



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



A Report on
ISRO START PROGRAMME
Organized by
Department of ECE and MADANAPALLE INSTITUTE OF TECHNOLOGY

Total No of Registered Participants: 44 (Students)

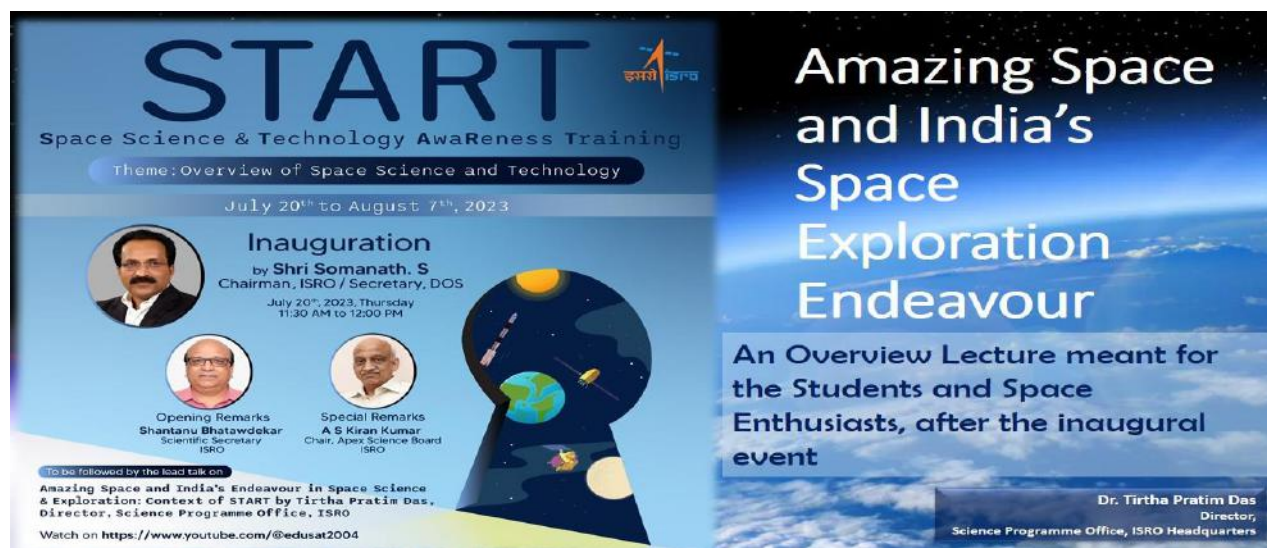
Submitted by: Dr. Nehru Kandasamy, Professor, Dept. of ECE

I am obliged to submit event report of Indian Space Research Organization START program. Madanapalle Institute of Technology and Science is the first private institution to act as nodal Centre for ISRO START program in Andhra Pradesh state.

Dr.Nehru Kandasamy has coordinated the online training course on “ **Overview of Space Science and Technology** “ under ISRO START programme conducted by Madanapalle Institute of Technology and Science during July 20, 2023 to August 07, 2023.

Madanapalle Institute of Technology and Science has submitted the Expression of Interest for Participating in ISRO START programme on 26.05.2023 with Institute registration number is - START23-1095-717107.The institution got approval for ISRO START program on 26.05.2023 from Indian Space Research Organisation. START co-ordinator’s interaction meeting with ISRO organising team is scheduled on 6th June 2023 (Tuesday) at 10:00 am through online mode. The registration for undergraduate and postgraduate students is open on 30.06.2023.

The inauguration session for ISRO START programme is scheduled on 06.06.2023 and it is inaugurated by **Shri Somanath.S** , Chairman, ISRO / Secretary , DOS, **Shantanu Bhatawdekar**, Scientific Secretary – ISRO , **A.S. Kiran Kumar**, Chair, Apex Science Board , ISRO



The Principal, Vice Principals, HOD’S, Dean’s and Students from Madanapalle Institute of Technology and Science & Viswam College of Engineering attended inauguration function in seminar HALL A, MITS as well as in online mode.



