

Workshops/Seminars (2020 – 2021)

AICTE Sponsored Short term Training Programme (STTP) On “ROBOTICS, ARTIFICIAL INTELLIGENCE & CONTROL” : PHASE-II: 30/11/2020 to 05/12/2020

The Inaugural ceremony of Phase II of AICTE sponsored Six days Short Term Training Programme(STTP) on the topic “**Robotics, Artificial intelligence, and control**” was conducted on 30/11/2020. The welcome address was given by Dr. Deepa Elizabeth George, Head of the Department, Department of Electronics, Toc H Institute of Science and Technology, Arakkunnam, Kerala. Dr.Subir Kumar Saha, Professor, IIT Delhi inaugurated the session and delivered the inaugural address specifying the importance of Short term training program and he also introduced a Team-based Online Project activity (TOP) in the STTP to promote effective learning methodology among the participants. Dr. Preethi Thekkath, Principal, Toc H Institute of Science and Technology, Arakkunnam, Kerala felicitated on the auspicious occasion. Dr.S.Perumal Sankar, Professor, Department of Electronics, Toc H Institute of Science and Technology, Arakkunnam, Kerala also gave felicitations to this event. Dr.Vinu.R, Associate Professor, Department of Electronics, Toc H Institute of Science and Technology, Arakkunnam, Kerala presented a vote of thanks and concluded the inauguration event.

Major experts in the field of Robotics and Control like Dr.S.K.Saha, IIT Delhi, Dr. PrahladVadakkapat, NuS Singapore, Dr. Ashitva Ghoshal, IISc Bangalore, Dr.Shyamanta Hazarika, IIT Guwahati, Dr.Ramadoss, NIT Trichy, Dr.Rajesh Kannan MegalingamHuT Labs, Ms.Janani Mohan, Vecna Robotics, USA, Mr.Lentin Joseph, Qbotics Lab, Dr.Jisha VR, Mr.Sunil Paul, Shristi Robotics were the prominent resource persons for the 6 days. Around 50 participants from various academic institutions and industry attended the session. The resource person made the session more interesting through multimedia presentation & the participants got ample opportunity to clarify their doubts regarding the topic in the Q & A session. The Six days long STTP Phase-I on “**Robotics, Artificial intelligence and control**” ended on 05/12/2020.

Session Schedule

Organized by
Department of Electronics
Phase-2: Session Schedule

30 NOV 2020 DAY 1

9:30-10:00am: Inauguration
10:00-11:30am
Topic : Robotics to Rural- Innovative Teaching and Research Approaches
Dr. S.K SAHA
Professor,
Mechanical Engineering,
IIT Delhi

1:00-3:00pm
Topic : AI- Foundation ;
Models & Applications
Dr. B. RAMADOSS
Professor IITAg,
Department of
Computer
Applications,
NIT, Tiruchirappalli.

1 DEC 2020 DAY 2

9:30-11:00am
Topic : Humanoid Robots
Dr. PRAHLAD VADAKKAPAT
Associate Professor,
National University of
Singapore,
Singapore.

11:30 am-12:40pm
Topic : Real world AI implementations
Mr. JEEITHU JOSEPH
Enterprise Architect
Robotics & Cognitive
Solutions Group,
TCS

1:30-3:30pm
Topic : Entrepreneur opportunities

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Phase-2: Session Schedule



2 DEC 2020 DAY 3	10:00am -12:00 noon Topic : Overview of Recent Research in Robotics at IISc Robotics Lab	 Dr. ASHITAVA GHOSAL Professor of Mechanical Engineering, IISc, Bangalore.	1:00-3:00pm Topic : Mobile Robotics with Matlab	 Dr. JISHA V R Associate Professor, Government Engineering College, Thrissur.
	9:30-11:00am Topic : AI in General	 Dr. PRAHLAD VADARKEPAT Associate Professor, National University of Singapore, Singapore.	11:10 am-12:40pm Topic : Robot Modelling and Visualization using URDF and rviz	 Dr. GEORGINA BINOY JOSEPH Associate Professor, Department of Electronics, IISc H Institute of Science and Technology, Kerala.
	1:30-3:30pm Topic : Flying Robots- how to			

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Phase-2: Session Schedule



4 DEC 2020 DAY 5	9:30-11:00am Topic : Robotics in Datawarehouse Management	 Ms. JANANI MOHAN Robotics Software Engineer, Yocum Robotics, Massachusetts, United States	11:10-12:40pm Topic : Programming Robots using ROS	 Mr. LENTIN JOSEPH CEO, Qbotics Labs, Kochi.
	1:30-3:30pm Topic : Fundamentals of Robotic Vision	 Dr. GEORGINA BINOY JOSEPH Associate Professor, Department of Electronics, IISc H Institute of Science and Technology, Kerala.		
5	10:00am-12:00pm Topic : Robotic Neurerehabilitation: Tryst with High Level Control			1:00-3:00pm Topic : IoT Architectures and Protocols for Industry 4.0

