



AVIT
AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY



VINAYAKA MISSION'S
RESEARCH FOUNDATION
(Deemed to be University under section 3 of the UGC Act 1956)



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Event Report - Webinar on "Sensor Technology"

17.05.2022

Name of the Event	Webinar on "Sensor Technology"
Date & Time	17.05.2022 & 02.00 PM (IST)
Guest Speaker	Shri. S. Arun Sundar Scientist D, Combat Vehicles Research & Development Establishment (CVRDE) Avadi, Chennai
Total Participants	79
Faculty Members	16
Students	95
Organised By	IETE Students Forum (ISF), AVIT, Industry Academia Cell & Department of Electronics and Communication Engineering
Mode	Online - Microsoft Teams



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D IETE Students Forum (ISF), AVIT, Industry Academia Cell & Department of Electronics and Communication Engineering, Aarupadai Veedu Institute of Technology organized Webinar on “Sensor Technology” for celebration of World Telecommunication & Information Society Day on 17th May 2022.



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Department of Electronics and Communication Engineering in association with
IEEE-SB, IETE Students Forum (ISF), AVIT - Industry Academia Cell

Cordially invites you all for the Webinar on

Sensor Technology

(on the occasion of World Telecommunication & Information Society Day)

on 17-05-2022 @ 02.00 pm | Digital Class Room

Resource person

Shri. S. Arunsundar

Scientist D, Combat Vehicles Research &
Development Establishment (CVRDE) Avadi, Chennai



In the presence of

Dr. G. Selvakumar
Principal, AVIT

Dr. D. Vijendra Babu
VP (Part Time Studies), AVIT

Dr. L. K. Hema,
Prof. & Head / ECE & BME

Coordinators : Mr. R. Karthikeyan, Assistant Professor (Gr-II), ECE
Ms. V. Vanitha, Assistant Professor (Gr-II), ECE



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Event started at 02.00 PM. Mr. Murugan, II Year ECE, & Ms. Akshaya, II Year ECE hosted the event. Dr. L. K. Hema, Professor & Head, ECE & BME, delivered the welcome address and welcomed the gathering.

Dr. D. Vijendra Babu, Vice Principal (Part Time Studies), Professor, ECE has delivered the felicitation address, has facilitated the gatherings with his encouraging words.

Mrs. V. Vanitha, Assistant Professor (Gr-II), ECE introduced the guest of honour of the days event Shri. S. Arun Sundar, Scientist D, Combat Vehicles Research & Development Establishment (CVRDE), Avadi, Chennai.

Then, Speaker delivered the lecture on the topic "Sensor Technology". He explained about the inertial sensors and its applications in the real world. He further elaborated about various inertial sensors like gyroscope, accelerometer etc., and its functionality. He also explained about the commercial IOT sensor applications with the working examples.

Total 68 members were participated in the event. 14 Faculty participants and 54 students were participated in the event.

Mr. R. Karthikeyan, Assistant Professor (Gr-II), ECE delivered the vote of thanks for the day.



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Coordinators : Mr. R. Karthikeyan, Assistant Professor (Gr-II), ECE
Ms. V. Vanitha, Assistant Professor (Gr-II), ECE

Palyanoor, Tamil Nadu, India
AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY



Inertial Navigation

The diagram illustrates the Inertial Navigation process:

- 3 gyros** provide angular velocities $\omega_x, \omega_y, \omega_z$ to the **Compute attitude vector** block.
- 3 accelerometers** provide linear accelerations a_x, a_y, a_z to the **Axis transform** block.
- The **Compute attitude vector** block outputs attitude angles $\theta_x, \theta_y, \theta_z$ to the **Axis transform** block.
- The **Axis transform** block outputs transformed accelerations a_e, a_n, a_v to the **'Standard' I.N. equations as per gimbal system?** block.
- The **'Standard' I.N. equations** block also receives **'Gyro torquing' signals** and outputs **Position** and **Velocity**.

People

- Invite someone
- Share invite
- Presenters (9) Mute all
- Karthikeyan R (Organizer)
- Arun Sundar (Guest)** (Meeting guest)
- DL (Dr. L.K.HEMA (Guest) (Meeting guest)
- E (ECE & BME (Guest) (Meeting guest)
- LB (LAKSHMI SHREE B (Meeting guest)
- PV (PRABHAKARAN V (Meeting guest)
- SR (sandhiya R (Guest) (Meeting guest)
- V (VijayJ (Guest) (Meeting guest)
- VE (vikash kumar ece (Guest) (Meeting guest)

Participants: +35, KE, VM, T, M (M.Atchaya (ECE)), DL (Dr. L.K.HEMA (Guest)), A (Arun Sundar (Guest))

Microsoft Teams

Dr. L.K.HEMA (Guest)

PRABHAKARAN V

Arun Sundar (Guest)

T.Murugan(ECE)II (Guest)

Participants: +28, SR, AR, S, SB, SK, M, M, MS, E, KE, LP, VM, AB



Gyroscope Applications

Scale Factor Stability (ppm)

Bias Stability (deg/h)

Legend:

- RLG - Ring Laser Gyro
- DTG - Dual Tuning Fork Gyro
- IFOG - Interferometric Fiber Optic Gyro
- Quantum - Quartz
- Mechanical - Mechanical
- MEMS - Micro Electro Mechanical Systems
- Rate & Integrating Gyros
- Tactical Missiles
- Flight Control
- Naval Warfare
- Consumer
- Autonomous Navigation
- Strategic Navigation
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- PRABHAKARAN V
- sandhya R (Guest)
- VijayJ (Guest)

Microsoft Teams

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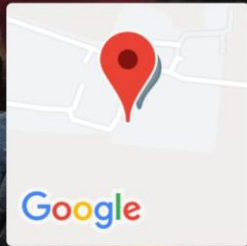


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Paiyanoor, Tamil Nadu, India
AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY, Tamil Nadu
603104, India
Lat 12.656479°
Long 80.1799°
17/05/22 02:26 PM

Microsoft Teams Meeting Interface

Meeting Title: Inertial Navigation

Presenters (9):

- Karthikeyan R (Organizer)
- Arunsundar (Guest)
- Dr. L.K.HEMA (Guest)
- ECE & BME (Guest)
- LAKSHMI SHREE B
- PRABHAKARAN V
- sandhya R (Guest)
- Vijay.J (Guest)
- vikash kumar ece (Guest)

Participants:

- M.Atchaya (ECE) (Guest)
- Dr. L.K.HEMA (Guest)
- Arunsundar (Guest)

The main content is a slide titled "Inertial Navigation" showing a block diagram of an inertial navigation system. The diagram includes sensors like North gyro, East accelerometer, North accelerometer, East gyro, and Azimuth gyro, which are connected to Schuler loops and integrators to produce outputs for Longitude, Latitude, and Cosine latitude. A note indicates that the system is "To gimbal servo motors".



Example Usages of Motion Sensors

People

Invite someone

Share invite

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+35 KE VM T M DL A

