

(Need B.Sc/B.Tech/M.Tech/M.Sc (GIS/Civil is preferred))
role -Good Knowledge of working with various geospatial data sets, programming knowledge is desirable, GIS modelling and spatial analysis, Create and Analyse spatial datasets using GIS tools, Generation of insights through maps and reports, Build, Update and maintain GIS databases. ***(https://indiaai.gov.in › startup*** › satsure)

Qualification : B.E./B.Tech/M.S/M.Tech

PUBLIC SECTOR

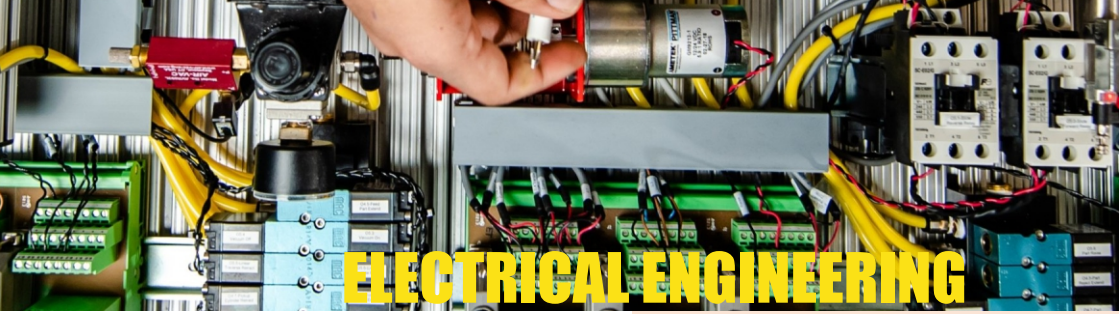
National Remote Sensing Centre, Hyderabad - Research Scientist

(Need ME / M.Tech in Remote Sensing / GIS / Remote Sensing & GIS / Geoinformatics / Geomatics / Geospatial Technology / Spatial Information Technology B.E / B.Tech in Computer Science / Computer Science Engineering /Information Technology/Geoinformatics)

Bharat Heavy Electronics Limited,, Bengaluru- BHEL is a Navarathna Company of Governmnet of India under the Ministry of Defence, which produces equipments for Defence Communication, Radars, Naval Systems, C4I Systems, Weapon Systems, Homeland Security, Telecom & Broadcast Systems, Electronic Warfare, Tank Electronics, Electro Optics, Professional Electronic Components and Solar Photovoltaic Systems, BHEL also provides turnkey system solutions. Civilian products from BHEL include Electronic Voting Machines, Tablet PC, solar-powered traffic signal systems and Access Control Systems. **They recruit Project Engineers, Trainee Engineers in the field of Electronics, Electrical Computer Science, Mechanical Engineering** (https://www.bhel.com)

PRIVATE SECTOR

AgniKul Cosmos Private Limited, Chennai (need Bsc -Electrical Engineering, Computer Engineering or Physics.) Positions - Embedded Systems Software Developer, Embedded Software Engineer – Linux, Mission Design Software Developer, ERPNext Developer. **SatSure Analytics India Private Limites, Bengaluru, India They are into space-based sensors, machine learning algorithms, Big data platform.** Geospatial software developer, Space Systems Engineer, Junior Data Scientist, Machine Learning Engineer are different positions they offer.



ELECTRICAL ENGINEERING

Qualification : B.E./B.Tech/M.S/M.Tech

PUBLIC SECTOR

Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram - Scientist / Engineer (Senior Division)

Space Applications Centre (SAC), Ahmedabad - Scientists/ Engineers (Electrical)
(Need M.E. / M.Tech. in Electrical Engineering with B.E /B.Tech. In Electrical Engineering)

Satish Dhawan Space Centre - SHAR, Sriharikota- Scientist/ Engineer (Power Systems) (need M.E / M.Tech in Power Systems with pre-eligibility qualification of B.E / B.Tech or equivalent qualification in Electrical & Electronics Engineering)