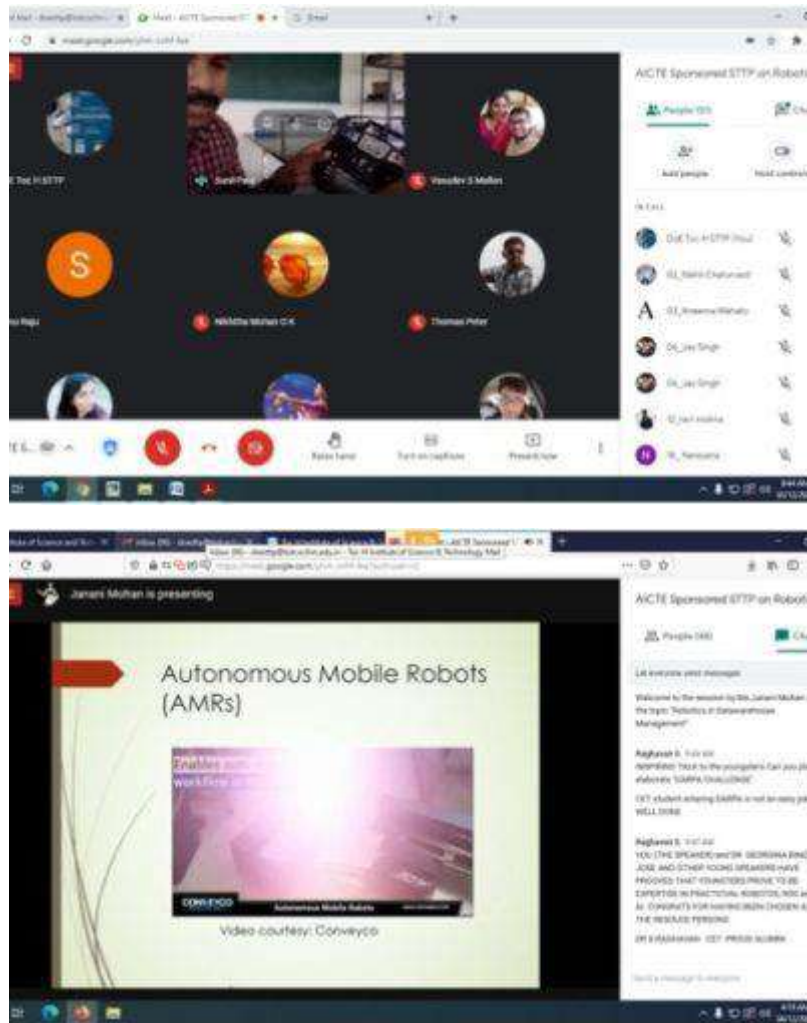
Session Schedule



The screenshot shows a Zoom meeting interface. The main window displays a presentation slide titled "Tele-USG Robot during Covid-19". The slide includes a diagram of a robot system with a "Master robot" and a "Slave robot", and a photograph of a person operating the robot. The text on the slide describes the robot's capabilities: "Master robot type: iRobotics", "Master: GoHigh Touch Display device by Dell.com, earlier named as PHAN/SM Cloud", and "Slave: (DOP US) robot arm with force sensing / Universal Robots (UR) for". It also mentions "Collaborator: Dr. Siva, IISc IISc, A. Ashwin, Chennai Research".

The chat window on the right shows messages from "AICTE Sponsored STTP on Robots". The messages include:

- 11:00 AM: Welcome to the first session by Dr. Siva Saha. The topic 'TeleUSG Robot' is an innovative Teaching Research approach.
- 11:01 AM: Thank you everyone. We will start the session 11:00 AM.
- 11:02 AM: Hello everyone!



AICTE Sponsored Short Term Training Programme(STTP) on “ROBOTICS, ARTIFICIAL INTELLIGENCE & CONTROL” : PHASE-I: 02/11/2020 to 07/11/2020

The Inaugural ceremony of the Phase I of AICTE sponsored Six days Short Term Training Programme on the topic “**Robotics, Artificial intelligence and control**” was conducted through online Platform” Google Meet” on 2/11/2020. The welcome address was given by Dr. Deepa Elizabeth George, Head of the Department, Department of Electronics, Toc H Institute of Science and Technology, Arakkunnam, Kerala. Dr. Alex Mathew, President, Toc H Public School Society gave the presidential Address and Col.B. Venkat, Director, AICTE inaugurated the session and delivered the inaugural address specifying the importance of Short term training programme . Also Dr. K. Varghese, Founder, Director and Manager, Toc H Public School Society and Dr. PrahladVadekapat presented special address for the successful conduction of this STTP. Prof. P.J. Joseph, Director, Toc H Public school society presented an inciting address and our guest Dr.S.Raghavan, Professor(HAG), NIT Trichy felicitated the gatherings. Dr. Preethi Thekkath, Principal, Toc H Institute of Science and Technology, Arakkunnam, Kerala felicitated on the auspicious occasion. Dr.Vinu.R, Associate Professor, Department of Electronics, Toc H Institute of Science and Technology, Arakkunnam, Kerala presented vote of thanks and concluded the inauguration event.

