

# EVENT REPORT

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Title: **Sensors and PC-based Data Acquisition for Maintenance and Innovation in Electrical Engineering**

Date: **12<sup>th</sup> May 2023**

Venue: **B & B Institute of Technology, Vallabh Vidyanagar**

Organized by: **Electrical Engineering Department, B & B Institute of Technology**

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The Electrical Engineering Department of B & B Institute of Technology organized a comprehensive program on "Sensors and PC-based Data Acquisition for Maintenance and Innovation in Electrical Engineering" on 12<sup>th</sup> May 2023 under Students Startup and Innovation Policy (SSIP) Cell. The event aimed to provide insights into the latest advancements in sensor technology and data acquisition systems, emphasizing their applications in maintenance and innovation within the field of electrical engineering.

## Objectives

- To educate participants on the fundamental concepts of sensors and data acquisition systems.
- To demonstrate the integration of sensors with PC-based data acquisition for monitoring and maintenance.
- To explore innovative applications of these technologies in electrical engineering.
- To provide hands-on experience with contemporary tools and technologies.

## Program Details

### Inaugural Session

The event commenced with an inaugural session presided over by Prof. A. A. Parmar, Head of the Electrical Engineering Department. Prof. A. A. Parmar highlighted the importance of sensor technology and data acquisition systems in modern electrical engineering practices. He stressed the need for continual learning and adaptation to new technologies for maintaining industry standards and fostering innovation.

### Keynote Address

The keynote address was delivered by Dr. Kalpeshkumar J. Chudasama, a renowned expert in sensor technology from A. D. Patel Institute of Technology, New V. V. Nagarthe. Dr. Chudasama discussed the evolution of sensor technology and its critical role in predictive maintenance and real-time monitoring systems. He presented case studies demonstrating successful implementations of PC-based data acquisition systems in various industrial applications.

### Technical Sessions

#### Session 1: Fundamentals of Sensors and Data Acquisition

Dr. Chudasama covered the basics of sensors, including types, working principles, and selection criteria. The session provided an overview of data acquisition systems,

highlighting the importance of signal conditioning, data sampling, and the role of software in data analysis.

#### Session 2: Integration of Sensors with PC-based Data Acquisition Systems

Dr. Chudasama focused on the practical aspects of integrating sensors with PC-based data acquisition systems. The session included demonstrations on interfacing various sensors with data acquisition hardware and using software tools for data visualization and analysis. Participants were introduced to LabVIEW, a popular software platform for data acquisition and instrument control.

#### Session 3: Applications in Maintenance and Innovation

Dr. Chudasama discussed real-world applications of sensors and data acquisition systems in electrical engineering. He emphasized their use in predictive maintenance, fault detection, and energy management. The session showcased innovative projects where sensor data was used to improve system efficiency and reliability.

#### **Feedback and Conclusion**

The program concluded with a feedback session where participants shared their experiences and suggestions. The feedback was overwhelmingly positive, with many participants appreciating the depth and practicality of the sessions. Prof. Jayraj Solanki thanked all the speakers and participants for their active involvement and encouraged them to apply the knowledge gained in their respective fields.

#### **Outcomes**

- Enhanced understanding of sensor technologies and data acquisition systems among participants.
- Practical experience in integrating sensors with PC-based data acquisition systems.
- Increased awareness of the applications of these technologies in maintenance and innovation.
- Strengthened collaboration between academia and industry in the field of electrical engineering.

The event successfully met its objectives, providing valuable insights and hands-on experience to participants. It underscored the significance of staying updated with technological advancements for driving innovation and maintaining high standards in electrical engineering.