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ELECTRO-MOTTO

Magazine of

ELECTRICAL AND ELECTRONICS ENGINEERING DEPARTMENT

R.V.R. & J.C.COLLEGE OF ENGINEERING
(AUTONOMOUS)
Chandramoulipuram, Chowdavaram, GUNTUR – 522 019.

From the Principal

It is always a pleasure to be a part of a team which strives to bring out the talents of students and staff. Electrical and Electronics department of RVR&JC College of Engineering has always been striving to keep itself ahead of the competition. The essential purpose of a magazine is to inform, engage, inspire and entertain a diverse readership including alumni, parents, students, faculty, staff and other friends of the college by telling powerful stories that present a compelling, timely and honest portrait of the college and its extended family. This magazine has made an earnest attempt in this direction and brought out certain aspects to the eyes of the public so that they may understand and know the EEE department even better.

Dr.Kolla Srinivas

From the HOD of EEE

I am happy to note that the magazine brought out in our EEE department is of good quality and taste. Hearty congratulations to the editorial team. It is a matter of great pleasure for me to go through the wonderful contributions made by the students. This magazine is intended to bring out the hidden literary talents in the students and to inculcate leadership skills among them. The outside world will come to know about the caliber of our students through this magazine. I extend my thanks to all the contributors for their articles, poems and drawings.

Dr.K.Chandrasekhar

ABOUT THE DEPARTMENT:

The Department of Electrical and Electronics Engineering has been established during the academic year 1994 - 1995 with an intake of 60 students. The intake has been enhanced to 120 from the academic year 2004 -2005 and 180 from the academic year 2013-2014. The intake from academic year 2021 -2022 is 120. Department was accredited twice by National Board of Accreditation of AICTE first in the year 2002 with A-Grade for five years, in the year 2007 for three years and in 2012 for two years. Accreditation by NBA for 5^{th} time in 2017 and 6^{th} time in 2021.We have over 10 laboratories with advanced equipment and facilities for supporting our teaching and research. It is envisioned to strengthen the quality of its faculty, research and teaching facilities, as well as student's academic performance.

Our vision:

The vision of the department of Electrical & Electronics Engineering is "To impart education leading to highly competent professionals in the field of Engineering who are globally competent and to make the Department a Centre for Excellence".

Our Mission:

The mission of the department of Electrical & Electronics Engineering is "The Integrated development of professionals with knowledge and skills in the fields of specialization, ethics and values needed to be employable in the fields of Electrical Engineering and contribute to the economic growth of the employing organization and pursue lifelong learning**".**

Achievements:

The Department of Electrical & Electronics Engineering standing among all the other branches of our college.

- Accredited "A" grade for two years by NBA, AICTE New Delhi in the year 2012 for two years.

- Accredited "A" grade for three years by NBA, AICTE New Delhi in the year 2007 for three years.
- Accredited "A" grade for five years by NBA, AICTE New Delhi in the year 2002 for five years.
- College Accredited by APSCHE, Hyderabad in academic Audit Grade. It is informed that it is the Second best among the private Engineering Colleges in Andhra Pradesh.
- P.G. Course M.Tech. In Power Systems Engineering was started in 2004 with an intake of 18 students.
- The Students of the department excels in the University Examinations by being University I Rank Every Year.
- The Department is the winner of CZARS Title (Overall Championship) thrice in the years 2008, 2014, 2016 within the college.
- Accreditation by NBA for 5th time in 2017 and 6th time in 2021.

Program Educational Objectives:

I. To facilitate the students to become Electrical & Electronics Engineers who able to competent, innovative and productive in addressing the broader interests of the organizations & society.

II. To prepare the students to grow professionally with proficient soft skills.

III. To make our graduates to engage and excel in activities to enhance knowledge in their professional works with ethical codes of life & profession.

Program Outcomes:

Engineering Graduates will be able to:

PO1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12**. Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs) of EEE Department:

PSO 1: Graduates of the program must demonstrate knowledge and hands on competence in developing, Testing, Operation and Maintenance of Electrical & Electronics systems.

PSO 2: Graduates of the program must demonstrate knowledge and hands on competence in Modern Engineering tools to engage in life-long learning and to successfully adapt in multi disciplinary environments.

