

**DEPARTMENT OF ELECTRICAL
AND ELECTRONICS ENGINEERING**

CURRENTS
NEWSLETTER

August - December 2021

NEW HORIZON COLLEGE OF ENGINEERING

VISION

To emerge as an institute of eminence in the fields of engineering, technology and management in serving the industry and the nation by empowering students with a high degree of technical, managerial and practical competence.

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- To strengthen the theoretical, practical and ethical dimensions of the learning process by fostering a culture of research & innovation among faculty members and students. To encourage long-term interaction between the academia and industry through their involvement in the design of curriculum and its hands-on implementation.
- To strengthen and mould students in professional, ethical, social and environmental dimensions by encouraging participation in co-curricular and extracurricular activities

QUALITY POLICY

To provide educational services of the highest quality both curricular and co-curricular to enable students integrate skills and serve the industry and society equally well at global level

VALUES:

- Academic Freedom
- Inclusiveness
- Professionalism
- Integrity
- Innovation
- Social Responsibility

ABOUT DEPARTMENT

Welcome to the Department of Electrical & Electronics Engineering (EEE) at New Horizon College of Engineering (NHCE), Bangalore. EEE is one of the prestigious branches of Engineering and one among the oldest departments of NHCE-Bangalore started in 2001. The EEE Department has been playing a vital role in producing engineers and technologists of high caliber ever since it was established in the year 2001. The Department is accredited by NAAC with 'A' Grade and accredited by NBA. The vision of EEE Department is to create contemporary Engineers, innovators and entrepreneurs to make a better nation and in turn, a better world. A critical investigation and innovation into the modern state-of-art and cutting edge technology lead to the fact that an electrical graduate fits better in today's competitive world.

- The strength of the department is highly qualified faculty members with expertise in various fields of electrical engineering, state of art laboratory facilities. The department is inclined towards bridging the gap between Industry and academia by collaborating with Multinational Companies in the field of Electrical Engineering.

- Indo-French Center of Excellence in Electricity, Automation and Energy (IFCEEAE) is one such initiative evolved through "MoU" with French Ministry of National Education and Schneider Electric India Pvt. Ltd., The main objectives of IFCEEAE are

- To train the students of all streams of engineering in automation field

- To facilitate interdisciplinary and applied research with a focus on innovative product development

- To provide excellent career opportunities to students through exchange programs with French Universities, industrial training, innovative learning and R & D activities especially in the areas like Smart Grid, Internet of things (IoT), Energy Management Systems, Embedded systems, Supervisory Control and Data Acquisition (SCADA) and industrial automation.

- The Department nurtures the young minds beyond the curriculum by facilitating technical clubs in promoting technical events, community development/society impact and universal value/ethics programs. In supporting to this, Department of Electrical & Electronics Engineering has established Institute of Electrical and Electronics Engineers (IEEE) – Power Electronics Society (PELS) Student Branch Chapter (Geo-Code: SBC66131) which is the non-profitable, world largest technical professional organization for the advancement of technology. The students have a greater exposure and flexibility in campus placements in core industries, IT sectors and Public Sector Units (PSU).

VISION

To evolve into a centre of excellence in Electrical and Electronics Engineering for bringing out contemporary engineers, innovators, researchers and entrepreneurs for serving nation

MISSION

- To provide suitable forums to enhance the teaching-learning, research and development activities.
- Framing and continuously updating the curriculum to bridge the gap between industry and academia in the contemporary world and serve society.
- To inculcate awareness and responsibility towards the environment and ethical values.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: To provide good learning environment to develop entrepreneurship capabilities in various areas of Electrical and Electronics Engineering with enhanced efficiency, productivity, cost effectiveness and technological empowerment of human resource.

PEO2: To inculcate research capabilities in the areas of Electrical & Electronics Engineering to identify, comprehend and solve problems and adopt themselves to rapidly evolving technology.

PEO3: To create high standards of moral and ethical values among the graduates to transform them as responsible citizens of the nation.

MESSAGE FROM PRINCIPAL & HOD

Dear all,

In our college, we and our faculty always think we need to teach beyond curriculum to make our students 'Industry Ready'. Recent observations made by many stalwarts in the industry indicate the fact that most Engineering Graduates out of colleges are not employable. NHCE has always been in the forefront in ensuring that students are employable. It gives me immense pleasure to write a few words as prologue to the in-house 2021 Newsletter of the EEE Department. The issue is designed to present the events that have occurred in the department makes this newsletter resourceful and informative. I congratulate all the contributors and the editorial board for bringing out such a nice issue. Happy Reading.



Dr. MANJUNATHA
PRINCIPAL, NHCE

Dear readers,

I feel happy to release Newsletter titled as "Currents" 2021. Our editorial team has done an appreciable job in reporting all the events which have taken place in the Department over a time period of seven months. To all your notice, our Newsletter is presenting you the success of major events witnessed by students, faculty and external participants of Electrical Engineering fields. The objective of the Technical Newsletter is to provide information about involvement, inspiration and dedication in diversified areas of Electrical Engineering from students, faculty, parents and alumni- with a timely and honest portrait of our Department activities. This has made an earnest attempt in this direction and all the credit for its success falls upon faculty and students who have worked with dedication and enthusiasm to bring this forward. I convey my regards to all the readers.