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



The session wise details as follows.

Space Science Technology & Awareness Training (START) Programme - 2023 Tentative Schedule

S.NO	Date	Time	Speaker	Topic
1	July 20, 2023, Thursday	11:30-12:30	Dr. Tirtha Pratim Das	”India’s Space Exploration Endeavour:Context of ISRO’s START programme
2	July 21, 2023, Friday	11:00 to 12:00	Dr. Suresh Babu	Space observations of Geosphere - Biosphere – atmosphere interactions and climate
3		15:00 to 16:00	Dr. P. K. Mohanty	Introduction to Cosmic Rays
4	July 24, 2023, Monday	11:00 to 13:00	Dr. Tarun Kumar Pant	Earth’s Ionosphere, Magnetosphere, Sun-Earth interaction and Space Weather
5		15:00 to 16:00	Prof Archana Bhattacharaya	Earth’s magnetic field & Geospace
6	July 25, 2023, Tuesday	11:00 to 12:00	Dr. R.P. Singh	Introduction to Remote Sensing of Earth and planetary bodies
7		15:00 to 16:00	Mr. Sheeju Chandran	Rockets to access the Near-Earth Space: Sounding Rockets & Launch Vehicles



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



S.No.	Date	Time	Speaker	Topic
8	July 26, 2023,	11:00 to 12:00	Dr. S. A. Ilangovan	Chemistry in Space Technology
9		15:00 to 16:00	Prof.BhalaSivaraman	Chemistry in Space Science
10	July 27, 2023	11:00 to 12:00	Dr. K. Sankarasubramanian	The Sun
11		15:00 to 16:00	Prof. DebabrataBanerjee	The Solar System: Formation, evolution andthe present state
12	July 28, 2023	11:00 to 12:00	Dr. Tirtha Pratim Das	Scientific Payload development for Solar System Exploration
13		15:00 to 16:00	Prof. Varun Sheel	Planets in the Solar System
14	July 31, 2023, Monday	11:00 to 12:00	Prof. RamanandaChakrabarti	Origin and Evolution of the Moon
15		15:00 to 16:00	Dr. Kinsuk Acharya	Minor Bodies in the Solar System – Asteroids, Comets and Meteors
16	August 01, 2023, Tuesday	11:00 to 12:00	Dr. Ritu Karidhal	Mission Design for Space Exploration



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



S.NO	Date	Time	Speaker	Topic
17	August 01, 2023, Tuesday	15:00 to 16:00	Dr. V. Girish	Observational Techniques for Space Science
18	August 02, 2023,	11:00 to 13:00	Dr. R. Niruj Mohan	Basics of Astronomy & Astrophysics
19	August 03, 2023,	11:00 to 12:00	Dr. Aravind Singh Rajpurohit,	Exoplanets and Earth-like Exoplanets
20		15:00 to 16:00	Prof. Sudha Rajamani	Introduction to Astrobiology and Search of Life Beyond Earth
21	August 04, 2023,	11:00 to 12:00	Dr. K. PraveenKumar	Research Opportunities in Space Science and Technologies
22		15:00 to 16:00	Prof. Tarun Sauradeep	Introduction to Cosmology
23	August 07, 2023	14:00 to 15:00 hours;	Concluding Session	

Student Registration and Certificate Details

The number of students registered for START program is 44. The number of students eligible to appear online test after online 23 session class is 43.