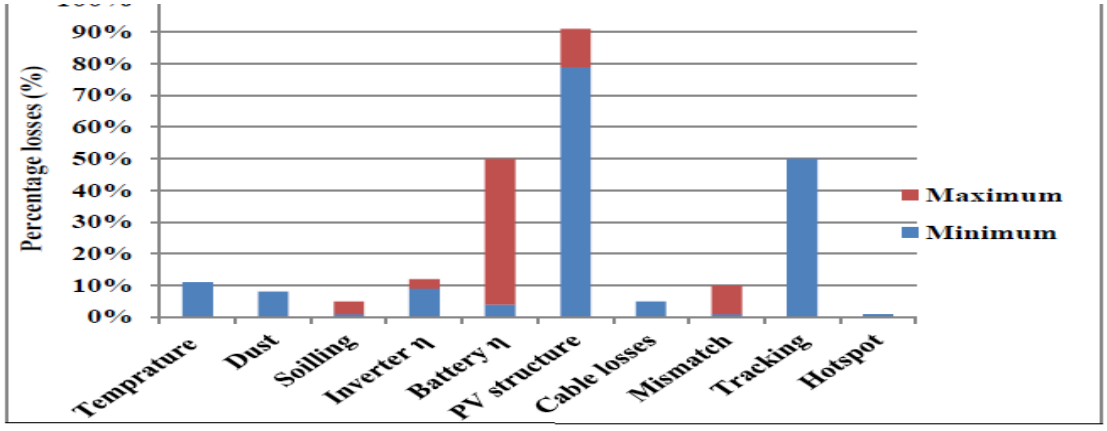
PSO 3: Graduates of the program must demonstrate knowledge in Project Management techniques, environmental issues and Green technologies.

The following is list of students who qualified in GATE-2023

S.No	Regd.No.	Name of the student	Hall Ticket Number	All India Rank	Marks Obtained	Gate Score
IV/IV B.Tech						
1	Y17EE049	Tarun Gogisetty	EE23S37104054	55	53.67	839
2	Y19EE032	Balakrishna Datti	EE23S36105066	4189	25	391
3	Y19EE146	Rajesh Babu Yarasani	EE23S37105168	7268	20.33	270

Solar Energy: The Key to Sustainable

Solar energy is a renewable and sustainable energy source derived from the sun's radiation. Solar or photovoltaic (PV) energy is the most popular renewable resource for power generation due to several advantages such as dependability, low-cost maintenance, and zero harmful emissions. PV cells, which have a non-linear current–voltage (I–V) relationship and a Maximum Power Point (MPP) on the power–voltage (P–V) characteristic curve, are used to generate electricity from solar energy. Because the output power of a PV system is directly proportional to the quantity of solar irradiation and the ambient temperature, the system's efficiency is extremely limited. While generating electrical energy, many meteorological factors are affecting the performance of the PV array panels. These factors lead to losses in the production of electrical energy. Losses can occur due to meteorological factors as well as the design of solar PV panels. Shade, material quality, component incompatibilities, and inverter losses are examples. Partial shading can have an impact on the efficiency of PV modules (PS). Clouds, buildings, snow, and trees may all cause partial shadowing. The (P–V) and (I–V) properties of PV modules are directly affected by PS conditions . Changes in solar irradiance on the module result in power losses in the system, lowering efficiency. PV modules made of polycrystalline and Copper Indium Gallium Selenide (CIGS) are tested in to see how PV modules influence power losses. Below figure shows percentage losses of some major factors affecting PV performance.



BARRIERS: In general, issues coming from different scenarios, geographical contexts, and levels of development influence renewable energy sources to various levels. Existing impediments at several levels (technological, economic, legislative, regulatory, and socio-political) could stymie the deployment of solar PV capacity during the next three decades as illustrated in Fig. Immediate mitigation of these barriers, through a variety of support policies and operational strategies, is critical to boosting future deployment of PV systems.

SOLUTIONS: The solutions and policies that must be implemented in the future to tackle the PV industry's barriers is illustrated in Fig. An overview of some of the most important factors to be considered while accelerating the deployment of solar PV capacity are

- Set long-term, well-defined and stable solar PV power targets to attract investment.
- Provide long-term stability of policy instruments.
- Adopt a systemic approach, drawing together innovations in enabling technologies, market design, business models and system operation.
- Improve existing infrastructure along with building a high-voltage grid, or super grid to transport electricity to another region and avoid renewable energy curtailment.
- Implement installer certification and licensing/ training programmes to assure the quality of solar PV installations.

TECHNOLOGICAL BARRIERS

- Grid-connection and integration challenges
- Grid-flexibility challenges
- Lack of capacity/skilled labour
- Architectural and space barriers

