



**CHRIST**  
(DEEMED TO BE UNIVERSITY)  
BANGALORE · INDIA

# SURGE

## NEWSLETTER

— JANUARY 2022 —

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**07**

**HAPPY NEW YEAR**  
**2022**

**Department of Electrical and Electronics  
Engineering  
School of Engineering and Technology**

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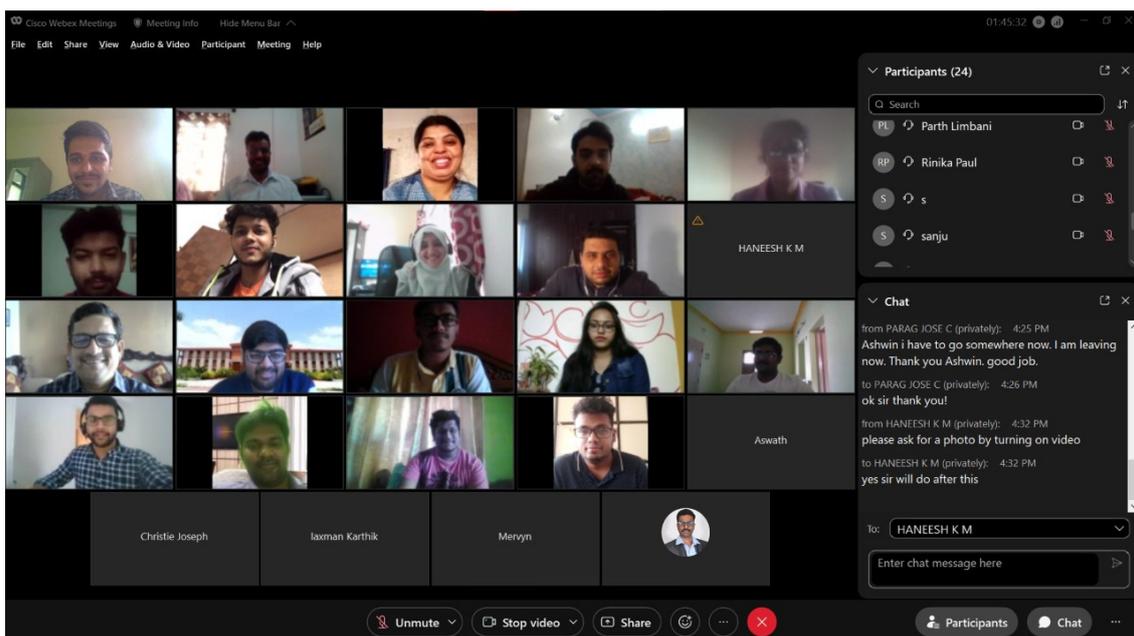
**Royesee J M**  
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## ALUMNI MEET

On the 26th of January 2022, the Department of Electrical and Electronics Engineering organized an alumni meet for the graduated students of the department. The idea behind this session was to create a better alumni network that allows students of the department to be better connected and find opportunities through each other easily. As a part of this, a short program was organised on Cisco WebEx. This program started off with Dr. Joseph Rodrigues addressing the gathering, taking them through the changes that the department has gone through over the years.

This was followed by the announcement of office bearers for the alumni association. Having installed the office bearers into their roles, the session delved into experience sharing. In this part of the session, alumni members and faculty alike shared their experiences and fondly recalled over the times that were.

After this the vote of thanks was proposed by Ms Nirmala John. With this the event came to an end.



# RESEARCH ACTIVITIES

## A REVIEW ON POWER QUALITY ISSUES IN ELECTRIC VEHICLE INTERFACED DISTRIBUTION SYSTEM AND MITIGATION TECHNIQUES

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### **ABSTRACT:**

Electric vehicles (EV) penetration in the distribution systems is evident and intended to grow day by day. Power quality issues pop up in the distribution system with an increase in EV penetration. Distribution networks need to consider the power quality issues developed due to the penetration of EVs for planning and designing the system. The power quality issues, including voltage imbalance, total harmonic distortion, distribution transformer failure, and related issues, are anticipated due to EV penetration in distribution systems. Detailed review of power quality issues and mitigation techniques are detailed in this paper. Discussion on the effect of these power quality issues on the distribution systems and corresponding mitigation measures are detailed. Power quality impact mitigation techniques have been discussed recently, which exploits the bidirectional power flow of vehicle to grid vehicle to grid (V2G) and grid to vehicle grid-to-vehicle (G2V). Methods and methodologies that mitigate power quality problems in the EV penetrated distribution system is discussed. Bidirectional power flow during EV charging and discharging and power quality issues in this topology is detailed in this review paper. A discussion on future trends and different possible future research paradigms is discussed as the review's conclusion.