The number of students is registered for ISRO start	44
The number of students is eligible for participation certificate	43
The number of students got certificate after exam	22
The number of students scored A+ Grade	1
The number of students scored A Grade	11
The number of students scored B+ Grade	3
The number of students scored B Grade	7

Total Marks = 50



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



Photos of Inauguration and Training Sessions





MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE (UGC-AUTONOMOUS INSTITUTION)


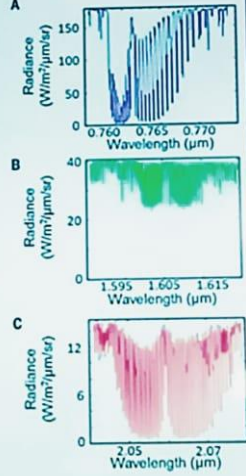
Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



Space observations of Geosphere - Biosphere – atmosphere interactions by Dr. Suresh Babu

Orbiting Carbon Observatory

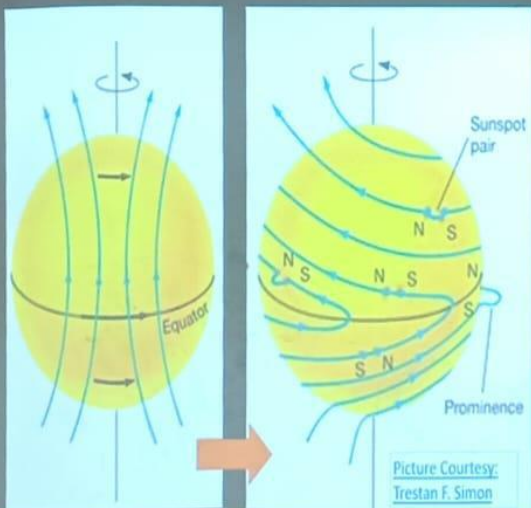
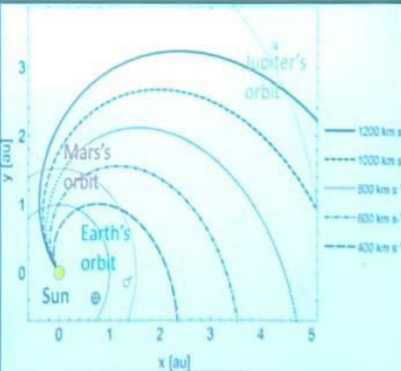
OCO – 2 instrument measures the intensity of the reflected sunlight off the Earth's surface at specific wavelengths at a given location. Gas molecules in the atmosphere absorb the sunlight at specific wavelengths and OCO – 2 spectrometers detect these molecular fingerprints.

The Orbiting Carbon Observatory-2 early science investigations of regional carbon dioxide fluxes, Volume: 358, Issue: 6360, DOI: (10.1126/science.aam5745)

