ASHOKRAO MANE POLYTECHNIC, VATHAR



Electrical Engineering Department *NEWSLETTER: ELECTRICA* VOL-9: ISSUE-II ,May 2024



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Vision

Commitment for excellence in the field of Electrical Engineering and empowering students in technical, social aspects for betterment of society.

Mission

- Impart strong fundamental and applied technical knowledge in the Electrical Engineering.
- Organize expert lectures, workshops, industry visits for knowing new technology.
- Educate graduate students in research, scholarship and intellectual life
- Produce competent and skilled electrical engineers to meet ongoing industrial requirement.

Chief Editor:

Mr.B.V.Kumbhar Editor Committee: 1.Mrs.A.A.Pethkar 2.Mr.S.B.Gore 3.Mr.M.M.Ghatage 4.Mr.O.S.Injal

THEME-WIRELESS POWER TRANSMISSION About Institute

Shri Balasaheb Mane Shikshan Prasarak Mandal Ambap's, Ashokrao Mane Polytechnic Vathar (AMPV) was established in 2008 and is located near Kolhapur. This Institute has AICTE approval for the Six Diploma courses. AMPV has emerged as a leadingtechnological Institute to promote TechnicalEducation for rural communities. It provides modern educational facilities to mould young and talented students who can compete in theglobal arena. Institute endeavours to offer a holistic education with values and ethics imparted to students allowing them to pursue successful careers growth. This institute is a perfect destination for Quality & Outcome based technical education. The aim of AMPV is to rank among leadinginstitutes of India

About Department

The Department of Electrical Engineering was established in the year 2010 with a sanctioned intake capacity of 60 students. The Department has been accredited by National Board of Accreditation (NBA) and also consistently awarded with excellent remark by MSBTE, Mumbai. To cater to the ongoing industrial demand, the Department has well equipped laboratories with extra facilities and also having a smart classroom with e- learning facility. Department leads to implement energy conservation techniques in the institute and also as a part of green energy, promote the use of non conventional energy sources. The department has an enthusiastic team of qualified and experienced teaching and non-teaching staff. One of the strengths of the Department is that it's faculty has published different papers in reputed national & international journals & contributed in Research & Technology.

Messages Message from Principal's desk



Prof.Y.R.Gurav Principal, Ashokrao Mane Polytechnic, Vathar

It's a very prestigious moment to interact with the readers. This Newsletter is an initiative taken by Electrical Department with a specific purpose. The contribution made so far by it's teachers, students, academicians and industrialists has compelled it to promote them in the area of Electrical Engineering. Newsletter is also acting as a medium to convey messages about its vision and values along with future strategies and plans. This Newsletter has a unique theme i.e Wireless Power Transmission. I appreciate the editing team, which is putting efforts in compiling various news about Diploma Education System in Electrical Department along with the views and information about theme and distribute it to cohesive community of stakeholders а students. faculty, parents, administrators, institutes. industry and community at large relevant to Newsletter.

Message from Chief Editor's desk



Mr.B.V.Kumbhar Head, Department of Electrical Engineering Ashokrao Mane Polytechnic, Vathar Dear all..

It gives me immense pleasure to publish this edition of our half yearly newsletter 'Electrica'.First of all I would like to greet all the readers and well-wishers for their ongoing support and kind cooperation to our newsletter. Now I am very happy to announce that, we are completing another great academic year 2023-24 with various academic, curricular and extracurricular activities.

We make every semester more informative by imbibing the skills of teamwork, leadership, and applying root level learning to solve real-world problems. Our newsletter plays a vital role in the progress of our department. It is a most powerful platform of the students and faculty members, where they can focus their talents as well as their creativity in their respective field which may be benefited to all.

I would like to appreciate and congratulate the editorial team for their untiring efforts and wish best luck in all their future endeavors. It is my sincere appeal to all readers to read & enjoy this edition.

I hope all our readers will always be with us and we look forward to a successful academic year 2024-25 ahead.

Departmental ActivityFaculty Development ProgramREFLEX 2K24



Transport is a fundamental requirement of modern life, but the traditional combustion engine is quickly becoming outdated. Petrol or diesel vehicles are highly polluting and are being quickly replaced by fully electric vehicles. Electric vehicles (EV) have zero tailpipe emissions and are much better for the environment. The electric vehicle revolution is here, and you can be part of it. Will your next vehicle be an electric one? A faculty development program was organized by Electrical Engineering department from 18th December 2023 to 20th December 2023 at Ashokrao Mane Polytechnic, Vathar. This was a 3 day faculty development program. Related subtopics were discussed in detail by eminent resource persons & a very beneficial academic environment was experienced by the participants.