Dr. M. MAHESH
Prof. & HOD EEE, NHCE

EDITORIAL TEAM FACULTY ADVISOR



Prof. RASHMI N

EEE DEPARTMENT ACTIVITIES



Pic: Prize receiving moment at VTU state level competition by Rohith kumar Reddy

Mr. M Rohith Kumar Reddy 5th Semester EEE student won the GOLD MEDAL in VTU state level inter collegiate Wrestling and Judo competition 2021-2022 held on 16th and 17th December in KLSVDIT haliyal under 65 kg-category is the proudest moment to the department of EEE. Heartily congratulation from Principal, HOD-EEE, Faculty and students of NHCE.

INDUSTRIAL VISIT



Pic: Industrial visit by 5th sem students and staff to Rajamne and Hegde services Pvt Ltd, Tumkuru

The Department of Electrical and Electronics Engineering has organized industrial visit with support of engineers from Rajamne and Hegde services Pvt Ltd, Tumkuru for 5th sem EEE students. The bus transportation facility was provided by NHCE to Tumkuru.

The engineers from the company provided a platform, as a part of curriculum students are thought with testing and commissioning of electrical equipments before installation.

The company have the repair station for all the costumer motors and generators come in the company for rewinding and repairing. Even the motors and generators are opened up and cleaned up for further processes.

The company also does some tests such as heat resistant tests for outdoor AC machines. The machines came for repair can be subjected to dynamic balancing also, a way of balancing machines by rotating parts quickly and measuring the imbalance using electronic equipment. The imbalance measured can then be corrected by adding or subtracting weight from the rotating parts until the vibration is reduced.

The company provides internship for around 15 electrical students every year. The customers are from all over India and other few countries also.

The visit was organized with the support of faculty coordinators, Ms.Gunapriya B and faculty who took in charge the visit are Ms.Rashmi N, Ms.Deepa VB, Mr.Satishkumar, Mr. Vinod Kumar and lab instructors. A Special thanks to our Head of the Department Dr. Mahesh M for his continuous encouragement.

CLUB EVENT



Pic: Energy conservation campaign titled "Spare a watt, save a lot" by Green Energy Club

Department of Electrical & Electronics Engineering conducted the Energy conservation campaign titled "Spare a watt, save a lot" by Green Energy Club, at Government school, Marathahalli. To educate the school students regarding importance of Energy conservation and its impact on the society.

Around 38 club members educated around 230 students of the school from first standard to seventh standard of the school.

The fundamental feature of this event by Green Energy Club was to bring familiarity with Energy Conservation among the school students by directing them to involve in the act of utilizing less energy by different strategies and encouraging them to save energy. The team was divided into seven groups, and each group was connected with classes separately. The presentation of Energy conservation included both English and Kannada languages for better understanding. All the students were very energetic and interactive throughout the session. At the end, a stationary kit was distributed among the students. Overall, it was a learning experience for the students of the school as well as for those volunteering. The event was concluded by a vote of thanks by the president of Green Energy Club, Bindhu V. The event was organized successfully with the support of our faculty coordinators, Mr. Vinod Kumar and Ms.M.. Karthika. And a Special thanks to our Head of the Department Dr. Mahesh M and the department staff members for the encouragement towards this event.

At the end of the event, School students realized the Energy conservation and its impact in modern energy scenario and gained knowledge about Energy saving methodologies.

LECTURE PROGRAM IN ASSOCIATION WITH IEEE-PELS NHCE

Dynamic Testing of Inverter (4 inverters and 4 electric machines set-up)



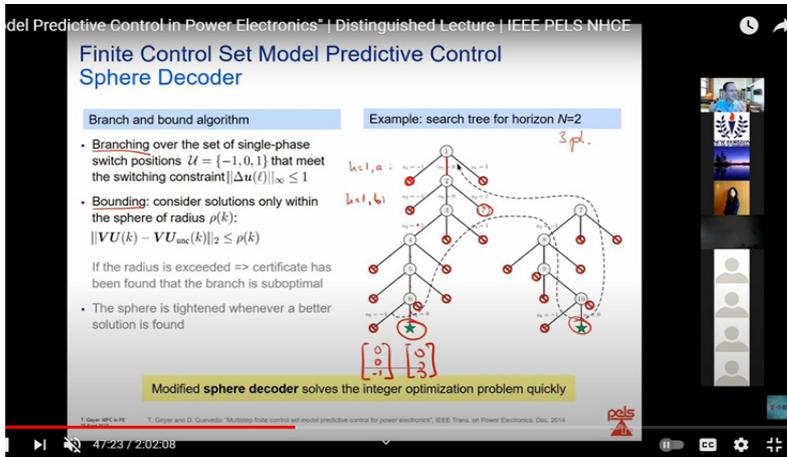
Pic: Lecture Program on “Wide Bandgap (WBG) Power Electronics Systems for Heavy-Duty Vehicles”

The IEEE PELS NHCE Student Branch Chapter from Department of Electrical and Electronics Engineering, New Horizon College of Engineering, Bengaluru is organized the Distinguished Lecture Program on “Wide Bandgap (WBG) Power Electronics Systems for Heavy-Duty Vehicles” on 23rd October 2021, Saturday from 08.00 AM to 10.00 AM in association with IEEE PELS Bangalore Chapter. Dr. Brij N. Singh; John Deere Inc., North Dakota, USA acted as a resource person.