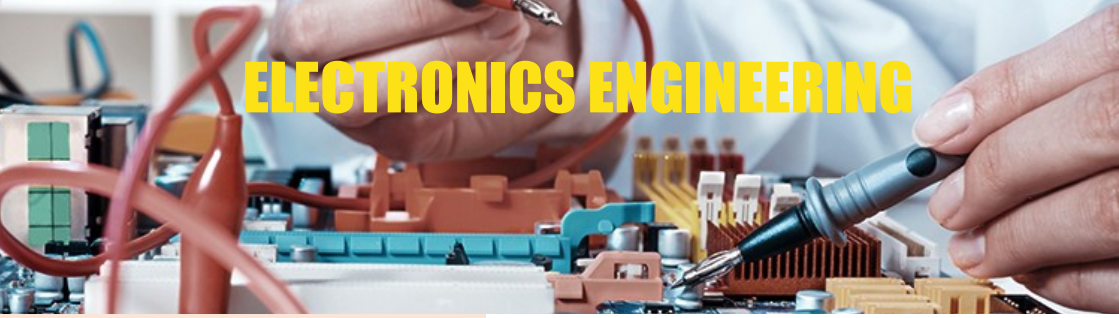
PRIVATE SECTOR

AgniKul Cosmos Private Limited, Chennai- Power Electronics Engineer - (Need B.E/ M.E Electrical Engineering)

Role - Create the fundamental power electronics architecture and associated software and hardware systems for Agnikul's vehicle, Design AC-DC converters for both flight and ground systems. Design extremely compact AC-DC converters with a special focus on mechanical design.

Eaton, Pune, Maharashtra| Pixxel, Bengaluru, Karnataka | Space Machines Company, Bengaluru, Karnataka |Manastu Space, MumbaiManastu Space, Mumbai - Lead Engineer Aerospace

(Need BE, M.E Electrical Engineering, Mechanical, Hydro-Mechanical, Electro-Mechanical or Mechatronics Domain)



ELECTRONICS ENGINEERING

Qualification : B.E./B.Tech/M.S/M.Tech

PUBLIC SECTOR

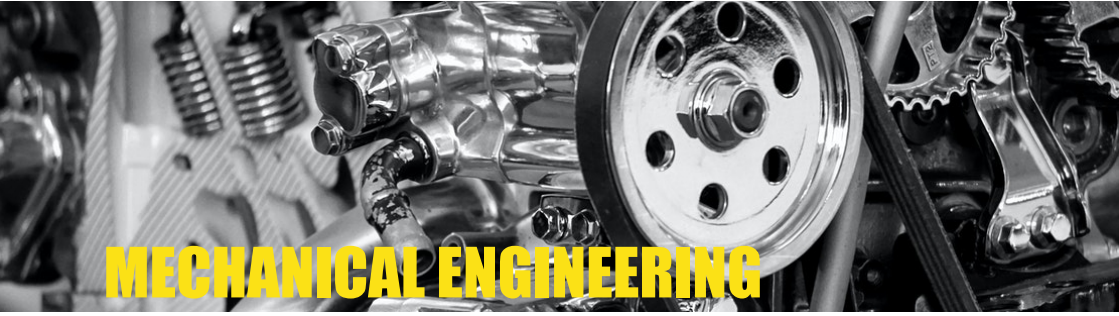
U R Rao Satellite Centre, Bengaluru- U R Rao Satellite Centre is the lead centre of the Indian Space Research Organisation (ISRO) responsible for design, development, assembly & integration of communication, navigation, remote sensing, scientific and small satellite missions. **-Scientist/Engineer** position is offered for graduates, post graduates, doctorates in the fields of Electronics, Mechanical, Computer Science, Electrical, Physics, Chemistry, Mathematics, etc. (need BE/B.TECH/M.E/M.TECH)

Will do Digital Signal Processing, Design of microprocessor based onboard systems, High speed data compression, Design, development and testing of digital circuits, FPGA & ASIC development and testing, Analog & Mixed Signal SIC Development & Testing.

PRIVATE SECTOR

Astrome Technologies pvt.ltd, Bengaluru Karnataka - Astrome makes Millimeter-Wave Wireless products through hardware -phased array antenna and software-beam-forming and beam-steering , designing satellite constellations and associated systems for various applications. They take interns and experienced persons.

-Wireless Communication Engineer - -Electronic Hardware Engineer (need B.E/ M.E Computer Science, with knowledge in abstraction and algorithmic thinking, debugging and logical reasoning, Web Application development, computer communications protocol, wireless concepts, working knowledge of NETCONF and YANG)



Qualification : B.E./B.Tech/M.S/M.Tech

PUBLIC SECTOR

Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram -

(Need a Ph.D, M.e/M.Tech.,B.E/B.Tech) will be doing ISRO – Indian Space Research Organisation, Government of India Various Organisations under the Department of Space offers job opportunities at various levels. There are various space research centres taking up Research fellows at different levels too. https://www.isro.gov.in)

- Guidance and control algorithm design and analysis for launch vehicle and reusable/re-entry vehicles, Control of propulsion systems, autonomous robotic vehicles. -Structural analysis of filament wound products with and without metallic liners, cryo tankages etc