2023/07/21 11:48

The 'Magnetic Drama' makes things complex Sun

Sun, a soup of charged particles (plasma), has a magnetic field

Parker Spiral Spiral. Courtesy: Lhotka and Narita, 2019

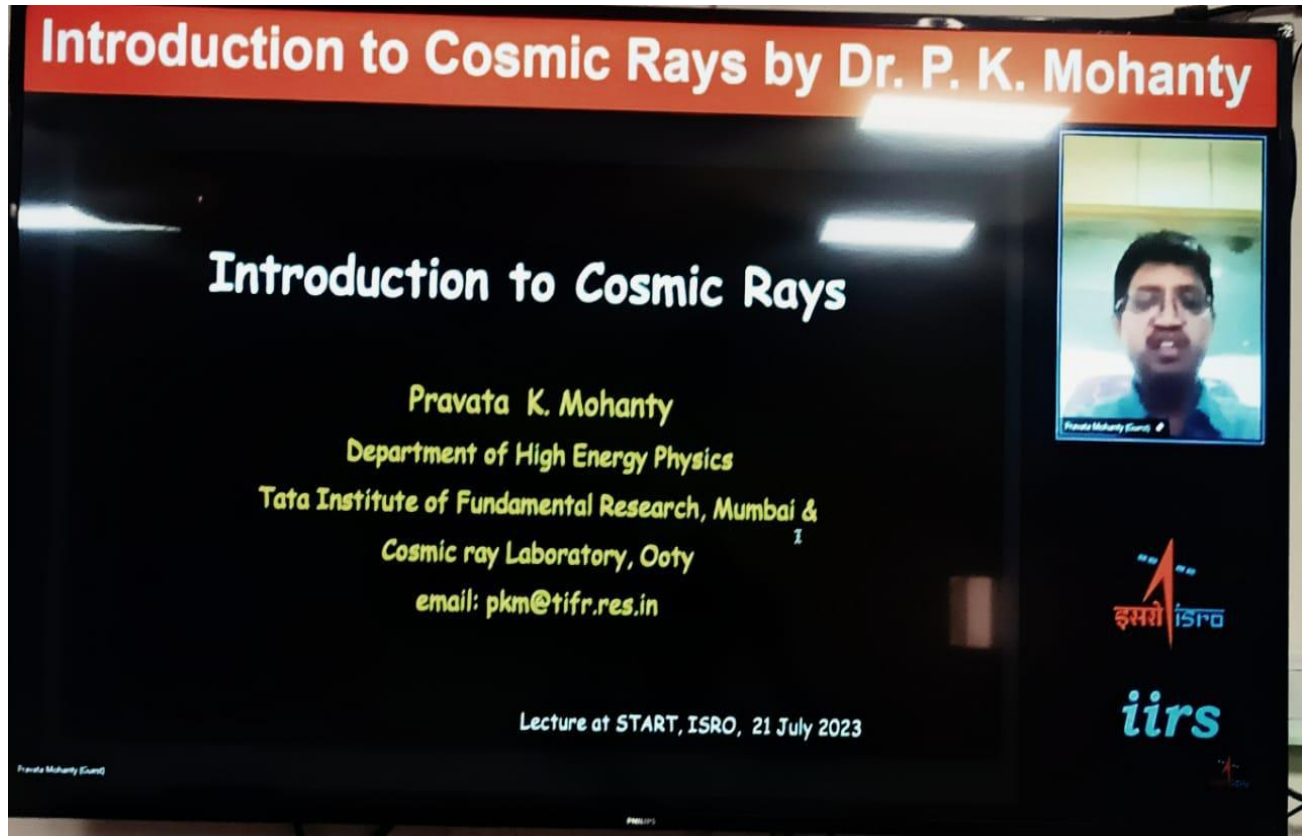
Solar magnetism (IMF) Parker Spiral

7/32



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA





MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE (UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



Earth's Ionosphere, Magnetosphere, Sun-Earth interaction and Space Weather
by Dr. Tarun Kumar Pant

START-2023: Overview of Space Science and Technology

SPL
Space Physics Laboratory

Earth's Ionosphere, Magnetosphere, Sun-Earth interaction and Space Weather

Dr. Tarun Kumar Pant

Space Physics Laboratory
Vikram Sarabhai Space Centre
Thiruvananthapuram - 695022

Space Weather Research

Indian Network for Space Weather Impact Monitoring

ANTARCTIC expedition

Maltri

Bharati

Extensive scientific observations on atmospheric aerosols and ionosphere are being made from the Indian stations in Antarctica as part of the space weather and climate change research at various Institutes in India

InSWIM Stations

- Operational
- Proposed
- Collaborative

Proposed FPI location

ELA Crest latitudes

ISRO

iirs

Outline

- Propellants
 - Energetic materials
 - Solid & Liquid Propellants
 - Propulsion aspects
- Materials
 - Polymers
 - Ceramic Composites
- Energy Storage Systems
 - Primary Power
 - Efficiency, Low cost
- Analytical Methods
- Life Support Systems
- Planetary Missions

26.11.23
D. S.A. Rajam, CO, VSSC (ISRO)

2

Energy systems for Space

- Launch vehicles
 - Battery
 - Continuous Supply – Equipment
 - Supercapacitor
 - Pulse - Pyro systems
 - Supercapattery
 - Continuous + Pulse - Actuators
- Spacecrafts
 - Solar cell panels
 - Rechargeable batteries
 - Fuel cells – Regenerative type
 - RTGs
 - Radioisotope thermoelectric generators