The outcome of the program is to bring the researchers and academic experts from reputed institutes of our country to a collective gathering for exchanging and sharing the knowledge about the recent developments and research challenges in Wide Bandgap (WBG) Power Electronics Systems for Heavy-Duty Vehicles. This presentation covered publicly known information on the 200 kW 1050 VDC silicon carbide (SiC) inverter technology development project in John Deere. The SiC inverter converts vehicle engine power into electrical power needed for the permanent-magnet-motor based electric power train used in heavy-duty construction and mining vehicles. The presentation also covered design, development, and test verification of WBG technology deployed in the successful realization of a power-dense (43 kW/Liter) high-temperature (suitable for 115°C coolant) high-efficiency (> 98% over entire range of coolant) SiC dual-inverter.

The entire session is very informative and enthusiastic manner in the area of power electronics industry. The eminent expert from the John Deere Inc., North Dakota, USA delivered the lecture and his talk has been very well received by the participants. Congratulations to Event Coordinator Mr. SatishKumar. D, Sr. Assistant Professor and student coordinators from Department of EEE, NHCE for successfully organized this event.

LECTURE PROGRAM IN ASSOCIATION WITH IEEE PELS NHCE



Pic: Lecture Program on “Model predictive control in power electronics: a critical review and recent industrial products”

The IEEE PELS NHCE Student Branch Chapter from Department of Electrical and Electronics Engineering, New Horizon College of Engineering, Bengaluru organized the distinguished lecture Program on “Model predictive control in power electronics: a critical review and recent industrial products” on 29th September 2021, Wednesday from 05.00 PM to 07.00 PM in association with IEEE PELS Bangalore Chapter.

Dr. Tobias Geyer, ABB Medium - Voltage Drives, Switzerland and Stellenbosch University, South Africa served as a resource person. The outcome of the program is to bring the researchers and academic experts from reputed institutes of our country to a collective gathering for exchanging and sharing the knowledge about the recent developments and research challenges in model predictive control in power electronics: a critical review and recent industrial products. The number of publications per year on predictive control doubles every three years. The strong interest in academia is reflected in industry with two recent product releases. Both use model predictive control for high-power variable speed drives which improves efficiency, increases rated power and lowers the overall system cost. This lecture introduces the main predictive control methods available today in a concise yet intuitively accessible way. The lesser known methods are also discussed, providing a comprehensive introduction to the subject. The first two industrial success stories are presented in detail, and their commercial benefits are explained. The lecture concludes with a critical assessment of the state-of-the-art in predictive control and points out directions for future research. The entire session is very informative and enthusiastic manner in the area of power electronics industry. The eminent expert from the ABB Medium - Voltage Drives, Switzerland and Stellenbosch University, South Africa delivered the lecture and his talk has been very well received by the 100 participants. Congratulations to event Coordinator Dr. Vinoth Kumar K, Associate Professor, Department of EEE, NHCE & IEEE PELS NHCE SBC Advisor successfully organized this event.

CLUB EVENT



Pic: Dr. M. Mahesh , EEE HOD honoring the Speaker Mr. Alok Soni

The "U Create Club" of Department of Electrical & Electronics Engineering and ED cell organized "Think like an Entrepreneur" program on 25th November 2021, 2:00 to 3:00 PM for 2nd year students of NHCE.

Developing an entrepreneurial mindset is all about altering your perspective: No matter how long you've been in business, you're starting it anew today. The Speaker Mr. Alok Soni, Ex – Yourstory, Khyaal Bangalore. Alumni from , Bits Pilani.

He introduced the different aspects of entrepreneurship and emphasized that zeal and great idea are the only ingredients in a recipe for business startup. He mentioned that the reason that people do not start their new ventures in a country like India is due to non-awareness amongst the population of India and decides to go for jobs in private or government sectors so as to minimize the risk. Also highlighted other startups success their views and planning that took over the markets , spoke about the Skills required by a successful Entrepreneur.

At the end of the event, students were able to

- Think like an Entrepreneurship.
- Promote their ideas and innovation into a business model.
- Take necessary action for their start-up.
- Study case studies details of successful young Entrepreneurs.
- Think pragmatic idealism.
- Understand the ecosystem in India.

It was found that the guests lecture as an excellent event and found the information imparted to them as relevant. The students expressed their satisfaction towards the event organized in falconary hall, NHCE.