-Scientists /Engineers (Mechanical)- (M.E / M.Tech or equivalent in Propulsion, B.E / B.Tech or equivalent in Mechanical) - will do Solid rocket motor design and performance analysis. -Metrology, CAM, facility management **Technical Assistant (Mechanical)** (need a Diploma in Mechanical Engineering) **Draughtsman (Mechanical)**

PRIVATE SECTOR

L&T Larsen and Toubro: L&T Larsen and Toubro - Aero Space and Defence Department, Mumbai; Heavy Engineering Department, Mumbai https://www.larsentoubro.com). L&T has worked on all the generations of satellite launch vehicles- SLV, ASLV, PSLV, GSLV. Today, L&T makes rocket casings, has a facility to manufacture advanced composites, honeycomb deck panels and is installing a special radar system at Sriharikota which has a 4000 km tracking range (Picture - S-band Radar supplied by L&T)

Bellatrix Aerospace Bangalore, Karnataka-Design Engineer – Pressure Vehicles-pressure vessel design and fabrication, structural analysis

METALLURGY ENGINEERING

Qualification : B.E./B.Tech/M.S/M.Tech

PUBLIC SECTOR

Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram -Scientist/ Engineer (Senior Division)-

(Need Ph.D in Metallurgy/Material Science(Ceramic Technology) ,M.E/M.Tech with B.E/B.Tech) role - will do Mathematical Modelling, Simulations of Metallurgical and/or Metal Forming processes; Development of Glasses and Glass Ceramics

Scientist/ Engineer (need M.E/M.Tech with B.E/B.Tech) | Role -will help in the Development of materials for aerospace application including ceramics, composites & optical glasses)

DRDO- Defence Research and Development Organisation (DRDO), Bengaluru, Karnataka

Scientist B (need Masters in Metallurgy with valid GATE Score)

PRIVATE SECTOR

Bellatrix Aerospace Bangalore, Karnataka- Scientist – Electrochemistry and Metallurgy

MTAR Technologies Limited Hyderabad, Telangana

MTAR is a precision engineering industry that has been associated with ISRO in the making of the Geosynchronous Satellite Launch Vehicle (GSLV) and Polar Satellite Launch Vehicle (PSLV). Space is one of their business segments which provides career opportunities.| https://mtar.in

RESEARCH IN SPACE SCIENCES

Research is an important component in knowing, exploring and working in the space industry. There are numerous research opportunities which are offered by both government and private organisations and Universities where the students can take up positions as research scholars that would lead them to become scientists.

Various Centres of ISRO - Indian Space Research Organisation
The oppurtunities of research are plenty .A few of which are listed below.

Vikram Sarabhai Space Centre (VSSC), Trivandrum, Kerala

Academic Project work : VSSC offers a limited number of opportunities for Academic Project Work (Main Project) to final year students undergoing MTech/ME Integrated Msc (Physics/Chemistry) & MSc(Physics/Chemistry/Meteorology/Space Science & Technology), M Sc Computer Science (Data Analytics), MPhil (Physics/Chemistry), BTech

Research Associate program : Space Physics Laboratory (SPL) , VSSC

Research in different disciplines of Atmospheric, Space, and Planetary Sciences like atmospheric boundary layer physics, atmospheric aerosols, trace gases, clouds, radiation budget, physics/chemistry/dynamics of the lower, middle, & upper atmosphere, numerical atmosphere modelling, vertical and lateral coupling processes, ionosphere-magnetosphere system, space weather, lunar & planetary explorations and modelling. ***(https://vssc.gov.in)***

RESEARCH IN SPACE SCIENCES

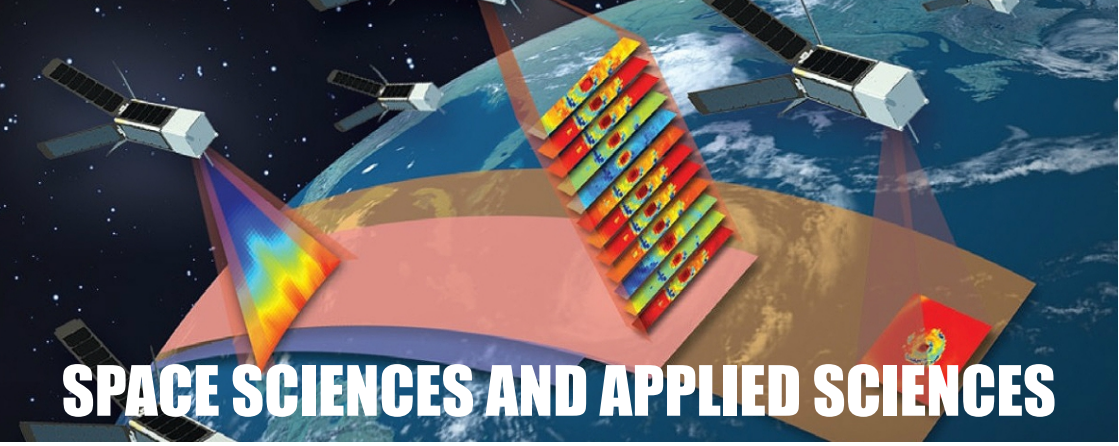
Department of Science & Technology (DST), Government of India