Major experts in the field of Robotics and Control like Dr. Prahlad Vadekapat, NuS Singapore, Dr. Ashitva Ghoshal, IISc Bangalore, Dr.Shyamanta Hazarika, IIT Guwahati, Dr.Manoj B S , IIST Thiruvananthapuram, Dr.Rajesh Kannan MegalingamHuT Labs,

Mr.Jayakrishnan, Asimov Robotics, Mr.Lentin Joseph, Qbotics Lab were the prominent resource persons for the 6 days. Around 100 participants from different academic institutions and industry attended the session. The resource person made the session more interesting through multimedia presentation & the participants got ample opportunity to clarify their doubts regarding the topic in the Q & A session. The Six days long STTP Phase-I on **“Robotics, Artificial intelligence and control”** ended on 07/11/2020. Session Schedule

DAY 1
2 NOV 2020

INAUGURATION
9.00 AM

9.30 AM-11.00 AM

DR. PRAHLAD VADAKKEPAT
Associate Professor,
National University of Singapore (NUS),
Singapore
Topic : Robotics and AI from an Industry 4.0 positioning

11.10 AM-12.40 PM

Dr. JISHA V R
Associate Professor
Government Engineering College,
Thrissur
Topic : Modelling of Robots

1.30 PM- 3.30 PM

Dr. RAJESH KANNAN MEGALINGAM

GOOGLE MEET

Organized by
Department of Electronics
Phase-I: Session Schedule

9.30-11.00am
Topic : Robotics and AI from an Industry 4.0 positioning

2 NOV 2020
DAY 1

Dr. PRAHLAD VADAKKEPAT
Associate Professor,
Electrical and computer
Engineering
National University of
Singapore, Singapore

11.10am-12.40pm
Topic : Modelling of Robots

Dr. JISHA V R
Associate Professor
Government
Engineering College,
Thrissur

1.30pm-3.30pm
Topic : Sensors and Actuators
in Navigational Robots

**Dr. RAJESH KANNAN
MEGALINGAM**
Director, Asim
Lab,
Asimov School of Engineering,
Kollam, Kerala

10.00am-12.00pm
Topic : Introduction to Robotics: the
science and technology of robots

1.40pm-3.30pm
Topic : Data Science, Machine
Learning & Real-World
Applications

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Department of Electronics
Phase-I: Session Schedule

10.00am-12.00pm
Topic: Introduction to Robotics & Components for building a Robot

1.30pm-3.30pm
Topic: Building Robots for Practical applications

4 NOV 2020
DAY 3

Mr. RENU PALLE,
CEO, Srihari Robotics Pvt.Ltd,
Kochi

9.30am-11.00am
Topic: Desire for speed: Quest to
bridge the gap between human and
machine

5 NOV 2020
DAY 4

Dr. NEERAJ SHARMA
Post Doctoral Researcher
IISc, Bangalore

11.10am-12.40pm
Topic : Internet of Things for
Industry 4.0

Dr. MANOJ RS
Professor & Head,
Dept. of Asimov
IISc,
Thiruvananthapuram

1.30pm-3.30pm
Topic : Introduction to Robot

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Department of Electronics
Phase-I: Session Schedule



<p>6 NOV 2020 DAYS</p>	<p>9.30am-11.00am Topic : Robotic Neurorehabilitation: Tryat with High Level Control Strategies</p>  <p>Dr. SHYAMANTA M. HAZARIKA Department of Mechanical Engineering IIT Guwahati</p>	<p>11.10am-12.40pm Topic : Control of Robots</p>  <p>Dr. ANURADHA GHOSHAL Professor of Mechanical Engineering IISc, Bangalore</p>	
	<p>1.30-3.30pm Topic : Service Robots and Beyond</p>  <p>Mr. JAYAKRISHNAN T Founder and CEO Axiom Robotics Pvt Ltd, Kochi</p>	<p>10.00am-12.00pm Topic : Design and Development of</p>	<p>1.30pm-3.30pm Topic : Fundamentals of</p>

Screenshots



Manoj B. S. is presenting

Internet of Things for Industry 4.0
B. S. Manoj
Professor
Indian Institute of Space science and technology (IISc), Thiruvananthapuram

Registration Form for AICTE Sport

Participants: 10

Participants: Pratik M, Vignesh, Anand Zachary, Anuradha Ghoshal, Anand Gh, Anand L, Anand L, Anand L, Anand L, Anand L, Anand L



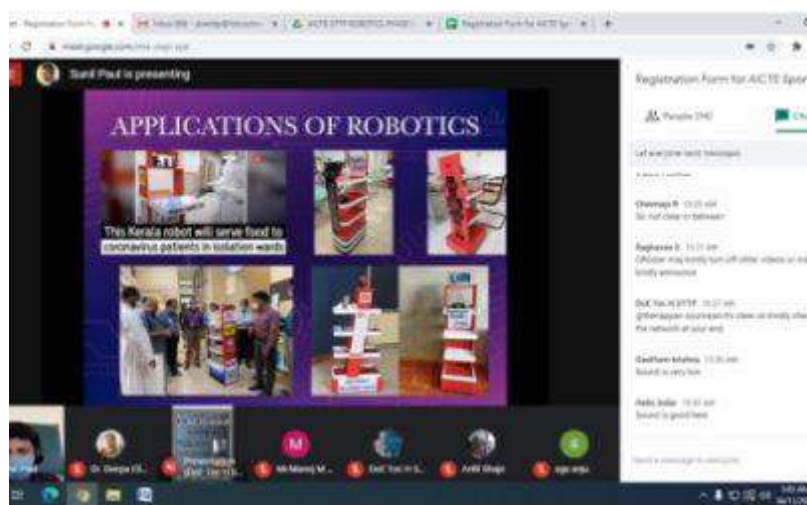
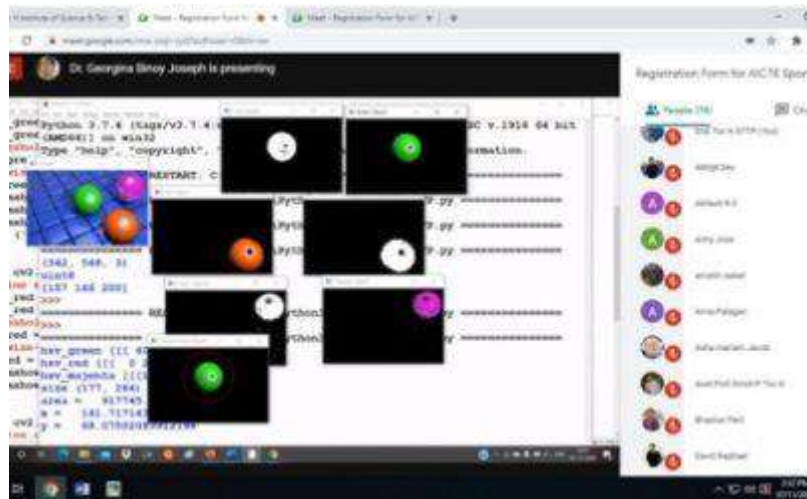
Jayakrishnan T is presenting

