



RENEWS

NEWSLETTER -
DEPARTMENT OF ELECTRICAL
& ELECTRONICS ENGINEERING

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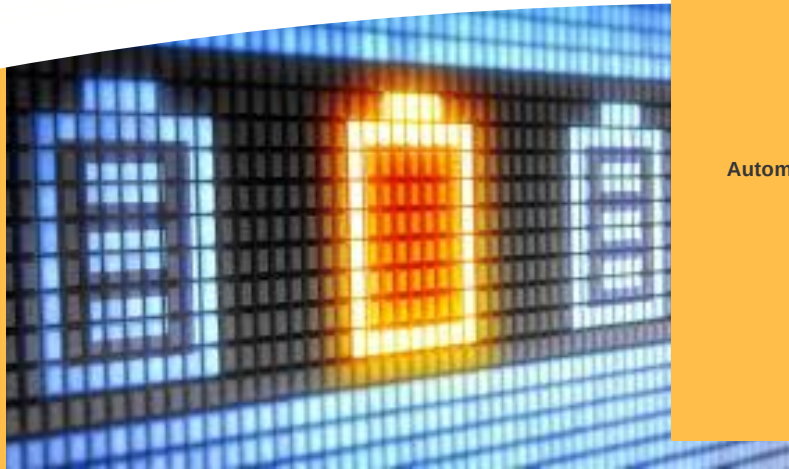
INSTITUTE VISION

To be a nationally recognized centre of excellence in engineering education and research for creating professionally competent and socially committed engineers equipped to meet the developing technological and socio-economic needs.

INSTITUTE MISSION

We are committed to

1. Impart technical education through value-based holistic teaching and learning integrating innovative practices.
2. Nurture the practice of real-world problem solving, the spirit of entrepreneurship, and critical thinking among the students.
3. Foster a conducive environment for Research, Innovation, and extension services.
4. Develop the potential of human resources to meet the requirements of cutting-edge technology.
5. Prepare all students for successful careers based on a strong moral & ethical Foundation.



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THE FUTURE OF ENERGY STORAGE

By far, the world's most popular battery on the market today is the lithium-ion (Li-ion) battery. But Li-ion batteries are meeting serious challenges. Li-ion batteries also have performance limitations for some applications. They cannot discharge at full power for more than four to six hours, preventing them from stabilizing grid applications using solar or wind energy against consecutive cloudy or calm days. And they cannot reach the high-energy densities required to power long-haul trucks, rail, marine shipping, and aviation, which requires two to three times the energy density of Li-ion. In our climate-constrained world, we must search beyond Li-ion batteries to meet these energy storage needs.

The biggest change so far is the rapid deployment of wind, solar, and battery storage driven by falling prices, government incentives, and the climate emergency. Predictions are for global wind and solar capacity to surpass gas and coal by 2024. These deployments, impressive as they are, are not enough to decarbonize the grid. We have no commercial many-day battery storage needed to stabilize a primarily renewable grid for consecutive cloudy or calm days. In addition, we expect demand for grid electricity to grow sharply as EVs replace gasoline cars and as buildings electrify to replace natural gas. Offshore wind remains a largely untapped resource that could help supply the additional demand, and we need other long-duration energy storage options for the many-day, monthly, and seasonal time frames. JCESR is working on next-generation organic redox flow batteries for 10+ hour applications, and we need new chemical energy carriers such as green hydrogen, ammonia, and other hydrogen-rich, carbon-free carriers yet to be discovered.

Ideally, energy storage will take many new forms, spanning next-generation batteries and chemical energy carriers, as well as thermal storage (with steam, molten salt, or other materials as the carrier) and gravity storage (where heavy materials such as rocks or cement are raised and lowered to store and release energy)

We want to be able to convert energy easily among electricity, heat, mechanical motion, and chemical bonds. We might, for example, convert electricity to green hydrogen by electrolysis or hydrogen to electricity in fuel cells or combustion turbines.

We could power transportation with batteries in electric passenger cars and with fuel cells and green hydrogen (or one of its derivatives) in HEAVY-DUTY transportation. And we could power heavy industry with electrochemical manufacturing using carbon-free feedstocks. This kind of integrated, flexible energy system allows us to direct energy via multiple routes to a given application, increasing reliability should one or another energy source be unavailable. Such an integrated, flexible, [and] comprehensive energy system would replace our present fragmented energy system, where oil and gasoline power transportation, coal and gas power industry, and electricity, the most flexible energy carrier, powers lighting, heating, cooling, appliances, motors, electronics, communications, and light rail.