**Keywords:** Distribution systems, Electric vehicles, Harmonic imbalance, Harmonics and voltage, imbalance Power quality issue mitigation.

# ARTICLES

## OUR FUTURE DAYS

AABON W. GONSALVEZ, 4BTEE

With the world slowly starting to wake up from its long slumber during the pandemic, it wouldn't be wrong to question whether everything will go back to the way it was with how much the world has changed. The answer to that question isn't an easy one. We have gotten quite comfortable in this period, with online classes, work from home and things like running errands, paying bills and shopping just at the click of your fingertips. But how much of this luxury are we willing to give up for things to go back to the way it was?

As the COVID pandemic picked up speed and infection rates around the world in late March 2020, people were worried about how the world would continue to function, or even function at all. Hospitals were overrun with patients suffering from the virus and lockdowns were implemented in many countries which disrupted the economy. Unemployment rates reached an all-time high with large companies having to lay off their employees and smaller independent businesses having to shut down due to the dip in the world's economy. Mental health issues were on the rise with people being depressed as they were not able to meet up with friends or family or even go about their usual daily routine. The future was looking very grim for the world and the light of hope was starting to flicker out.

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AABON W. GONSALVEZ, 4BTEE

But humanity still found a way, with advancements in technology and creation of new applications to keep us all connected during those dark times, we still prevailed. Vaccines which take at least 5 years of testing to be made available to the public was brought to the people at nearly a fifth of that time, with scientists and doctors from different parts of the world bringing their collective knowledge together for the betterment of society. While people had to isolate at home to slow down the infection rates, nature blossomed with fauna moving back to their natural habitat and flora thriving around metropolitan cities. Even the carbon pollution rate around the world went down by around 17%, the most it had gone down since World War II. All this provided a silver lining to the issues we were facing at that time.

Now nearly 2 years later, we are expected to go back out into the world and continue from where we left off; socializing, working, or studying all in the presence of people who we've probably never physically seen before. We have utilized technology at our own convenience to make life much easier for us during the pandemic, but we shouldn't take it for granted. We should try to incorporate the things that made life easy for us during the lockdowns to our future. It is not going to be an easy feat for the world to go back to a new normal, but humanity has shown that even during times like this, we will always find a way to thrive and survive.



# REVIEW: TO UNDERSTAND CHANGES IN EMPLOYEE ENERGY ACROSS THE SEVEN-DAY WEEK

JYOTHI PRIYA, 1960810

The research article by oliver weigelt,roman prem and seistrup (2021) has some findings which is in the interest of employee engagement in a week. Vitality and fatigue are the indicators of employee well-being and this research article put forward the continuous and discontinuous changes in vitality and employee energy and the variables affecting productivity throughout the week. The research also examines some variables like recovery experience and sleep quality to predict the changes in energy levels. The article presents a trajectory of vitality and fatigue patterns of the employees, and it was observed that the employee morale was low on Mondays and energy levels during the weekends increased continuously, the trajectory followed a sinusoidal pattern. The study's purpose was to observe the employee well-being and present the research for a well-suited solution to enhance the well-being of the employees. We will be briefly looking into the method used for their research, variables for the study, and the findings presented in the study.

The method for the research resource is inclusive of collection of data from 87 employees over the course of 12days (about 1 week 5 days), there were 2187 observations made for the research analysis, application of effort-recovery model (Meijman & Mulder, 1998) and discontinuous growth curve modeling. The effort recovery model aids in the understanding of processes of expenditure of energies during work and replenishing these resources during period of rest. The general pattern of continuous and discontinuous energy levels of the

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employees over the week gave insights into the causes of these changes in recovery rates. These methods are reflected in the research article, and the corresponding findings were presented. The variables included in the study were integrated to find these insights. The variables included are recovery experiences, sleep quality, anticipation (positive and negative), role of effort during the workweek.

The studies have shown that a better sleep quality is observed over the weekend and hence there is an increase in employee well-being and hence vitality is shown to increase. Although the levels of energy should be increased on a Monday workweek the studies show that Mondays have the lowest well-being, the reason for this is the individuals anticipate 5 days of work ahead of them. Considering the role of effort, it is said to increase during the week and drop towards the weekend, but the day-of -week research show the contradictory. The role of effort increases towards the end of workweek as individuals look forward to leisure activities during the weekend. These were some of the main findings from the research. The outcome of this research gives an insight on employee well-being which is an important factor for an organization's productivity. as per the findings presented in the research we see that employee well-being is the least on the start of the workweek and this might lead to hamper their productivity hence with this insight we can find better work conditions for the employees to improve their well-being during the work week and help lift their vitality.