DST was established in May 1971, with the objective of promoting new areas of Science & Technology and to play the role of a nodal department for organising, coordinating and promoting S&T activities in the country. There are many programmes and proposals for which applications are invited .

A few of them are listed below

Innovation and STEM Demonstration ; Abdul Kalam Technology Innovation National Fellowship; SERB Research Scientist Scheme; Kishore Vaigyanik Protsahan Yojana (KVPY)-Mentorship and Scholarship support to pursue study in Basic Sciences;

Announcement for inviting Technologies /Innovation/ Idea for support under ASEAN-India S&T Development Fund ; Innovation of Science Pursuit for Inspire Research (INSPIRE) ; Mega Facilities for Basic Research and many more.(https://dst.ov.in)



SPACE SCIENCES AND APPLIED SCIENCES

Mainstream SCIENCE (Physics), Maths

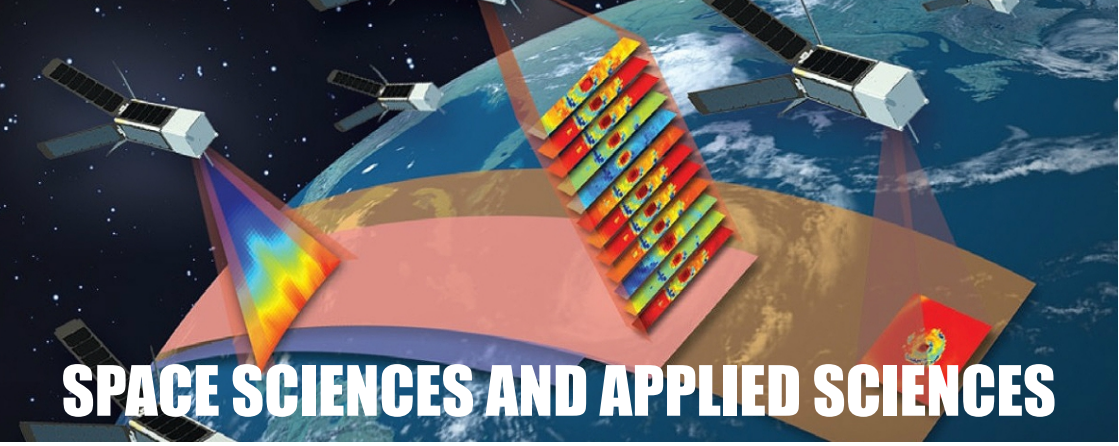
Most important for astronomy is to study physics and maths.There are many different fields of astronomy from the instrument building teams who work with their hands to the theoretical branches where mathematical ability and physical intuition is essential. In all branches of astronomy, and indeed life, good programming skills are invaluable. Perhaps the most essential ingredient is curiosity and the ability to search out answers.

To enter into astronomy you have to be good at general physics. Below is the list of institutes which offer research and career opportunities for students graduated in Physics and Mathematics in the space industry.

Indian Institute of Astrophysics, (Bangalore)
Indian Institute of Science, (Bangalore)
Raman Research Institute, (Bangalore)
Inter-University Centre for Astronomy and Astrophysics, (Pune)
National Centre for Radio Astronomy

Most of these institutes offer opportunities to the aspiring candidates based on a joint entrance test followed by an interview. The minimum qualification required for appearing for the entrance exam is a Master's degree in Physics. Some of these institutes accommodate engineering graduates as well.

If you want to pursue a research career in abroad, you will need to appear for GRE, TOEFL & Advanced GRE examinations. On the other hand, if you are planning to pursue a research career in India, you may join IIA, IISC, IUCAA (Pune), for which you will have to appear for Joint Entrance Screening Test (JEST), conducted annually.



