

“ONE DAY WORKSHOP ON SENSORS”

(For B. Sc. II & IV Semester Students)

A sensor is a device that detects the small changes in the environment. Sensors detect the flame, fluid level, moisture, light, toxic elements and are also used to measure the physical parameters such as pressure, temperature, force, height, and displacement. Pressure sensors are used in braking system of automobile, for measuring the blood pressure, and in hyperbaric therapy. Linear variable differential transformer (LVDT) is a displacement sensor and many other physical quantities can be sensed by converting displacement to desired physical quantity. LVDT sensors are used to detect the thickness of currency notes in ATM machines, in pill making machines, in brain probing devices, and also to measure pressure, weight and force. Strain gauge sensors measure stress, torque, pressure, deflection and they are used to detect failures in structures like buildings and bridges. Ultrasonic sensors are used to detect the distance, to detect the obstacle, to measure wind speed, temperature, sea level, and tides. Drone cameras use Ultrasonic sensor to monitor the objects. Resistance Temperature Detector (RTD) sensors are used to detect the engine temperature, oil level, and flame. The Pressure sensor, LVDT sensor, Ultrasonic sensor and RTD sensors are most commonly used sensors.

The Einstein Study Circle forum of Department of Physics, Karnatak Science College, Dharwad had organised one day workshop on “Sensors” for B.Sc. II and IV semester students on 16-07-2023. Twenty students participated in this workshop. The workshop was inaugurated by Principal, Prof. J.L. Kalyan. In his inaugural address, Principal, encouraged the students to develop additional skills and make good use of resources available in the campus. Prof. M.R. Ranganath, H.O.D., Department of Physics, convinced the students about how the workshops will help to explore new ideas in future. Prof. Blaise Lobo, Science Association Chairman, highlighted about the importance of sensors in different fields. Dr. (Smt.) Nirupama J.M., Chairperson, Einstein Study Circle, explained about the objectives and importance of the workshop.

In the morning session, resource person, Dr. (Smt.) Reshma A. Nesargi presented a lecture on classification of sensors, their working principle, and application of sensors. She emphasised on various types of sensors used in medicine, automobile, space mission, sports and also about how to select a sensor for specific application. Resource person, Shri Vinayak Nayak explained about Linear Variable Differential Transformer (LVDT), Ultrasonic sensor,

and Resistance Temperature Detector (RTD) sensor. Resource person Shri Avinash Kamble presented a lecture on Strain gauge and Pressure sensors.

In the afternoon session, hands on training were given to the students on LVDT, Strain gauge, Pressure sensor, RTD sensor, Ultrasonic sensor and Piezo Electric sensor. Students were very enthusiastic and learnt the performance of these sensors.

Valedictory function was held at the end of the day. In this function, many participants gave feedback on the workshop and thanked the organisers. They requested organizers to give a similar exposure to students on various branches of Physics too. Miss Tejaswini Devaramani and Miss Shrutika Pharale sung a prayer song. Miss Ashita B. Ambiger anchored the programme, Miss Chaitra Kannur presented a vote of thanks and Kumar Prajwal P. Patil, student secretary of Einstein Study Circle assisted in organising the workshop. The participation certificates were distributed to all the students.