# REVIEW: INTERNATIONAL DIFFERENCES IN EMPLOYEE SILENCE MOTIVES

JYOTHI PRIYA, 1960810

The research article by Michael Knoll (2021) examines why employees do not voice their views and the motive behind employee silence (i.e., silence based on fear, resignation, prosocial, selfish motives). They conducted research across 33 countries to facilitate cross culture research and find the motive of employee silence and culture differences and similarities in the prevalence of silence between countries. The research was conducted on a diverse scale to understand the relationship between culture and communication how it affects employee silence. The research presented that there are three types of silence quiescent, acquiescent, and prosocial silence. Quiescent silence refers to employees who remain silent at work due to fear of speaking up that may lead to negative effects on their career or disrupt relationships in their workplace. Whereas acquiescent are employees who think that speaking up will not make any significant difference or their superiors are simply not responsive on the matter. Prosocial silence is the kind where employees remain silent to protect their superiors or organizations. According to the studies individuals with power are regarded as elite and superior while employees who have little power accept the hierarchy and tend to be loyal and obedient to them, this leads to the employees to remain silent for prosocial reasons. The study states that power distance (hierarchy) and individuals being assertive are the main reasons for employee silence.

The research gives an insight on how unethical practices can easily take place at work and why employees remain silent on matters of

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JYOTHI PRIYA, 1960810

importance In a general workplace where research shows unethical practices, fraud and harassment is shown because employees choose to withhold information, this could impact the employee in concern mentally in case of quiescent silence. Employees have little negative impact having acquiescent silence whereas employees who remain prosocial have a positive impact. This visibly shows the employee well-being and this insight could be useful to further help employees voice their opinions in an organization regardless of their status quo.

## REVIEW: TO HARNESS EMPLOYEE ENERGY

JYOTHI PRIYA, 1960810

The research article by Alice Zhou (2018) gives us an insight on how employee energy can be harnessed. The article mentions that employees who take pride in working in the organization have higher levels of emotional energy towards their work. This emotional energy is a driving factor to work harder toward the betterment of the company. There were three main points put forward by the article: the emotional energy is further fueled by the sense of pride that is instilled in the employees, that motivates people to strive for further success, individual's anticipation for future success also acts as a source of motivation and is found to be more powerful for employee engagement. To harness this sense of pride among the employees the organization's goals should be interlinked with what drives employees to feel proud.



## **IMPORTANT HEADLINES**

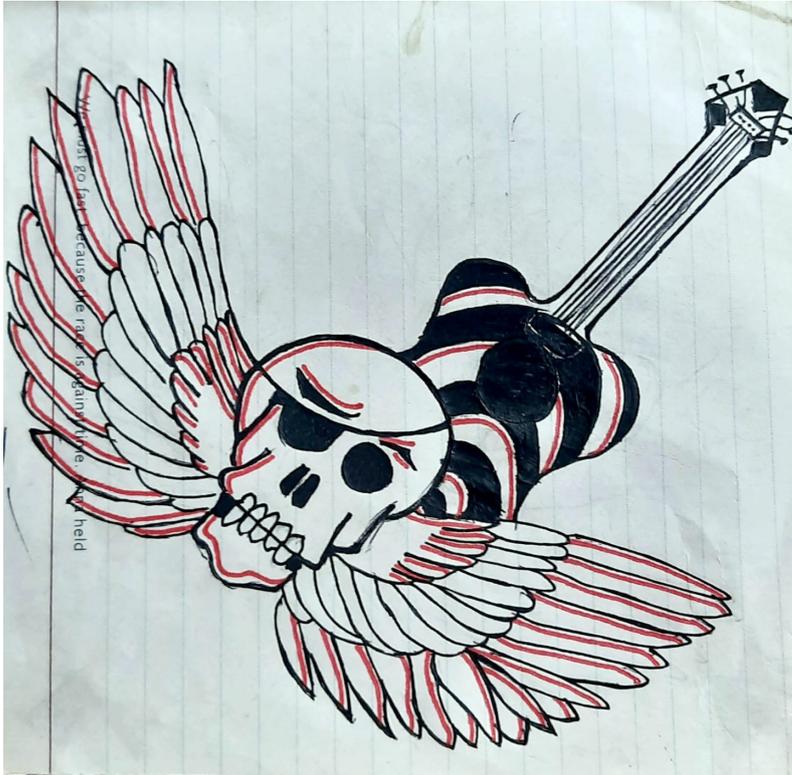
- Dixon Tech enters into JV with makers of boAt brand Imagine Marketing.
- Power consumption grows 1.5 pc in first fortnight of January amid third COVID wave.
- Power requirement estimated to be 1,650.59 billion units in FY23.
- Cisco to introduce swapping gear which is to be installed by Chinese vendors in Indian telecom networks.
- A Wave of SiC MOSFET Designs Power Up to Strike at High Voltage Applications.
- Venu Srinivasan (Head of TVS motor company) vocalizes about Battery-swapping policy being instrumental for electric vehicle ecosystem .
- Reliance Industries to buy stake in EV technology firm Altigreen.
- Hero Electric partners with ALT Mobility to deploy 10,000 Hero Nyx by 2023.
- Kinetic Engineering to focus on EV segment; to make chassis, gearboxes for such 2, 3-wheelers