REFLEX 2K24 is a state level

technical event which was organised by our institute.Under this Electrical Department organized two events i.e paper presentation & technical event Electro-charger. The purpose of this event was to enhance students performance in extra curricular activities also through this activity students will be able to technical knowledge improve and communication skill. The event was coordinated by Mrs.A.A.Pethkar Lecturer at Electrical Engineering department. Under the guidance of Head of Electrical Department Mr.B.V.Kumbhar and the inspiration behind this event was Mr.Y.R.Gurav Principal of Ashokrao Mane Polytechnic, Vathar. The event was ended with prize distribution and certificate distribution.





Republic Day Celebration 26/01/2024



Annual Sports



Blood Donation Camp 29/01/2024



Annual sports organized by Ashokrao

Department of Electrical Engineering , participated in different sports like khokho, kabaddi,criket,vollyball, football etc.

Mane Polytechnic, Vathar.

Women's Day Celebration 08/03/2024

Students of

ASHOKRAO MANE POLYTECHNIC, VATHAR

ELECTRICA

Industrial Visits



Final year students visited 33/11kV transmission substation at Vadgaon on 08 Feb 2024. The station incharge explained the layout of the substation. Details of the control center, panel indicators, various relays, battery room etc. shared with the students so that they can understand the functioning of substation in a better way. Then field visit to switchyard gave long lasting impact in understanding various components such as power transformer, lightning arrester, Insulators, Bays, Busbar systems, CTs, PTs, Isolators and Circuit breakers. Protection schemes and maintenance activities. Mrs. A.A.Pethkar. Mr. M. A. Kamble, and supporting staff accompanied the students



Second year student visited Precise Transformers, Gokul Shirgaon, Kolhapur.on 22 Feb 2024. During this visit stdents got to see actual parts of transformer like core, windings ,buchhloz relays, breather, coservator, cooling tubes etc. Students got knowledge about detailed construction of transformer. There are differnt types of transformers such as transformer.distribution power transformer, current transformer & potential transformer. Mrs. R.A.Patil, Mr. A. A. Kadam, Mr. S.S.Padval and supporting staff accompanied the students

Expert Lectures



An Expert l;ecture on"Industrial Project Development" on 16 Jan 2024by Mr.M.S.Kulkarni. Director of Electrosal Hightech, Nipani. Mr.B.V.Kumbhar welcomed the guest & gave a breif introduction of the guest. The session started with fundamentals of project selection as well as provided a brief overview of the project management skills. The expert also talked about how to collect the information about the projects. He also guided students about the different opportunities available in industry related to project development. The session was very informative & highly interactive. The session concluded with vote of was thanks bv Mr.A.A.Kadam.



An Expert lecture on "Study of different types of Tariffs & Energy bill calculation" by Mr.S.S.Jagtap,Deputy Executive Engineer,Vadgaon subdivisional MSEDCL on 07 March 2024. At the start of session he gave brief overview of the present scenario of importance of tariff & their effects on energy consumption. The expert also talked about the energy bill calculation. He also guided students about the differnt opportunities available in the area of energy audit. Students enjoyed real life practical examples very much & thy were encouraged to follow the industrial energy audit. At the end of session Mr.B.V.Kumbhar thanked him for helping us to enhance our student's knowledge.

Workshop



A workshop was arranged by our

Electrical Engineering department held on 9 March, 2024 which was conducted by Mr.Dhawal Bagawade on topic "Electrical Drawing & CAD".Mrs.A.A.Pethkar welcomed the guest and gave a brief introduction of the guest. The session started with 2D process of creating and editing technical drawings, as well as annotating designs. use computer-aided design (CAD) Drafters software to develop floor plans, building permit inspection drawings. building plans and landscaping layouts.He also explained 3D modelling in Auto CAD, 3D CAD uses, Create & Modify diagram in 3D model, Types of CAD, Benefits of 3D CAD, Streamlined Collaboration, Efficient Design Iterations. Also Sir explained types of 3D model. He gave knowledge about Isometric drawing in AutoCAD can be made by tilting viewing angle to 30 degree for all of its sides in the 2D plane. Sir explained creating 3D isometric view of various structural elements in CAD, he also explained isometric design technology. He had given time to students for asking questions regarding Auto CAD. At the end of third session we had taken feedback from student. Workshop was ended with vote of thanks made by Mrs.A.A.Pethkar.

