

ICE ASSOCIATION NEWSLETTER



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EDITOR'S NOTE:

Greetings,

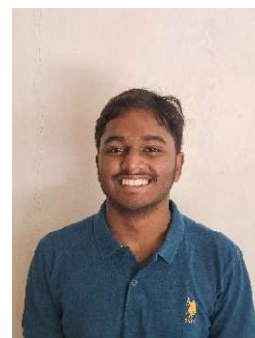
As the editor for the 2020 edition of Sensors newsletter, I am pleased to introduce the latest issue of our newsletter. In this edition, we have included articles and features that highlight the latest research and developments in our very own department and in the field of Instrumentation and Control Engineering.

In this issue, you'll find articles that cover topics such as the papers published by our department, the patents applied, conferences attended and so on. We will also see about the latest trends and developments in our field of Instrumentation and Control engineering. We hope that these articles will be informative and insightful, and that they will inspire you to learn more about the Instrumentation and Control field and motivate you to participate in the future editions of Sensors.

We are always looking for ways to improve our newsletter and provide content that is relevant and useful to our readers. If you have any feedback or suggestions for future topics, please do not hesitate to contact us.

Thank you for your continued support and interest in Sensors.

-Mukil





VISION AND MISSION:

The department of Instrumentation and Control has always strived for perfection, and this is achieved by following our departments Vision and Mission

Vision:

- To become a world-class centre of excellence in Instrumentation and Control Engineering.

Mission:

- To inspire our students to realise their aspirations and potential through quality education in Instrumentation and Control Engineering.
- To enhance knowledge, create passion for learning, foster innovation, and nurture talents towards serving the society and the country.
- To encourage our faculty and students to keep in pace with the latest technological developments and to pursue research in those areas.
- To enable our students to engage themselves in entrepreneurship and product development for the benefit of the global community.

LIST OF PAPERS PUBLISHED BY DEPARTMENT:

The department of Instrumentation and Control has garnered a number of breakthroughs in numerous fields related to its domain in the year 2020. Listed below is the gist of a few of the 37 papers published by the department:

1. Novel resistor-capacitor(RC) network-based capacitance signal conditioning circuit for tip clearance measurement on gas turbine engine
2. Piezoelectric energy harvesting from DC-DC converters
3. Design, analysis and experimental investigation of a rotational piezoelectric energy harvester with storage system
4. Design of Genetic Algorithm based PID controller for a joule heated shape memory spring driven ball and beam system
5. Signal flow graph model and control of dual input boost converter with voltage multiplier cells
6. Experimental Evaluation of Liquid Mixing using Piezo Actuated Pump System
7. A Decentralized Signal Control for Non-lane-based Heterogeneous Traffic under V2V Communication
8. Study of Skin Flow motion pattern using photoplethysmogram
9. Study of absorption of radio frequency field by gold nanoparticles and nanoclusters in biological medium
10. State estimation for a networked control system with packet delay, packet dropouts and uncertain observation in S-E and C-A channel

LIST OF WORKSHOPS CONDUCTED BY THE DEPARTMENT:

Our department over the years has always strived toward creating a more hands-on learning experience for anyone imbued with the passion for expanding knowledge across different domains and to achieve that very aim, the esteemed faculty of the department have conducted several workshops, a few of them being, "MHRD sponsored GIAN workshop titled INTEGRATION OF BIOMECHANICS, CONTROL AND NEUROPHYSIOLOGY", "Introduction to Machine Learning and Deep Learning", "Recent trends in Industrial Process Automation", "Technology Based Entrepreneurship Development", "Capacity Building of Women Managers in Higher Education" and "Innovative and Sustainable Chemical and Process Analysis, Design and Synthesis".

PLACEMENT STATS

In the academic year 2019-2020, out of the total of 64 students who went through the placement process, a whopping 62 students cleared the process and have been placed in various core, software and management roles in top companies, boasting a near 100% placement record for this academic year. The highest package offered has gone up to 38 Lakhs per Annum, a huge jump of 7 Lakhs from the previous year highest of 31 Lakhs per Annum. With more and more students opting for on campus placements, the number of companies that visit our campus and hire our department students are also consistently keeping up with the increasing applications and hence, we are always able to maintain a near 100% placement percentage.

TECH CORNER:

“Wearable sensors move way beyond fitness trackers”

Wearables jumped 30% in 2020 (compared to all other electronics) and there are no signs of a slowdown. That's because this technology has gotten incredibly affordable and efficient in the past few years. Some cool, new product that leverages the IoT is smart motorcycle helmets. At CES 2020, a chinese startup specialising in cycling and skiing helmets, unveiled one of the most advanced smart motorcycle helmets. The 'Tali Connected Smart Lid Concept' has Brake And Turn Signals which may pave the way to the future of motorcycling. The startup 'Livall' combines visibility with connectivity for commuter and leisure cyclists. The new **BH51M Neo**, is a robust, waterproof, fashionable smart helmet that is simple-to-use, comfortable, and packed full of genuinely useful smart tech that unleashes the complete smart features that a helmet may get. In addition to front and brake warning lights and Auto off and anti-loss alarms it has got a lot of key features which include:

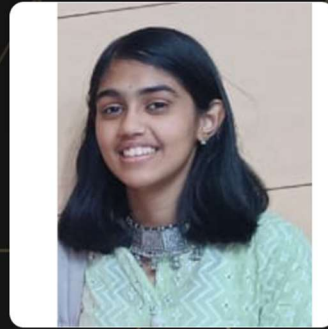
- **Smart Lighting** – integrates adaptive technology to ensure your visibility in dark conditions. Operate wireless LED turn signals via handlebar remote control to alert traffic of turning direction for enhanced visibility and rider safety.
- **Fall Detection** – In the event of an accident, the emergency system will kick in automatically and send your GPS location to your emergency contacts. Along with this feature press for sos is added wherein you can press the red button if you feel any sort of discomfort, that prompts a message to the emergency contacts.
- **One-Click Answer**- Answer phone calls using the remote control and enjoy clear sound both ways with the helmet's built-in Bluetooth speakers and wind-proof microphone.
- **Voice Navigation**-Listen to GPS voice navigation via the built-in speaker with your connected smartphone.

- **Stereo speakers**-Quality music, audiobook and podcast playback is delivered through Bluetooth stereo speakers strategically placed above the ears, allowing you to stay alert to surrounding traffic.

EDITORIAL BOARD:



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