26.11.23
D. S.A. Rajam, CO, VSSC (ISRO)

2



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



Chemistry in Space Lecture by Prof. Shashi Sivaraman

Chemistry on the surface of planet Earth

Without electromagnetic spectrum – Heat

(Natural) & (Artificial)

Forest fire / Coal burning → Hydrocarbons
Oxides of carbon, nitrogen etc.
Particulate matter

Burning the carbon content

What residues we get by burning the fossil fuels? What are the allotropes of Carbon?
Similar process in deep space?

The Sun by Dr. K. Sankarasubramanian

Press Esc to exit full screen

The source of the Sun's activity is the magnetic field

Thomas Wiegmann



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE (UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



Scientific Payload development for Solar System Exploration by Dr. Tirtha Pratim Das

6 Documentation Audit

What are the documents to be prepared and at what stage?

1 Baseline Design Review (BDR) document

2 Preliminary Design Review (PDR) document

3 All ICDs

4 Baseline Configuration Control Document (CCD)

5 T&E Document

6 Calibration test report

7 Critical Design Review (CDR) document

8 FM CCD

9 Final Calibration test report

10 Production file (all process-related papers)

11 Pre Shipment Review (PSR) document

25/30





MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



**Student Merit Certificate, Coordinator Certificate and
Institution Certificate**



भारत सरकार / GOVERNMENT OF INDIA
अंतरिक्ष विभाग / DEPARTMENT OF SPACE
भारतीय अंतरिक्ष अनुसंधान संगठन / INDIAN SPACE RESEARCH ORGANISATION (ISRO)



CERTIFICATE OF MERIT

SPACE SCIENCE AND TECHNOLOGY AWARENESS TRAINING (START)

नामांकन सं. / Enrolment No. :
202330012030742

यह प्रमाणपत्र
MS. THOKALA THEJASREE
(मदनपल्ले इंस्टीट्यूट ऑफ टेक्नोलॉजी एंड साइंस)
को " अंतरिक्ष विज्ञान और प्रौद्योगिकी का अवलोकन "
में ऑनलाइन प्रशिक्षण कार्यक्रम में भाग लेने पर प्रदान किया जाता है।
दया ऑनलाइन प्रशिक्षण कार्यक्रम का आयोजन 20-07-2023 से 07-08-2023 (कुल पाठ्यक्रम की अवधि = 22 घंटे) के दौरान किया गया।

**THIS CERTIFICATE IS
AWARDED TO
MS. THOKALA THEJASREE**
(*Madanapalle Institute of Technology and Science*)
ON HAVING PARTICIPATED IN THE ONLINE TRAINING PROGRAMME ON
"Overview of Space Science and Technology"
THIS ONLINE TRAINING PROGRAMME WAS CONDUCTED DURING **20-07-2023 to 07-08-2023** (Total course duration -
22 hours).

EXAM GRADE: **A-**
ATTENDANCE: **84 %**

दिनांक/Date: **20-09-2023**
स्थान/Place: ISRO HQ, Bangalore

UID: 5a3e7c181e179d93a71ea15af62ed77 This Certificate can be validated using URL - <https://certifire.isro.gov.in>


समन्वयक / Coordinator
इसरो स्टार्ट नोडल सेंटर/ISRO START Nodal Center


निदेशक / Director
एसपीओ इसरो मुख्यालय / SPO, ISRO HQ Bangalore



भारतीय सुदूर संवेदन संस्थान / INDIAN INSTITUTE OF REMOTE SENSING
भारतीय अंतरिक्ष अनुसंधान संगठन / INDIAN SPACE RESEARCH ORGANISATION
अंतरिक्ष विभाग, भारत सरकार / DEPARTMENT OF SPACE, GOVERNMENT OF INDIA