SERVICE ROBOTICS AND BEYOND
By Jayakrishnan T
CEO Axiom Robotics

Registration Form for AICTE Sport

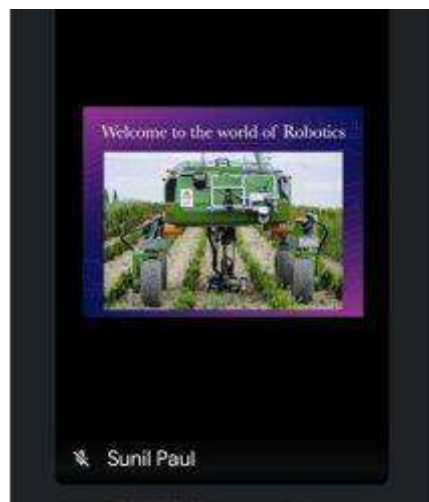
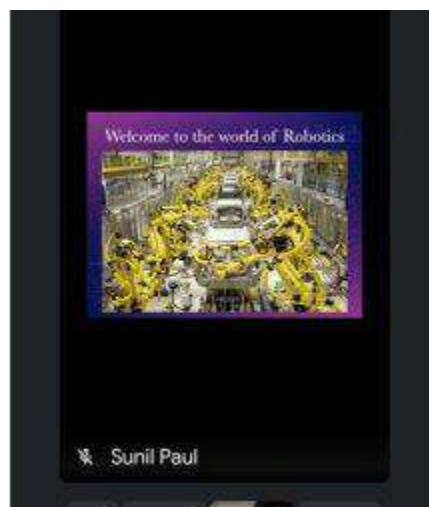
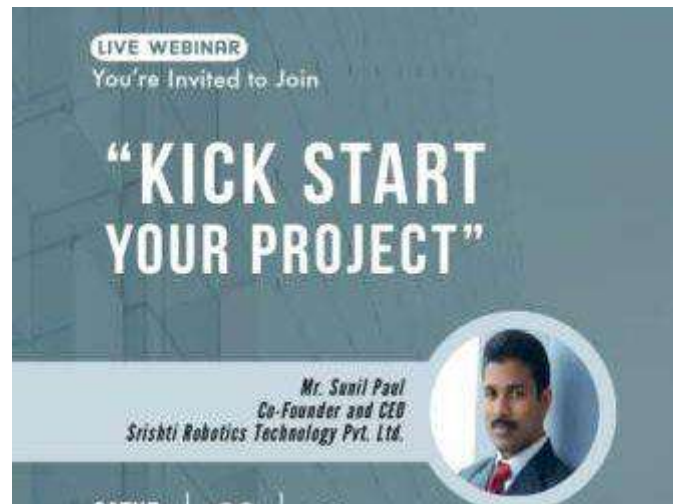
Participants: 10

Participants: Jayakrishnan T, Anand Zachary, Anand Gh, Anand L, Anand L, Anand L, Anand L, Anand L, Anand L, Anand L



WEBINAR ON "KICK START YOUR PROJECT"

The webinar on "Kick Start your Project" which talks about *Robots and their role in Modern World* was organized by the Department of Electronics, TIST, on 26th September 2020, via Google meet. It was conducted by *Mr. Sunil Paul*, Co-Founder and CEO of *Srishti Robotics Pvt. Ltd*. The webinar was attended by the faculty members and the students of the Electronics department. The session started with an introduction about Robots and their basic working. Then, he briefed about the different cost-efficient companies that manufactured robots and an explanation was also given on different types of Robots. The facilitator further discussed about the projects undertaken by his company during the pandemic, like about the food carrying drone and a pedal operated sanitizer dispenser. Mr. Sunil's area of work goes beyond designing and manufacturing robots. He had trained students of various age groups for competitions held around the globe. Furthermore, the attendees were shown different components used to build a robot, ranging from motors to boards. By the end of the meeting the students got a chance to put forth their queries which were diligently answered by the facilitator. Overall, the session had been interactive, informative and provided a positive impact.