SPACE SCIENCES AND APPLIED SCIENCES

VISITING STUDENTS INTERNSHIP PROGRAMME

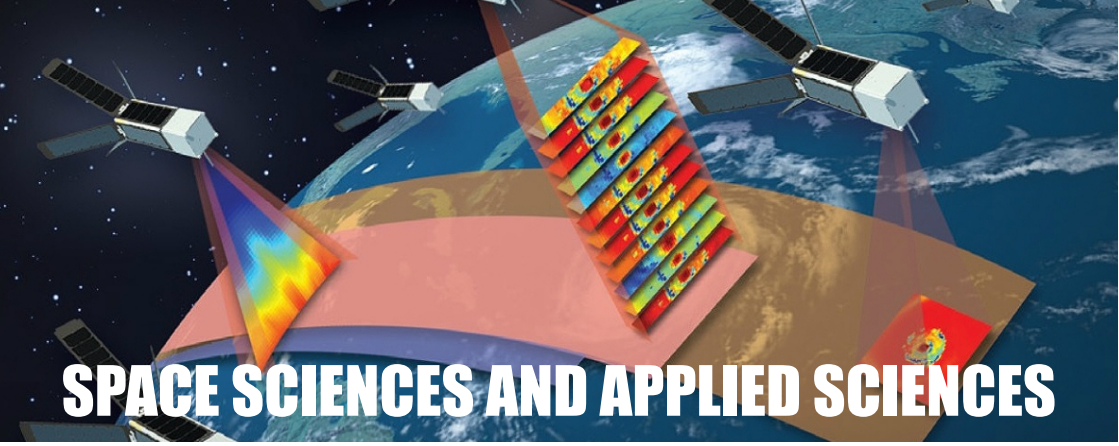
The Internship Programme is conducted by the Indian Institute of Astrophysics (IIA) with the aim of promoting interest in Scientific Research among other Institutions/University/College students. Candidates selected for this programme, will work on specific projects under the supervision of the academic staff members of IIA. The program runs throughout the academic year Applicants must have consistently good academic record with more than 55% marks in Mathematics and Science from 10th standard onwards.

Ph.D. Programme

The qualifying degrees for this programme are M.Sc/Integrated M.Sc (Physics, Applied Physics, Engineering Physics, Applied Mathematics, Astronomy, Electronics, Photonics, Optics), M.E./M.Tech and Integrated M.E/M.Tech (Applied Physics, Engineering Physics, Computer Science, Electrical, Electronics, Instrumentation, Photonics, Optics, Opto-Electronics, Radio Physics & Electronics), M.Phil (Applied Physics, Instrumentation, Photonics, Optics, Physics).
Students passing the JEST exam will be interviewed in May / June.

Job Opportunities: An acute need for young scientists in the field of Astronomy is present. The following possibilities are open for a career for a physics / mathematics / engineering graduate with a specialization or a Ph.D. in Astronomy & Astrophysics

- **Research Scientist**
  Several research institutes and government organizations employ research scientists in various academic grades for research-oriented programmes.



SPACE SCIENCES AND APPLIED SCIENCES

The Department of Astronomy, Astrophysics and Space Engineering (DAASE)

The Department of Astronomy, Astrophysics and Space Engineering (DAASE) was established in December 2015 as an interdisciplinary division at IIT Indore, focusing on a wide range of research topics in the domain of Astronomy and Space weather and navigation studies.

Programme : MSc Astronomy: The entrance to this program is through the JAM (physics) examination. A master's in Astronomy opens up unique possibilities for students. Chief among these are careers in Data Science (which requires a combination of skills in Statistics, Analysis, and data handling) and instrumentation.

MS (Research) + Ph.D. dual degree in Space Sciences and Engineering

A four-year bachelor's degree (BE or B Tech), or a two years or five years integrated master's degree (MSc or MTech or ME) with first class or first division (as decided by the awarding institute/university), in Physics, Applied Physics, Astronomy, Astrophysics, Space Science and Engineering, Earth and Atmospheric Science and Engineering, Remote Sensing, Engineering Physics, Aerospace Engineering, Aeronautics, Electronics and Communications Engineering, Electrical Engineering.

Qualifying Examination (QE): (a) International Students: Valid score of TOEFL or IELTS. (b) Indian Students: Valid GATE qualification in the relevant disciplines.
Relevant GATE papers: AE, EC, EE, PH, XE And interview: University of Kent, United Kingdom.
Programme : Astronomy, Space Science and Astrophysics - MPhys
https://www.kent.ac.uk

FOR STUDENTS

Atal Tinkering Laboratories (ATLs)

With a vision to 'Cultivate one Million children in India as Neoteric Innovators', Atal Innovation Mission, Government of India, is establishing Atal Tinkering Laboratories (ATLs) in schools across India. The objective of this scheme is to foster curiosity, creativity, and imagination in young minds.