ऑनलाइन दूरस्थ अधिगम कार्यक्रम
ONLINE DISTANCE LEARNING PROGRAMME

समन्वयक प्रमाणपत्र
CERTIFICATE OF COORDINATION

COR2023300119038

यह प्रमाणित किया जाता है कि **मदनपल्ले इंस्टीट्यूट ऑफ टेक्नोलॉजी एंड साइंस** कार्यरत **नेहरू कंदामामी**, ने इसरो स्टार्ट कार्यक्रम के अंतर्गत **अंतरिक्ष विज्ञान और प्रौद्योगिकी का अवलोकन** विषय पर दया संस्थान द्वारा दिनांक 20-07-2023 से 07-08-2023 तक संचालित ऑनलाइन प्रशिक्षण पाठ्यक्रम को समन्वित किया।

This is to certify that **DR. NEHRU KANDASAMY**, working with **Madanapalle Institute of Technology and Science**, has coordinated the online training course on **Overview of Space Science and Technology** under ISRO START Programme conducted by this institute during July 20, 2023 to August 07, 2023

दिनांक/Date: **19-09-2023**
देवरादर / Dehradun

प्रमुख,
विद्योद्योगिकी एवं दूरस्थ अधिगम विभाग
Head, Geospatial Technologies & Distance Learning Department, IIRS


समूह प्रमुख,
भू-स्थानिक प्रौद्योगिकी एवं आउटरीच कार्यक्रम समूह
Group Head, Geospatial Technologies & Outreach Programme Group, IIRS





MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2022 - Band: 251-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH), MBA & MCA



भारतीय सुदूर संवेदन संस्थान/ INDIAN INSTITUTE OF REMOTE SENSING

भारतीय अंतरिक्ष अनुसंधान संगठन/ INDIAN SPACE RESEARCH ORGANISATION
अंतरिक्ष विभाग, भारत सरकार/ DEPARTMENT OF SPACE, GOVERNMENT OF INDIA



श्री: पीठर सरकै/शिलार करुजन प्रमाण पत्र
OFF - CAMPUS OUTREACH CERTIFICATE PROGRAMME

COR2023300119038

संस्थान की सहभागिता का प्रमाण पत्र
CERTIFICATE OF PARTICIPATION OF INSTITUTE

यह प्रमाणित किया जाता है कि **मदनपल्ले इंस्टीट्यूट ऑफ टेक्नोलॉजी एंड साइंस** ने भारतीय सुदूर संवेदन संस्थान, इसरो देहारादून द्वारा संचालित ऑनलाइन प्रशिक्षण पाठ्यक्रम इसरो स्टार्ट कार्यक्रम के अंतर्गत **अंतरिक्ष विज्ञान और प्रौद्योगिकी का अवलोकन** में भाग लिया। इस ऑनलाइन पाठ्यक्रम का संचालन दिनांक 20-07-2023 से 07-08-2023 तक किया गया।

This is to certify that **Madanapalle Institute of Technology and Science**, has participated in online training programme conducted by Indian Institute of Remote Sensing, ISRO Dehradun on **Overview of Space Science and Technology** under ISRO START Programme. This online programme was conducted during July 20, 2023 to August 07, 2023

दिनांक/ Date: 19-09-2023
देहारादून/ Dehradun

प्रमुख,
जियोवेब सर्विसेस, सूचना प्रौद्योगिकी एवं दूरस्थ अधिगम विभाग
Head, Geoweb Services, IT & Distance Learning Department, IIRS

समूह प्रमुख,
भू-स्थानिक प्रौद्योगिकी एवं आउटरीच कार्यक्रम समूह
Group Head, Geospatial Technologies & Outreach Programme Group, IIRS

Finally I express my gratitude to Dr.C.Yuvaraj, Principal, Madanapalle Institute of Technology and Science & Dr.S. Rajasekaran, Head of the Electronics and Communication Engineering department.