AICTE Sponsored Short term training Programme(STTP) Phase III on "TRENDS AND TECHNOLOGIES IN ANTENNA DESIGN AND ITS RESEARCH SCOPES" : PHASE-III: 12/10/2020 to 17/10/2020

Department of Electronics, Toc H Institute of Science and Technology, Arakkunnam organized a **AICTE Sponsored 6 Days STTP on "Trends and Technologies in Antenna Design and its Research Scopes"-PHASE III from 12th October 2020 to 17th October 2020.**The training programme was intended to faculty members from AICTE approved

Engineering colleges, research scholars, Industry persons and PG students. The main objective of STTP was to train the participants about the knowledge on Antenna & Wireless Communication and explore the research scopes of Antenna in future telecommunication and scientific applications. 150 participants attended this STTP. World-renowned experts who have specialized in the field of Antenna Design handled the current, futuristic concepts and provide insight into the contemporary challenges. The resource persons were Dr. Sudhakar Rao, Northrop Grumman Space Systems, US, Dr.Sangeetha Velan Invicara India Pvt Ltd, Chennai. Mr. Chandra Gopal, Jyoti Electronics Bengaluru, Dr. Vamsi Krishna Velidi, ISRO, Dr.Mrinal Kanti Mandal, IIT Kharagpur, , Dr. M Lakshminarayana, DRDO, Prof. Dr.S.Suganthi, CHRIST University, Prof.Dr. Rabindra K. Mishra Berhampur University, Prof. Dr.S.Raghavan, Most Professor, Dept. Of ECE, NIT – Trichy, Dr Shiv Narayan, NAL. The valedictory session was conducted on 17th October at 3 PM. Chief guest Dr. Sudhakar Rao, Northrop Grumman Space Systems, US shared an unforgettable valuable speech at the end of the session.

SESSION SCHEDULE

AICTE Sponsored Six days Virtual STTP

PHASE III - SESSION SCHEDULE

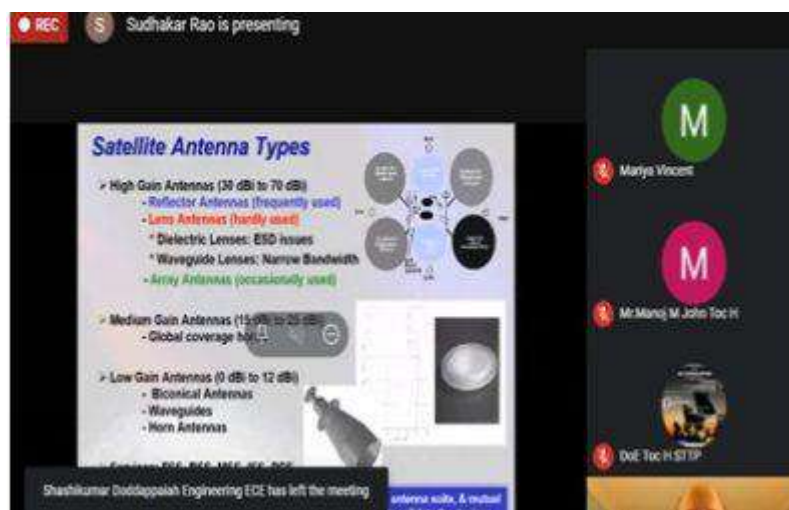
<p>DR. SUDHAKAR RAO RESEARCH FELLOW/VP SENIOR TECHNICAL PERSONNEL SPACE & APPLIED TECHNOLOGY CENTER OF EXCELLENCE NORTHROP GRUMMAN SPACE SYSTEMS 1 SPACE PARK DRIVE, HUNTSVILLE BRANCH, CA 35894, USA</p> <p>9:30 AM TO 10:30 AM TOPIC: ANTENNA DESIGN ASPECTS OF 5G NR SYSTEMS: STATE OF THE ART, CHALLENGES AND FUTURE SCENARIOS</p>	<p>DAY 1 12TH OCTOBER 2020</p>	<p>DR. SANGEETHA VELAN CONSULTANT OF INVICARA INDIA PVT LTD, CHENNAI</p> <p>11:30 AM TO 12:30 PM TOPIC: META-MATERIALS AND META-SURFACES APPLICATIONS IN DESIGN OF ANTENNA</p>
<p>MR. CHANDRA GOPAL APPLICATION ENGINEER JYOTI ELECTRONICS BENGALURU</p> <p>1:30 PM TO 3:30 PM TOPIC: ELECTROMAGNETIC ANALYSIS OF ELECTRONIC WPT SYSTEMS</p>	<p>DAY 2 13TH OCTOBER 2020</p>	<p>DR. MRINAL KANTIMANDAL ASSOCIATE PROFESSOR, DEPARTMENT OF ELECTRONICS & ELECTRICAL COMMUNICATION ENGINEERING IIT KHARAGPUR</p> <p>1:30 PM TO 3:30 PM TOPIC: DESIGN OF WIRELESS POWER TRANSFER</p>
<p>DR. VAMSI KRISHNA VELIDI SCIENTIST/ENGINEER - 5G COMMUNICATION SYSTEMS GROUP/ISRO SATELLITE CENTER - BANGALORE</p> <p>10:30 AM TO 12:00 NOON TOPIC: TRANSMISSION LINE THEORY FOR WIRELESS COMMUNICATIONS</p>	<p>DAY 3 14TH OCTOBER 2020</p>	<p>PROF. DR. S. SUGANTHI PROFESSOR, BI & MICROBIOME RESEARCH LABORATORY RESEARCH COORDINATOR</p>