Two of these energy carriers are fossil fuels must be reduced or eliminated to avoid the worst consequences of climate change; the third, electricity, combined with a carbon-free energy carrier such as green hydrogen, is poised to become the backbone of the future energy system. Getting to this new energy system will be a very interesting journey.



DEPARTMENT VISION

Become a premier department to groom professionally competent and ethically responsible Electrical Engineers capable to address the changing needs of the society.

DEPARTMENT MISSION

- The Department is committed to:
1. Impart value based technical education leading to quality professionals the field of Electrical Engineering.
 2. Inculcate team spirit and leadership qualities in the professional career.
 3. Establish state-of-the-art support facilities to do research and innovation on societal needs
 4. Instill moral and ethical values among the faculty and students

NEW JOINING



Mrs. SMITHA SUNIL
Assistant Professor



Automakers are torn between Wi-Fi- and 5G-connected cars

All drivers know the stress of unwanted, unclear road conditions and the turmoil it can cause if two vehicles—or a vehicle and pedestrian—are in the wrong place at the wrong time. Road collisions are still too high for safety authorities, and even car manufacturers, to sit back and watch things unfold.

Organisations are becoming more proactive in adopting solutions to help keep drivers safe on the road, which is why connectivity is such a crucial component of future mobility. More importantly, technology integration is made much easier in electric vehicles (EVs), which adds another string of benefits to the transition from fossil-fuel-powered cars. So how does connectivity actually support the industry and why are businesses thinking hard and fast about how to adopt connected car solutions? Cellular-vehicle-to-everything (C-V2X) is the other choice of connected service, which allows further connectivity between cars and the infrastructure that surrounds them. Leveraging 5G connections, vehicles will be able to understand more about what is going on around them.

The safety aspect of this comes when you combine connected car services with on-board cameras, sensors, lidar, and radar, to encourage a full process of information and delivery. Connectivity enables information gathering, which is processed by the car, and corroborated by the solutions that monitor vehicles' surroundings. The ultimate use of infrastructure and data allows cars to do the driving.

Wi-Fi—known as dedicated short-range communication (DSRC) in cars—is used constantly in daily life, so many consumers are aware of the pros and cons; the short-distance connection and the ability for low-latency wi-fi installation in various applications.

C-V2X leverages a multitude of connections, such as vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), vehicle-to-pedestrian (V2P), and vehicle-to-cloud (V2C). Such a solution is also capable of low-latency connectivity, but allows further applications to be made than simple sharing data between vehicles, including intelligent transportation management and congestion control.

Vodafone Automotive has a team dedicated to managing vehicle moments by enabling V2X connectivity, which is capable of sharing data between cars and traffic lights, road signs, and other critical infrastructure that informs drivers of road hazards and changes on their routes.

Featured products by the leading hardware developer Qualcomm, are installed in vehicle computers to enable ultra-high speeds and ultra-low latency connectivity and leverage concurrent 2G, 3G, 4G, and 5G networks.

The entrance of 5G into the world of automotive has enabled one major benefit, which is the significant reduction in latency, minimising delays to just a millisecond in applications where 4G could take up to 30 milliseconds.

“Wi-Fi is available to cars, but cellular-vehicle-to-everything will leverage 5G and cloud to keep EV drivers safe, and keep them moving forward”

With consistent connected car solutions in place, drivers will be more informed about the activities on the road ahead and carmakers hope to reduce the number of collisions, saving thousands of lives in the future.



EYE ON IT

BYD showcased its latest vehicle, the BYD Seagull, which presents an opportunity for more affordable electric mobility—value below £8,000 (US\$9,900) and is said to be a suitable solution for the Indian market among many. BYD is also one of the dominant forces in the EV market with access to the technology and international trade mechanisms to ship its vehicles globally, contending with its main rival, Tesla, in its efforts to create a worldwide all-electric vehicle supply chain.

From an area of mass-market production to luxury and performance, BYD Yangwang brand presented its U9 supercar and U8 vehicle alongside other high-end vehicle concepts from pure-play and traditional OEMs.



EVENTS



RENEWE - DEPARTMENT ASSOCIATION INAUGURATION

Department association was inaugurated by Dr. Krishnakumar M, Station Engineer, KSEB on 29th March 2023 and the office bearers for the academic year were elected. A technical session was also conducted as part of the inauguration.

WORKSHOP ON MOTOR WINDING

Workshop on motor winding was conducted on the April 11 2023. The students got an awareness about the manual motor winding connections. The resource person for the workshop was Mr. Binu C K, Engineer, PWD.



