

in association with

UCDAVIS

**MatSci Innovations Inc.,
CA, USA**



Report

Indo - U.S. Youth Space Talent



A series of Programmes in Indian & U.S. Universities celebrating & identifying
Youth Talent and to promote Global Collaboration in Space Education, Research & Industry

Launched on July 10, 2023



Inaugurated by



**Dr. A.S. Kiran Kumar,
Former Chairman, ISRO**

"Science and Technology Cooperation between India and the U.S. strengthens our bilateral relationship, promotes economic growth and allows us to develop new and innovative technologies and products to address shared challenges. Space Exploration will help us address global challenges such as climate change, health, education, food, water and energy security. Both countries support cutting edge research and are building public-private partnerships that promote Science and Technology-based innovation and entrepreneurship.

This initiative to encourage and identify youth talent in Space Technology arena is a very commendable one.

Tomorrow's prosperity and peace depends on how we cultivate the youth of today."

Explore The Space

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



Special Addresses



Tim Dyer,
Executive Director,
Fralock Inc., USA &
President, MatSci
Innovations LLC, CA, USA

To be a space enthusiast you will need:

- Curiosity
- Imagination
- A willingness to learn
- Have a knack for Math and Science
- A person to share your passion about space
- Resources like star maps and some space books
- Be willing to work hard and study (one job is not enough...)



Prof. Subash Risbud
Distinguished Professor Emeritus
Materials Science and Engineering
UC Davis College of
Engineering, USA

UC Davis College of Engineering has excellent research facilities and encourages student collaborations. We have strong ties with the Industry and National Laboratories and we provide education for the future.



D. V. Venkatagiri, CEO
Explore The Space
Chennai

Indo-US Youth Space Talent is a program to foster collaborations with the Space Industry and Academia in the two countries and aims to promote youth talent in STEM and Space Technology.

“Space
Education
for youth
all over
the World...”

Space
Unites
the World”

Indo-U.S. Youth Space Talent

1



"Energy Solutions: Solar Cells and Alternative Fuels"

Cassandra Brayfield

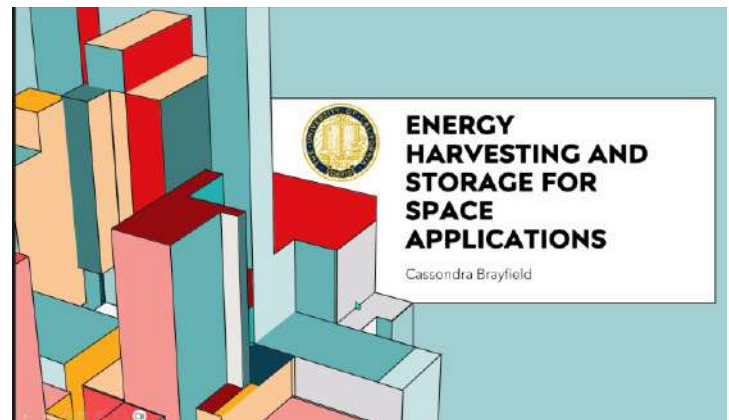
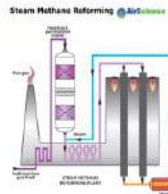
Ph.D Scholar,

UC Davis College of Engineering, USA

With the global market transitioning from fossil fuels to more carbon neutral methods of energy harvesting and storage methods such as alternative fuel production and solar cell engineering. This work discussed two methods for improving energy harvesting (via photovoltaic solar energy absorption) and storage (via synthesized catalysts which require relatively low applied voltage to produce fuels including hydrogen gas and liquid formate).

ISSUES WITH CURRENT ALTERNATIVE FUEL METHODS

- No Catalysts Used
- Require Large Amount of Energy
Steam Production, Electrolysis,
Safe Gas Storage



2



"The Biotic Future of Human Space Exploration"

Kevin Yates

Ph.D Scholar,

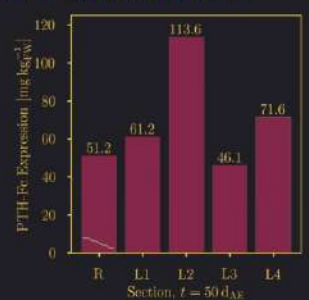
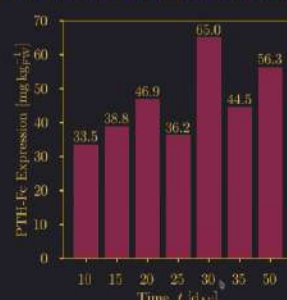
UC Davis College of Engineering, USA

The formalization of the field of space bioprocess engineering will allow biologically-driven technologies for LREs to be designed, realized, and managed. Metrics for evaluating these technologies and the training of researchers and workers in this specialized field are key to bringing concepts to implementation and integration into mission design.