Dare to Dream programme for Students - a tribute to the visionary, the legendary former President and eminent scientist, Dr APJ Abdul Kalam

Dare to Dream 3.0 is an idea-based open challenge to promote the innovators and startups of the country and enable them to dream big without any limitations, putting their ideas into tangible results. The winners will be declared after a comprehensive evaluation process by two level committees i.e Domain Expert Committee (DEC) and Independent Expert Committee (IEC). Award money of upto INR 10 lakhs for startups and INR 5 lakhs for individuals will be provided to the respective winners. Select proposals will also be given a chance to actualize their vision and ideas, and contribute to the development of a robust defence ecosystem. (https://www.drdo.gov.in and https://rac.gov.in)

Internships for Students

Semi-Conductor Laboratory (SCL) offers Internship/ Project Work to B.E/ B. Tech and M.E/ M. Tech or equivalent course Students allowing them to fulfill their Course Study Requirement under highly experienced and trained Scientists/ Engineers.

DRDO - DEFENCE RESEARCH & DEVELOPMENT ORGANISATION (DRDO)

Defence Research and Development Organisation (DRDO) is the R&D wing of Ministry of Defence, Govt. of India, which strives in strengthening India's defence technologies and systems. It has a network of more than 50 laboratories which are engaged in developing defence technologies covering various disciplines, like aeronautics, armaments, electronics, combat vehicles, engineering systems, instrumentation, missiles, advanced computing and simulation, special materials, naval systems, life sciences, training, information systems and agriculture. DRDO Recruits scientists those who have completed their BE / B. Tech from all colleges. For applying to the post of Scientists in DRDO, the graduates should have a valid GATE Score, to a level specified at the time of advertisement. DRDO is a feather on the cap for India's defence resources. Students can make their dreams a realisation with the plentiful opportunities provided by DRDO and be a part of our nations pride.

SCIENTIST 'B'IN DRDO: Disciplines – Electronics and Communication Engineering, Mechanical Engineering, Computer Science and Engineering, Electrical Engineering, Material Science and Engineering, Metallurgical Engineering, Chemical Engineering, Aeronautical Engineering, Civil Engineering , Instrumentation Engineering, Naval Architecture, Environmental Science and Engineering. (Physics, Chemistry, Mathematics, Material Sciences, Atmospheric Sciences, Microbiology, Biochemistry (need master's degree and valid GATE score)

Qualification:

At least First Class Bachelor's Degree in relevant professional engineering degrees from a recognized university or equivalent. And also fulfil ONE of the following additional requirements: 1. GATE Qualification: Valid GATE score in relevent field 2. Minimum 80% aggregate marks in EQ degree, if done from an Indian Institute of Technology (IIT) or National Institute of Technology (NIT)

(https://www.drdo.gov.in and https://rac.gov.in)

Atal Innovation Mission (AIM) , Government of India, supports entrepreneurship and innovation in all parts of India.

Atal Incubation Centre (AIC) Scheme under AIM has supported more than 15 startups working in Space Tech and related industry across India. The focus areas for these startups are in UAV, Drone and Surveillance Equipment, Aero tech, Air Taxi, Space debris tracking and monitoring service, space education among others.

ANIC-ARISE program of AIM in association with Indian Space Research Organization (ISRO)

a. Propulsion – Green propellants, Electric propulsion, advanced air-breathing.

b. Geo-spatial information using Machine Learning /Artificial Intelligence (ML/AI).

c. Application of robotics, Augmented Reality/Virtual Reality (AR/VR) techniques.

6 start-ups are supported with grant-in-aid up to Rs. 50 lakhs over a duration of 12 months.

(source :https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1796968)

One Stop Solution For All Your Digital Needs!!!

APEX SOLUTIONS LTD

Contact Details:

+91 0863-251-2053

info@apexsolutionsltd.co.in

Visit us:
www.apexsolutionsltd.co.in

ABOUT US

Apex is a comprehensive ePublishing and digitization company whose aim is to ease the burden of document management and enabling businesses and industries to achieve operational efficiency.

We began our journey in 1998 at Guntur, India, and with over two decades of hands-on experience in this field. Our team has 500+ experienced personnel spread across five global locations.