AICTE Sponsored Six days Virtual STTP

PHASE III - SESSION SCHEDULE

<p>PROF. DR. SHYAM SUNDAR PATTNAYK DIRECTOR, BITTR, CHENNAI EX VICE-CHANCELLOR OF RAJAGOPAL UNIVERSITY OF TECHNOLOGY, COYT. OF OOREA, OOREA</p> <p>10:30 AM TO 12:00 NOON TOPIC: DESIGN OF ANTENNA FOR 5G NR SYSTEMS: STATE OF THE ART, CHALLENGES AND FUTURE SCENARIOS</p>	<p>DAY 4 15TH OCTOBER 2020</p>	<p>PROF. DR. RABINDRA K. MISHRA SARABAI CHANDRA SENIOR PROFESSOR, PROFESSOR, ELECTRONIC SCIENCE AND TECHNOLOGY BERHAMPUR UNIVERSITY, BIHAR</p> <p>1:00 PM TO 3:30 PM TOPIC: ANALYSIS OF ANTENNA FOR 5G NR SYSTEMS: STATE OF THE ART, CHALLENGES AND FUTURE SCENARIOS</p>
<p>MR. DOONDE KUMAR JANAPALA SENIOR RESEARCH FELLOW IN DRDO FUNDED PROJECT, COE DEPARTMENT, GARUNDA INSTITUTE OF TECHNOLOGY AND SCIENCE, JALGAON, GUJARAT</p> <p>9:30 AM TO 11:00 AM TOPIC: DESIGN OF ANTENNA FOR 5G NR SYSTEMS: STATE OF THE ART, CHALLENGES AND FUTURE SCENARIOS</p>	<p>DAY 5 16TH OCTOBER 2020</p>	<p>MR. JONES RESEARCHER - ANTENNA DESIGN</p> <p>11:30 AM TO 12:45 PM TOPIC: DESIGN OF ANTENNA FOR 5G NR SYSTEMS: STATE OF THE ART, CHALLENGES AND FUTURE SCENARIOS</p>
<p>DR. BASUDEB GHOSH ASSOCIATE PROFESSOR, DEPARTMENT OF AVIONICS, INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY (IIST), THIRUVANANTHAPURAM</p> <p>1:30 PM TO 3:30 PM TOPIC: DESIGN OF ANTENNA FOR 5G NR SYSTEMS: STATE OF THE ART, CHALLENGES AND FUTURE SCENARIOS</p>	<p>DAY 6 17TH OCTOBER 2020</p>	<p>MR. JONES RESEARCHER - ANTENNA DESIGN</p> <p>11:15 AM TO 12:45 PM TOPIC: DESIGN OF ANTENNA FOR 5G NR SYSTEMS: STATE OF THE ART, CHALLENGES AND FUTURE SCENARIOS</p>

SCREENSHOTS

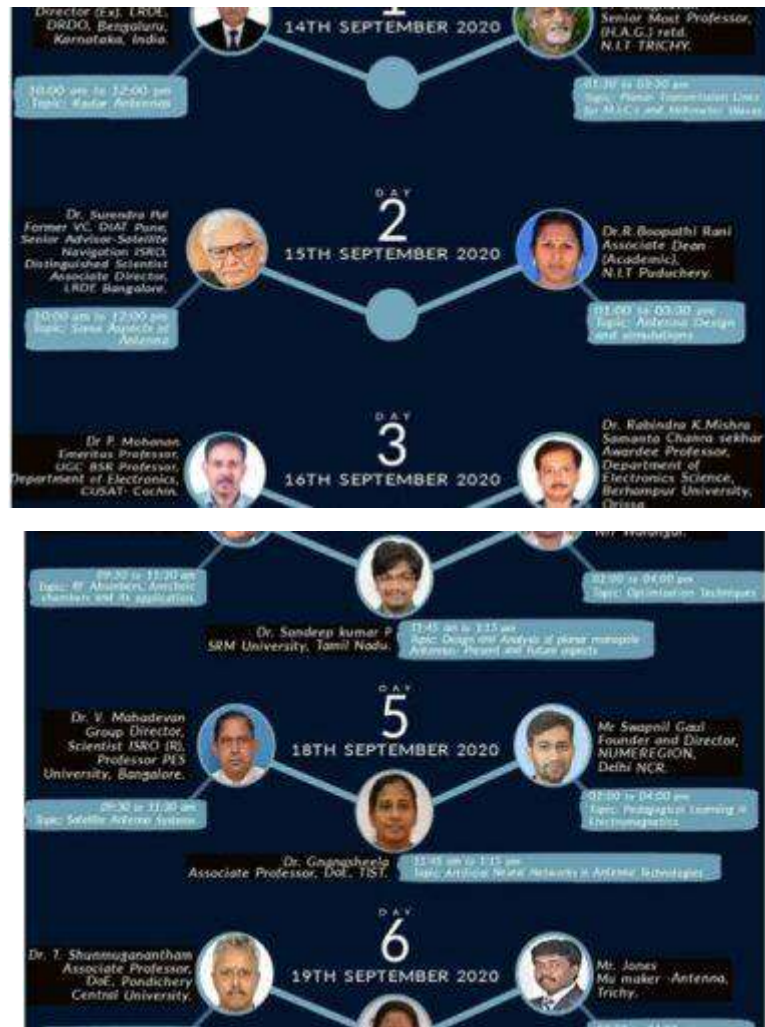


AICTE Sponsored Short term training Programme(STTP) Phase II on “TRENDS AND TECHNOLOGIES IN ANTENNA DESIGN AND ITS RESEARCH SCOPES” : PHASE-II: 14/09/2020 to 19/09/2020