ऋणानुबंध Alumni Meet-2024



The Alumni Meet-2024 of

Electrical Engineering Department, Ashokrao Mane Polytechnic Vathar was held on Saturday 06 January 2024 in college campus lawn. The meet started at 6.00 pm. Hon. Sou. Manisha Vijaysinh Mane, Member of Zilha Parishad Kolhapur, was the Chief guest for the function. Prof.Y.R.Gurav, Principal of Ashokrao Mane Polytechnic, was chairperson , Prof. P.T.Hasabe, Academic Coordinator & event convener, Mr. R.B.Mulik , Central Alumni coordinator & event co-convener, Mr. Kiran Katkar, Senior IT Analyst, TCS Pune was the Alumni Representative for Alumni meet, all Alumni association members, all Alumni staff coordinators, all the Heads of Departments, teaching & non-teaching staff members were present for function.

Hon. Sou. Manisha Vijaysinh Mane, Member of Zilha Parishad Kolhapur said in encouraging speech that institution was started with the aim to provide education to students from rural areas. We know their difficulties but still we overcome the problems by providing different facilities & infrastructure to the students.



Mr. Sande Anis Shamshuddin Contractor, A.S.Electricals Shiroli(Pu)

Success Story

I had taken admission in Academic Year 2019-20 in Electrical Department. I completed my Diploma March 2022. After completing my education, I decided to become an entrepreneur & accordingly registered my firm in Jan. 2023. It was a small scale firm initially but now 16 workers are working in my firm. And the credit goes to AMPV. This college developed the entrepreneur qualities in me, ignited my mind with all leadership skills & thats why today I am a successful businessman.

ASHOKRAO MANE POLYTECHNIC, VATHAR

Faculty Views...



Mrs.A.A.Pethkar Lecturer,Electrical Engineering Department

Wireless power transfer offers several advantages, making it a valuable technology for various applications. Here are some of the reasons why wireless power transfer is used:

•Convenience: Wireless power transfer eliminates the need for physical cords and cables, making it more convenient for users. You can place your device on a charging pad, and it starts charging without the hassle of plugging and unplugging cables.

• **Reduced Wear and Tear**: Since no physical connectors are involved, charging ports and cables have less wear and tear. This can extend the lifespan of devices, especially those with delicate or frequently used charging ports.

• Safety: Wireless power transfer systems are designed with safety in mind. They often include temperature monitoring and foreign object detection to prevent overheating or damage. This can reduce the risk of electrical accidents or fires.

• Flexibility: Wireless power transfer can work through various materials, such as wood, plastic, and glass. This allows for more flexibility in the design and placement of charging pads.

• Mobility and Portability: Wireless charging is handy for mobile and handheld devices, like smartphones and wearables. It allows for convenient and hassle-free charging on the go.

• Electric Vehicles (EVs): Wireless charging for electric vehicles offers a more convenient and hands-free way to charge electric cars, which can be especially valuable for autonomous vehicles that can park and charge on their own.

• Space Applications: In space, wireless power transfer can transmit power from solar panels on satellites to the spacecraft's systems, eliminating the need for physical wires that can be damaged or compromised in the harsh space environment.



Mr.S.B.Gore Lecturer,Electrical Engineering Department

Wireless power transfer works by using electromagnetic fields to transfer electrical energy from a power source to an electrical device without the need for physical connectors or wires. There are a few different methods for wireless power transfer, but one of the most common approaches is inductive coupling. Here's a simplified explanation of how it works:

• **Transmitter Coil**: In a wireless charging system, you have a charging pad or base station. This pad contains a coil of wire. When electricity flows through this coil, it generates an electromagnetic field around it. Think of it like a magic ring of energy.

• **Receiver Coil**: In the device you want to charge, such as a smartphone, there's another coil of wire. This is called the receiver coil. It's designed to pick up the energy from the electromagnetic field created by the transmitter coil.

• Alignment: For wireless charging to work efficiently, the transmitter coil and receiver coil need to be close to each other and aligned properly. This is why you must properly place your device on the charging pad.

• Energy Transfer: When the coils are close and aligned, the electromagnetic field created by the transmitter coil induces a flow of electrical current in the receiver coil. This current can charge the device's battery or power it directly.

• **Charging**: As the electrical current flows into the device's battery, it charges it as if you were plugging in a charger with a cable.

Wireless power transfer relies on using electromagnetic fields to transmit electrical energy from the charging pad (transmitter) to the device (receiver) without any physical wires. This technology is convenient because you don't have to plug and unplug devices – you place them on the charging pad, and they start charging wirelessly

Student Views...