Certified

ISO 9001:2015 Certified Company

OUR SERVICES

- Publishing Services
- Digitization
- Geospatial Services
- 508 Compliance/Accessability
- Digital Marketing Services

WHY CHOOSE US

Quality is in our DNA, We cautiously strive for betterment in our process, from start to end.

- DEFINE THE PROJECT
- MEASURE
- ANALYZE
- IMPROVE
- CONTROL & VERIFY

International Conference on

Global Trends in Traditional to Space Ceramics (GT-TSC'22)

on the occasion of

86th Annual Session of The Indian Ceramic Society

74th Annual Session of All India Pottery Manufacturers' Association

48th Annual Session of Indian Institute of Ceramics

Jointly Organized by

The Indian Ceramic Society

Dept. of Ceramic Engg., IIT-BHU

Endorsed by: International Ceramic Federation, Italy

December 8-9, 2022

at

Department of Ceramic Engineering

IIT-BHU, Varanasi, UP

Explore The Space
(Promoting STEM Education & Space Exploration awareness in Schools & Colleges across Geographies)

LAUNCHING SOON

International Online Certificate Course on – STEM and Space Technology & Industry

A. Benefits of the Course

a. Develops a good understanding of Earth, Solar System Space Technology
b. Encourage Cooperation and Understanding among youth across the world
c. Understanding the Importance of Satellites in our day-to-day lives
d. Useful information on Space Careers for students.
e. Sparking youth's interest in Space Science & Technology

B. All Chapters

Chapter 1 : Solar System
Chapter 2 : Evolution of Modern Space Studies
Chapter 3 : Rockets
Chapter 4: Satellites
Chapter 5 : Space Application
Chapter 6 : Space Exploration today and the future
Chapter 7 : International Laws and Economics of the Space Industry
Chapter 8 : Mysteries of Space
Chapter 9 : Stars on the Sky
Chapter 10 : Institutions for Higher Learning in Space

For students in the age group 14 to 18

Cost: $ 45

No.715A, Suite No.914, Spencer Plaza, Anna Salai, Chennai 600 002, Tamil Nadu, India
Mobile: +91 97901 86633 | Email: explorespace360@gmail.com

Explore The Space

(Promoting STEM Education & Space Exploration awareness in Schools & Colleges across Geographies)

ELCON PRECISION LLC

International Webinar Series on Future of Space Technology and Exploration "Materials for Planetary Exploration"

Edition 5 **Report** *June 23, 2022*

Dr. Mamta Rani Agarwal
Advisor - I
AICTE, Ministry of Education, Govt. of India, New Delhi

Tim Dyer
President
Elcon Precision LLC
San Jose, USA

Scott J. McCormack, Asst. Professor
Dept. of Materials Science & Engg.
Peter A. Rock Thermochemistry Lab.
University of California, Davis

D V Venkatagiri, CEO,
Explore The Space &
The Global Trade Driver, Chennai

"Multi-Disciplinary Approach & Convergence of knowledge will enhance Space Education and Exploration" says AICTE top Official

Promoting Space Education

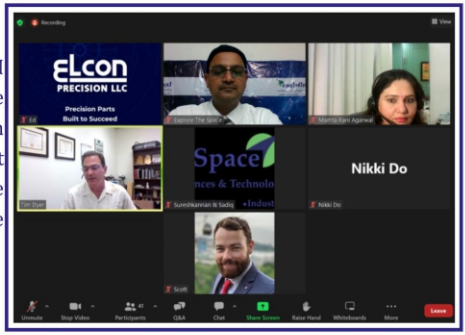
Inaugurating the 5th edition of the International webinar series on "Future of Space Technology & Exploration" organised by Explore The Space and Elcon Precision LLC., Dr. Mamta Rani Agarwal, Advisor-I, AICTE, Govt. of India, said,

"**m**ulti-disciplinary approach & convergance of knowledge will enhance Space Education & Exploration. AICTE is encouraging and research and innovation in Indian Engineering Institutions through many of its programmes. We congratulate "Explore The Space" and "Elcon Precision" for doing this programme."

Tim Dyer: Elcon is working on – NASA dart mission, SPACEX Star link, etc. An avid fan of science fiction like Star Wars, he spoke of the high technology that is essential for treating advanced materials. He spoke about deep space vehicles and orbit propulsion systems, and also compared both of them to get a better understanding of the advantages and disadvantages that both the systems offered.