The Six days long STTP Phase-II on Trends and Technologies in “Trends and Technologies of Antenna Design and its Research scopes” was inaugurated formally by Dr. Deepa Elizabeth George, HOD, Department of Electronics, TIST with a Welcome Address. Felicitations are given by Dr. K.Varghese , Founder Director and Manager, Toc H Public School Society, and Dr. Alex Mathew, Toc H Public School Society . The overview of the STTP was given by Dr. S.Perumal Sankar , Department of Electronics, TIST. The Sessions started on 14/9/2020 at 10.00 am, taken up by Dr. D.C.Pande, Director (Retd.), LRDE-DRDO, Bangalore, on “Radar Antennas”. Major experts in the field of Microwave and

Antenna Engineering were the resource persons for the 6 days. At most 100 participants including teaching faculty of Eng. Colleges, researchers & PG students from academia and Engineers & Scientists from industry and R&D institutes were participated in the session. The participants utilized their opportunity to clarify their doubts and found the session very useful for them. Six days long STTP Phase-II on “Trends and Technologies of Antenna Design and its Research scopes” ended on 19/09/2020.

SESSION SCHEDULE



SCREENSHOTS



Antenna & Noise

Antenna Temperature (T_a) is a parameter that describes how much noise an antenna produces or picks up in a given environment. This temperature is not the physical temperature of the antenna. Moreover, an antenna does not have an intrinsic "antenna temperature" associated with it, rather the temperature depends on its gain pattern and the thermal environment that it is placed in. Antenna temperature is also sometimes referred to as **Antenna Noise Temperature**.

$$T_a = \frac{1}{4\pi} \int_0^{2\pi} \int_0^{\pi} R(\theta, \phi) T(\theta, \phi) \sin \theta d\theta d\phi$$

$$T_{eq} = T_a + T_R$$

$$T_a = T_{in} + T_s + T_r + T_f$$

T_{in} – Noise temperature contribution from main reflection equals the noise temperature from main lobe, side lobes, diffractions, cross polarizations, noise due to sub reflection, feed etc.

A parameter often encountered in specification sheets for antennas that operate in certain environments is the ratio of gain of the antenna divided by the antenna temperature (or system temperature if a receiver is specified).

The screenshot shows a Zoom meeting in progress. At the top, there is a navigation bar with 'REC', a list of participants (Dr. K. Ramesh Babu, Dr. S. Raghavan, Dr. H. STP, and others), and a system tray showing the time as 3:17 PM. The main area displays a grid of participant icons, each with a letter: R (blue), S (brown), k (orange), P (pink), S (teal), and C (green). A central window shows a presentation slide with a graph and text, which is the same slide as seen in the top image.

AICTE Sponsored Short term training Programme (STTP) Phase I on “TRENDS AND TECHNOLOGIES IN ANTENNA DESIGN AND ITS RESEARCH SCOPES”

AICTE sponsored Short Term Training Programme on the topic “Trends and Technologies in Antenna Design and its Research Scopes” was inaugurated by AICTE Director **Dr. Ramesh Unnikrishnan** on 10th August 2020 at 9.30 AM. Dr. Deepa Elizabeth George, HOD, Department of Electronics, TIST delivered the Welcome Address and felicitations were given by Dr. K.Varghese , Founder Director and Manager, Toc H Public School Society , Dr. Alex Mathew, President, Toc H Public School Society and Prof.(Dr.)Preethi Thekkath, Principal, Toc H Institute of Science & Technology .Inaugural session ended with vote of thanks by Prof. Dr.S.Perumal Sankar, STTP Co-Ordinator, Department of Electronics, TIST.

PHASE-I: 10/08/2020 to 16/08/2020

The first session of Six days long STTP Phase-I on “Trends and Technologies of Antenna Design and its Research scopes” was rightly started after the inaugural function with the lecture session by Dr. S. Raghavan, Senior Most Professor HAG (Retd) on “Microwave Integrated Circuit Theory”. He has about 40 years of teaching and research experience. His interest includes Microwave Integrated Circuits, RF MEMS, BioMEMS, Metamaterial and Microwave Engineering. A proud research scholar of Prof. Bharathi Bhat and Prof.SK Koul, CARE, IIT Delhi, has established state of the art Microwave Integrated Circuit and Microwave Laboratory in N.I.T., Trichy with the help of Govt. Of India funding.

Major experts in the field of Microwave and Antenna Engineering were the resource persons for the 6 days. More than 100 participants attended the sessions and acquired knowledge from the veterans in the field of RF Engineering. The participants utilized their opportunity to clarify their doubts and found the session very useful for them.

Six days long STTP Phase-I on “Trends and Technologies of Antenna Design and its Research scopes” ended on 16/08/2020.