TRAINING ON SOLAR PANEL CONSTRUCTION AND INSTALLATION BY LEGRAND

Students got training in the construction and installation of Solar panels. The training was conducted by Legrand company for 4 days from March 22nd - 25th, 2023. Students attended the exam after the training program and got certificates.

EVENTS

CIRCUIT DESIGN COMPETITION

As part of association inauguration a circuit design competition was conducted for the first year students. Akshay Shaji and Abhijith K S got first prize in the competition. Around 30 students from various departments participated in the event as a team of two members each.



SEMINAR ON ADVANCED SOLAR TECHNOLOGY

A seminar was conducted on latest advancements in solar technology by RECON Energies Pvt. Ltd. on 24th March 2023. CMD of the company Mr. Benny Mathew handled the session and detailed about the recent trends in Solar Technology.

INTERCOLLEGE QUIZ COMPETITION AT MBITS

Our six students Ajmal Siyad & Abhijith S participated in Intercollege Quiz competition held at MBITS Engineering College and entered the Final round and got certificate of appreciation.



ACHIEVEMENTS

- Asst. Prof. Akhil Beshy & Asst. Prof. Sithara Azeez successfully completed FDP on Expanding horizons in the World of Optimization Research at MA College of Engineering
- Asst. Prof. Neethu B & Asst. Prof. Ragi R successfully completed FDP on Journey Towards a Green Future: Recent Technologies, Trends and Challenges
- Three faculties of the department successfully completed and got certified in UHV-I course offered by AICTE.
- Our faculties Ms. Neethu B & Ms. Ragi R won second prize in the quiz competition conducted in the college as part of

AWARDS & HONOURS



- Our faculties Ms. Neethu B & Ms. Ragi R won second prize in the quiz competition conducted in the college as part of National Science Day.
- Our faculties Ms. Neethu B & Ms. Ragi R won prizes in International Speech competition conducted by VISAT Toastmasters Club.

SEEM - INAUGURATION

SEEM Professional society was inaugurated by Mr. Azeem K, Secretary SEEM Kerala Chapter on April 18th 2023. SEEM - A Professional society consisting of eminent personalities from all over India working in the Energy Sector. This society will surely benefit to students to get the latest updations and trends in the Energy Sector.



WORLD'S FIRST SOLAR PANEL 'CARPET' ON RAILWAY TRACKS

European startup Sun-Ways has devised a mechanical device to deploy removable solar panels along railway tracks.

This innovation could be implemented on half of the railway lines across the globe, according to the Switzerland-based energy startup. The area between railroad lines is broad enough to accommodate standard-sized solar panels without impeding train passage, claims co-founder Sun-Ways, Baptiste Danichert.

Sun-Ways employs factory-preassembled solar panels from Switzerland. The one-meter-wide panels are simply positioned between train lines and fastened to the rails using a piston mechanism. A train created by Swiss track upkeep company Scheuchzer performs installation mechanically.

The train spreads the photovoltaic panels out along the rail track "like an unrolling carpet" as it travels, according to Sun-Ways.



UPCOMING EVENTS

- Tech Puzzle Competition - 25th May
- MINDFIZZ - 26th May
- 1 DAY FDP ON PLC WIRING AND PROGRAMMING - 12th May

SPOT LIGHT



ഇലഞ്ഞി വിസാറ്റ് എൻജിനീയറിംഗ് കോളജിൽ എറണാകുളം എൻജി മാനേജ്മെന്റ് സെന്റർ കേരളയുമായി ഹകരിച്ച് നടത്തിയ ശില്പശാല പഞ്ചായത്ത് പ്രസിഡന്റ് അന്നമ്മ ആൻഡ്രൂസ് ഉദ്ഘാടനം ചെയ്യുന്നു.



• ഇലഞ്ഞി വിസാറ്റ് എഞ്ചിനീയറിങ് കോളജിൽ നടന്ന മോട്ടോർ വൈൻഡിങ് ശില്പശാലയുടെ ഉദ്ഘാടനം പി.ഡബ്ല്യു.ഡി പാലാ ഇലക്ട്രിക്കൽ വിങ് സി.കെ ബിനു നിർവഹിച്ചു.



• വിസാറ്റ് എൻജിനീയറിങ് കോളജിൽ ഇലക്ട്രിക്കൽ ആൻഡ് ഇലക്ട്രോണിക്സ് എൻജിനീയറിങ് അസോസിയേഷൻ റിന്യൂ ഡോ. കൃഷ്ണകുമാർ ഉദ്ഘാടനം ചെയ്യുന്നു.