Scott J. McCormack: On Earth, vehicles are required that travel faster than the speed of sound, and when doing so, heat their surfaes up to ~3000 degree C! In space, vehicles are required to provide thrust for months on end to reach destinations millions of miles away. On Mars, vehicles are required to descend into the Martian atmosphere and arrive safely on the surface. Most importantly, how does one implement the philosophy of "imagineering", the idea of playing in the realm of science fiction using physics, to push the boundaries of science fact, to develop materials of the future.

D.V. Venkatagiri: Explore The Space promotes STEM Education, spreads awareness about opportunities in the Space & Allied Industries and encourages students / youth all over the world to take up Space Technology as a career. It also promotes Industry - Institution relationships in the Space Industry. Emphasizes on global cooperation in the advancement of Space Sciences & Technology.



LINKING INDIAN ENGINEERING COLLEGES WITH OPPORTUNITIES IN THE GLOBAL SPACE INDUSTRY

- Space Technology
- Sensors
- Environmental
- Data Processing
- Precision Machining
- Artificial Intelligence
- Ion Engines
- Satellite Technology
- Additive Manufacturing
- Robotics
- Space Debris
- Space Weather
- Launch Services
- Planetary Missions
- Storage Batteries
- Propulsion
- Electrical Systems
- Advanced Materials
- Optical Systems
- Cyber Security
- Semi conductors
- Moon Landing & Missions

No. 715A, Suite No. 914, Spencer Plaza, Anna Salai, Chennai 600 002

Please Call: Phone: 044-48559743, 9790186633

Email: explorespace360@gmail.com | Website: www.explorespace360.com

NOTES

7th BENGALURU SPACE EXPO 2022

INTERNATIONAL EXHIBITION AND CONFERENCE

5 - 7 September, 2022 | BIEC, Bengaluru, INDIA

www.bsxindia.com

Shri. S. Somanath

Secretary, Department of Space & Chairman, Space Commission Government of India

In association with

Organised by

Confederation of Indian Industry

- Over 100 Exhibitors
- Partner - Australia
- Focus - UK
- Guest - Netherlands
- Workshops on Current Space Industry Opportunities

Key Participants

ETERNUS

Explore The Space (Promoting STEM Education & Space Exploration awareness in Schools & Colleges across Geographies)

HAL

Hical the highest reliability

FINE-LINE CIRCUITS LIMITED

GALAXEYE

GLAVKOSMOS

Godrej & Boyce Mfg. Co. Ltd.

GRAHAA earth.live.

The Global Trade Driver (An International Forum on Industry and Education)

TIMES MICROWAVE SYSTEMS AN AMPHENOL COMPANY

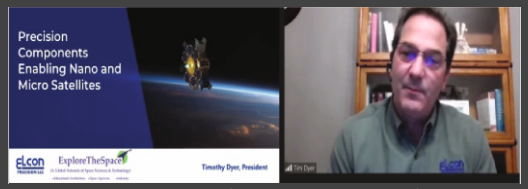
Unified

Please note: Front wrapper images (Top Left to Right) 1.Countdown for Launch of India's Radar Imaging Satellite PSLV-C49 2. International Space Station

Glimpses of Explore The Space

Raman-Armstrong Lecture Series on Space - Edition 1
Dr. Jaydeep Mukherjee, Director, NASA, FSGC, USA, along with Dr. G. Gopinath, Regisrar, Bharthidasan University, Tiruchirapalli - December 2018

Certificate Course on Introduction to Space Technology Jobs, Internships, Business Opportunities
by Prof. V. Ramamoorthy, Scientist, ISRO, Retd., PSCMR College, Vijayawada, August 2019



Promoting STEM Education & Space Exploration Awareness in association with St. John's English School, Bengaluru, Chieft Guest Mr. N. Sudheer Kumar, Director, CBPO, ISRO, Bengaluru on 05.03.2022

International Webinar Series "Future of Space Technology & Exploration" Advanced Materials for Space Exploration Vehicles - Edition 1- on 25th March 2022

Workshop – on stem experiments & Space Exploration
RKM saradha vidhyalaya model girls school, T.Nagar, Chennai - 27.4.2022

Explore The Space

(Promoting STEM Education & Space Exploration awareness in Schools & Colleges across Geographies)

"Explore The Space", Chennai, India, is an educational venture and an NGO working to promote awareness on Space Sciences and Technology among Schools and Colleges through seminars, quiz programmes, study tours and research. ETS connects Institutions and Industry through its programmes.

Explore The Space
#715-A, 7thFloor,SpencerPlaza,
Suite # 914,Anna Salai,
Chennai-600 002,TamilNadu,India
Mobile: +91 9790186633 |
Email: info@explorespace360.com |
Website: www.explorespace360.com