Mr.M.M.Ghatage Third Year Electrical Engineering Student

What is Wireless Power Transfer?

Wireless power transfer, also known as wireless energy transmission or wireless charging, is a technology that allows electrical energy to be transmitted from a power source to an electrical device without the need for physical connectors or wires. This technology eliminates the need for traditional power cables and can provide a convenient and efficient way to charge or power various devices.

There are different methods of wireless power transfer, but two of the most common approaches are:

•Inductive Coupling: Inductive wireless charging uses electromagnetic fields to transfer power between two coils – a transmitter coil in the charging pad or base station and a receiver coil in the device being charged. When the coils are closely aligned, electrical current flows through the receiver coil, which can then be used to charge a battery or power the device.

•Resonant Inductive Coupling: This is an extension of inductive charging that uses resonance to improve power transfer efficiency. It involves tuning the transmitter and receiver coils to the same resonant frequency, allowing for more efficient power transfer over a greater distance



Mr.O.S.Injal Second Year Electrical Engineering Student

Advantages of Wireless Power Transfer?

•Convenience: One of the most significant advantages of wireless power transfer is its convenience.

•Reduced Wear and Tear: Since there are no physical connectors, there is less wear and tear on charging ports and cables.

•Safety: Wireless power transfer systems are designed with safety in mind. This can reduce the risk of electrical accidents or fires.

•Flexibility in Design: Wireless charging can work through various materials, such as wood, plastic, and glass. This allows for more flexibility in the design and placement of

•Mobility and Portability: Wireless charging is particularly useful for mobile and handheld devices, like smartphones and wearables

•Electric Vehicles (EVs): Wireless charging for electric vehicles offers a more convenient and hands-free way to charge electric cars, especially for autonomous vehicles that can park and charge on their own.

•Space Applications: In space, wireless power transfer can be used for transmitting power from solar panels on satellites to the spacecraft's systems, eliminating the need for physical wires that can be damaged or compromised in the harsh space environment.

Cultural Activities Studer

Inauguration & Welcome Function





Prize Distribution

Students Performance



ELECTRICA

A chievements...

Academics **SY Electrical** Engineering



Jadhav Pranav Prakash 86.62%



Chavan Aviraj Mohan 82.25%





TY Electrical Engineering



Ghatge Mahesh Manik 89.50%



Kudalkar Disha Sandip 88.20%



Non Academics





Prakash

Paper Presentation Runner up "REFLEX 2K24" state level technical event organiszd by Ashokrao Mane Polytechnic Vathar.

Injal Omkar Jadhav Pranav Subhash



Electro-Charger-Winner "REFLEX 2K24" state level technical event organized by Ashokrao Mane Polytechnic Vathar.

Kudalkar Disha





Circuit Hub "DISTRICT'10" state level technical event organized by Rajarambapu Institute of Technology Rajaramnagr

Dhokale Mayuri Bajirao Ghatge Mahesh 88.10% Manik Next theme-E Vehicles future of India

Program On'Entrepreneurship-Opportunities & challenges'



Our Department organized in a program on 'Entrepreneurship-Opportunities & challenges' on 15 February 2024 at 10:00 am for final year students of all branches. Mr.Yashovardhan K. Baramatikar, Executive Director of Shri Siddhagiri Math was the resource person for this program. Entrepreneurship Development Cell incharge Mr.B.V.Kumbhar sir welcomed resource person along with all the students and gave a brief introduction of resource person.





Hon.Principal Prof.Y.R.Gurav sir felicitated team member of John Deere India Pvt.Ltd Pune-15



Prof.Y.R.Gurav sir welcomed team member of Cummins IndiaLtd, Phaltan-3



Placed students in PIAGGIO Vehicles Pvt.Ltd.Baramati-16 with HR team & Hon.Pricipal Prof.Y.R.Gurav sir



Placed students in KSPG Automotive India Pvt.Ltd,Pune with HR team & TPO

The responsibility of the authenticity of the information in this Newsletter lies with the author. Views expressed by the authors are solely theirs; they are neither the views of Electrical Engineering Department nor are they endorsed by Electrical Engineering Department. Queries, comments, feedbacks and information may be sent to <u>electricaldept2021@gmail.com.</u> Edited, Printed and Published by Mr. B. V. Kumbhar, H.O.D.-Electrical Engineering, Ashokrao Mane Polytechnic, VatharTarf Vadgaon,416112,Website - www.amietv.org

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