SESSION SCHEDULE

Sl.No.	Day/Date	Time	Resource Person	Topic
1	Day 1: August 10, 2020	10 00 - 12 00 (IST)	Dr. S.Raghavan, Professor HAG (Retd) Department of Electronics and Communication Engineering, NIT Tiruchirappalli.	Microwave Integrated Circuit Theory
		13 30 - 15 30 (IST):	Dr. A. Prakasa Rao Associate Professor Department of ECE NIT Warangal	Optimization Techniques in Antenna Design and Convolutional Codes in Communications.
2	Day 2: August 11, 2020	10 00 - 12 00 (IST)	Dr.P.Mohanan Emeritus Professor UGC-BSR Professor Department of Electronics Cochin University of Science and Technology	EM Theory made Easy
		13 30 - 15 30 (IST)	Dr.A.Prakasa Rao Associate Professor Department of ECE NIT Warangal	Optimization Techniques in Antenna Design and Convolutional Codes in Communications.
3	Day 3: August 12, 2020	10 00 – 12 00 (IST)	Dr.D.C.Pande Director (Retd) LRDE-DRDO Bangalore.	Antenna Measurements
		13 30 - 15 30 (IST)	Prof. Rabindra K Mishra Samanta Chandra Sekhar Awardee, Professor Department of Electronic Sciences, Berhampur University, Odisha	Research trends in METASURFACE Antennas

Sl.No.	Day/Date	Time	Resource Person	Topic
4	Day 4: August 13, 2020	10 00 – 12 00 (IST)	Prof.V.Mahadevan Group Director Scientist(Retd.)ISRO PES University, Bangalore	Space Antenna Design Challenges
		13 30 - 15 30 (IST)	Dr.T.Shanmuganatham Associate Professor Department of Electronics Engineering Central University, Pondicherry	Wearable Antennas
5	Day 5: August 14, 2020	10 00 – 12 00 (IST)	Mr.Jones MU Maker Antenna Trichy	Design and Analysis of simple Microstrip Patch antenna and Metamaterial Antenna
		13 30 - 15 30 (IST)		Design and Analysis of Dielectric Resonator Antenna.(DRA)
6	Day 6: August 16, 2020	10 00 – 12 00 (IST)	Dr.Bhadade Raghunath Subhanrao School of Electronics and Communicaion Engineering MIT-World Peace University Pune Maharastra	MIMO Antennas
		13 30 - 15 30 (IST)	Dr.A.Beno HOD Department of ECE Dr.SivanthiAditanar College of Engineering	RF Energy Harvesting and Radiation Hazards

SCREENSHOTS

Day 1 Session 1

MATERIAL	ϵ_r	tan δ at 100Hz	RMS Surface Roughness	Thermal conductivity k_f (W/cm ² °C)
RT DURROID 5880	2.16 - 2.34	5 - 15	0.75 - 1	0.0026
EPGILAM 10	10-13	20	-	0.0037
ALUMINA	9.6 - 10.4	0.5 - 3	.05 - 0.25	0.37
FUSED QUARTZ	3.75	1	0.006 - 0.025	0.01
BERYLLIA	6.6	1	0.05 - 1.25	2.5

Day 1 Session 2

LMS algorithm:

- $e(n) = d(n) - \hat{y}(n)$
- Error adaptation: $w(n+1) = w(n) + \mu e(n)$
- Weight update: $w(n+1) = w(n) + \mu e(n) x(n)$ where μ = step size

Normalized LMS:

$$\hat{y}(n) = \frac{w(n)}{1 + \sum_{k=0}^n |x(k)|^2}$$

Where μ is a positive constant chosen to be between 0 and 2, while γ is a small positive term.

Antenna & Noise

Antenna Temperature (T_a) is a parameter that describes how much noise an antenna produces or picks up in a given environment. This temperature is not the physical temperature of the antenna. Moreover, an antenna does not have an intrinsic "antenna temperature" associated with it; rather the temperature depends on its gain pattern and the thermal environment that it is placed in. Antenna temperature is also sometimes referred to as **Antenna Noise Temperature**.

$$T_a = \frac{1}{4\pi} \int_0^{2\pi} \int_0^{\pi} R(\theta, \phi) F(\theta, \phi) \sin \theta d\theta d\phi$$

$$T_{eq} = T_a + T_R$$

$$T_a = T_{in} + T_s + T_r + T_e$$

T_{in} - Noise temperature contribution from main reflection equals the noise temperature from main lobe, side lobes, diffractions, cross polarizations, noise due to sub reflection, feed etc.

A parameter often encountered in specification sheets for antennas that operate in certain environments is the ratio of gain of the antenna divided by the antenna temperature (or system temperature if a receiver is specified).

WEBINAR ON "FACING ENTRANCE EXAMS POST LOCKDOWN"

Department of Electronics, Toc H Institute of Science and Technology, Arakkunnam organized a Webinar on the topic "Facing Entrance Exams Post Lockdown" on 6th June, 2020 by the for the Twelfth Standard Students. The Resource people were Mr. JayaKumar A, Entrance Tutor based Thiruvananthapuram (having 27+ years experience in entrance coaching field) and Mr. Vivek R, Business Development Manager, Mathworks India. This webinar helped the school students to acquire knowledge and information about the entrance exam question patterns and the subject areas to which more thrust is to be given with respect to upcoming Engineering/Medical entrance examinations. The session also focused on various available career options in engineering field. This webinar served as a platform to clarify their doubts in the same regard and has instigated an open

REPORT ON THE WEBINAR “CAREER OPPORTUNITIES FOR ENGINEERING ASPIRANTS”

Department of Electronics, Toc H Institute of Science and Technology, Arakkunnam Organized a Webinar for the Higher Secondary students on the topic “Career Opportunities for Engineering Aspirants” on 28th June, 2020 by the. The Resource persons of the event were Mr.Sajith Srambickal,Branch Manager,Pidilite Industries Limited and Mr.Rezwin Basheer,Key Account Manager,Google and Former IMS Mentor. This webinar served as a platform for the school students to acquire knowledge and information about the various available career options. This webinar helped them to explore the various career paths and helped them to choose the correct one. The session was very informative.136 participants from various schools attended and gained information from this session.