About Me



Expression of PTH-Fc Varies Over Time and Per Leaf



3

4

Objectives of the Project

- Motivating Youth in India and USA to pursue Careers in STEM and Space Exploration
- Encourage New Collaboration in Space Industry, Education & Research between India & USA
- To Promote space Entrepreneurship / Start-ups
- Encourage Women Entrepreneurship in Space.
- New Avenues for Cooperation between India and USA
- Programs in University campuses in India and USA

Key Technologies that drive Space Exploration

Artificial Intelligence	Advanced Materials
Earth Observation	Plant growth
Data Collection	Deep Learning
Robots	Space Electronics
Space Debris	Rocket Landing
Autonomous Rovers	Space Electronics
Optical Communications	Satellite Data Process
Data Transmission	New Energy Sources

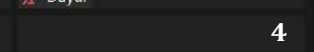
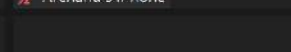
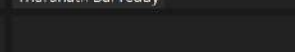
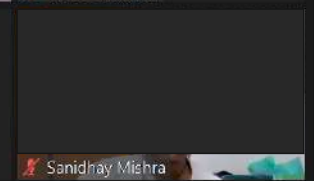
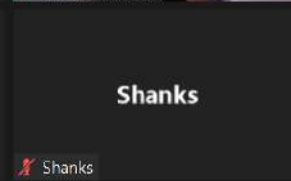
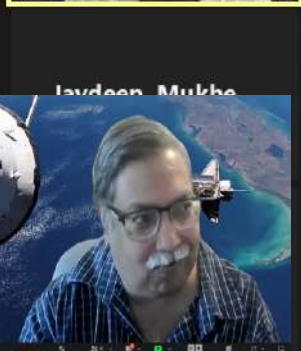
Indian Space Industry

- **ISRO's Leadership is Globally recognised for Cost - effective and accurate programmes**
- **There are over 400 private space companies in India**
- **India ranks fifth globally in no. of space companies**

U.S. Space Industry

- **NASA is a Global Leader**
- **The United States Government spent almost USD 62 billion on its space programme in 2022, making it the country with the highest space expenditure in the world**
- **USA has over 5500 Space Companies**

Proceedings of the Launch event



Indo-U.S. Youth Space Talent



Dr. Jaydeep Mukherjee,
Director,
NASA - FSGC, USA

The Artemis program is a robotic and human Moon exploration program led by the United States' National Aeronautics and Space Administration (NASA). The goal is to test technology on and near the Moon to help establish a permanent base camp on Mars and support future human missions to Mars. It takes about 3 days to reach the Moon as opposed to a minimum of 7 months to reach Mars. It is easier to test new technologies on the Moon as it will be faster to reach it.



There are many opportunities for India and USA to collaborate in Space Exploration missions

List of Institutions that participated in the webinar

- Ranaghat College, West Bengal
- Burdwan Municipal Hg. Sch, West Bengal
- University of Madras, Chennai
- M. S. Ramaiah University, Bengaluru
- IIT, BHU, Varanasi
- DAV Institute of Management, Chandigarh
- SD College, Palwal, Faridabad
- NIT, Patna
- MIT College, Chennai
- NRSC, Hyderabad
- SRM IST, Kattankulathur, Tamil Nadu
- Nehru Memorial College, Trichy
- NIT College, Agartala
- Crescent Institute of Science & Tech., Chennai
- Dr. MGR Edu. & Research Centre, Chennai
- Sathyabama IST, Chennai
- Hyderabad Instt. of Tech. & Management
- Anantha Lakshmi Inst. of Tech. & Sciences, AP
- Anurag University, Hyderabad, Telengana
- Srivatsal Gurugal Vidyalayam, Hyderabad
- AMITY University, Noida
- Vinayaga Polytechnic College, Kulithalai, TN
- University of California, UC Davis, USA

California Space Industry



California is a leader in the Space Industry. It is home to nearly one-third of all American space tech companies, and more than one in ten of those globally. In the last decade, California has attracted nearly half of space tech investment capital in USA.

America's best-trained and most-experienced aerospace and technology workforce lives and works here.

Some of the top Space Companies in California include -

- Space X
- Boeing
- The Aerospace Corporation
- Spin Launch
- Stealth Aerospace
- AAE Aerospace

California Space Industry is -

- Attracting and catalyzing new businesses, including international businesses
- Expanding existing aerospace and space businesses
- Expanding research and development in aerospace and advanced manufacturing Building more testing and launch capability



Tim Dyer, Kevin Yates, Cassie Brayfield and Prof. Subhash Risbud - Medals & Citations

GLIMPSES OF EXPLORE THE SPACE



Explore The Space participating at
Space Tech Expo, California, USA
in May 2022



Explore The Space was conferred the title
"ISRO Registered Space Tutor" at
ISRO Headquarters, Bengaluru – August 2022



S. Somanath, Chairman, ISRO visited our stall and signed the visitors record.
N. Sudheer Kumar, Director & K. Sathish Kumar, Asst. Director, CBPO, ISRO, Bengaluru
in the presence D.V. Venkatagiri, CEO, Explore The Space & The Global Trade Driver explained
"Global Space Business Bulletin" at Bengaluru Space Expo - 2022 (Sep. 5 to 7, 2022)

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Explore The Space is an International Educational NGO promoting awareness on Space Sciences and Technology, among schools and colleges through Seminars, Quiz Programmes, Study tours, Research & B2B meetings for Space Companies. Explore The Space is a Registered - "ISRO Space Tutor" and "NITI Aayog (Govt. of India)" NGO.

Explore The Space

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