## **DATES TO REMEMBER**

- 4 February - World Cancer Day
- 6 February to 12 February - International Development Week
- 8 February - Safer Internet Day
- 11 February - International Day of Women and Girls in Science
- 12 February - Darwin Day
- 12 February - National Productivity Day
- 13 February - World Radio Day
- 14 February - Saint Valentine's Day
- 21 February - International Mother Language Day
- 22 February - World Thinking Day
- 24 February - Central Excise Day
- 27 February - World NGO Day
- 28 February - National Science Day

# **CREATIVITY CORNER**

## **ART NOOK**



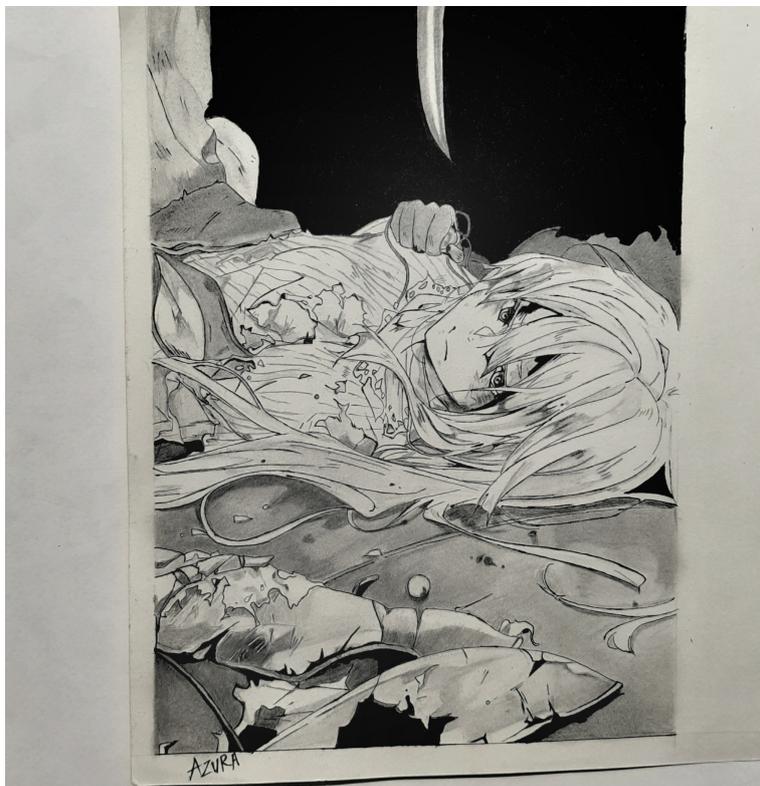
**ROYESEE J M**  
**4BTEE**

**ADAM LOUIS D'COUTO**  
**4BTEE**





**ANIKET VERMA  
8BTEE**



# THREE GOLDEN RULES

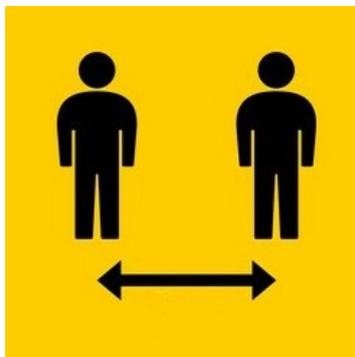
WE EXPECT YOU TO FOLLOW ALWAYS



**Always wear  
a face-cover/Mask**



**Wash Hands frequently  
and Sanitize**



**Maintain Distance  
from others**

# HERE'S A PLAYLIST FOR YOU

FROM THE EEE EDITORIAL BOARD



SCAN THE QR CODE GIVEN BELOW TO FIND THE PLAYLIST



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