POLICY BARRIERS

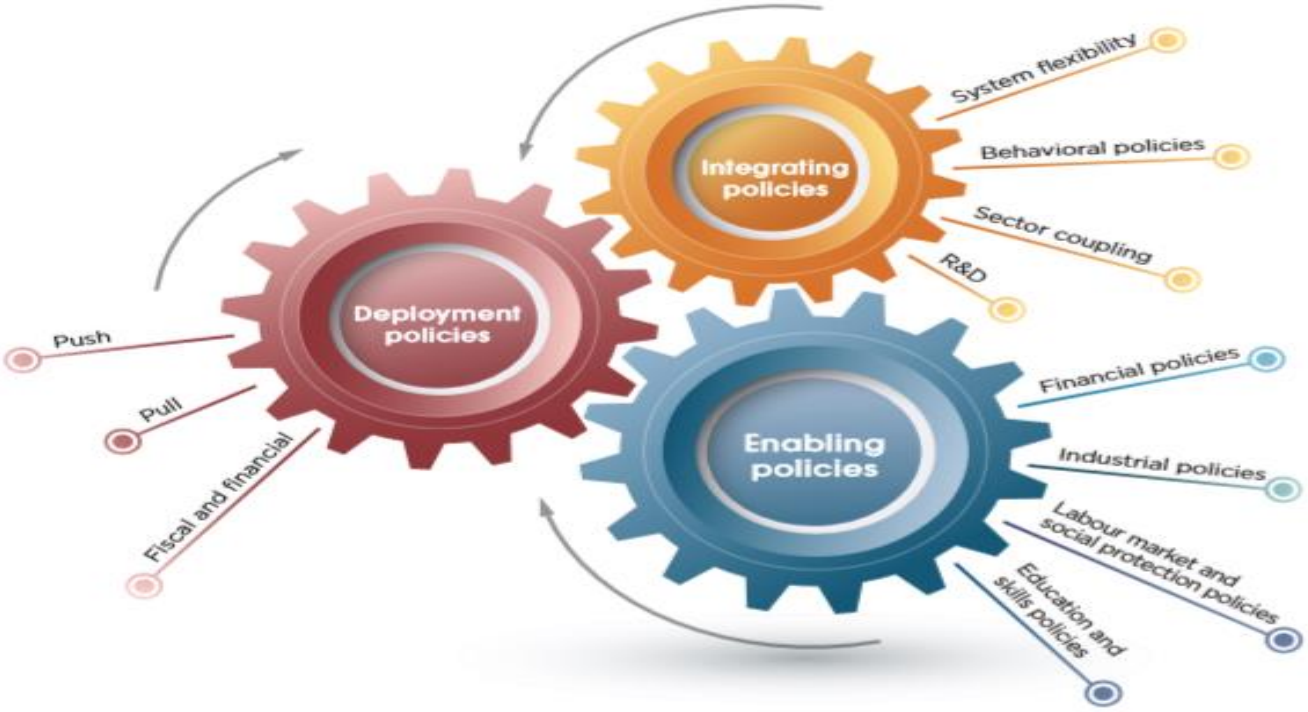
- Complex/outdated regulatory framework
- Lack of long-term and stable policy targets and well-coordinated policy mix
- Lack of quality control measures
- Concerns about technology maturity and performance

MARKET AND ECONOMIC BARRIERS

- Long payback periods
- Carbon emissions and local air pollutants are not priced or fully priced
- Low wholesale power prices in countrieswith low levels of irradiation

REGULATORY, POLITICAL AND SOCIAL BARRIERS

- Lack of consumer information onperformance, costs competitivenessand economics of solar PV
- Lack of relevant standards an quality control measures
- Lack of skilled professionals and experience.



Fun with Electrical

- Why did the electrician go to school?

  Because he wanted to be current with the times!

- Why was the circuit always so bright?

  Because it had a lot of wattage!

- Why did the electrician break up with his girlfriend?

  Because he couldn't resist her sparks!

- Why did the capacitor break up with the resistor?

  Because they couldn't find common ground!

- Ohm's Law Excuses: "Sorry, I can't come out tonight, I'm too ohm-resistive." Ohm's Law can provide great excuses for staying in!

- Electricity Puns: Electricians have a shockingly good sense of humor. They're always current with their puns!

- Electricity and Love: Electricians make great partners because they know all about sparks and how to keep the relationship grounded.

- Static Electricity: The feeling you get when you rub a balloon on your head is hair-larious!

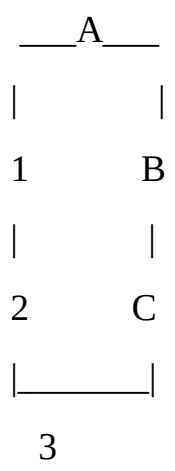
- Circuit Board Art: Electrical engineers have a shocking sense of creativity. They turn circuit boards into works of art, making connections that really resonate!

- Resistance to Change: Why did the capacitor refuse to change? Because it was too charged with resistance!

- Parallel Parking: Parallel parking is easy for electric cars. They're always positive they can fit in!
- Circuit Breaker Dance: The circuit breaker's favorite dance move? The "trip" and fall!
- Watt a Shock: Did you hear about the electrician who became a comedian? He had everyone in stitches with his shocking jokes!
- Light Bulb Moments: Why did the light bulb go to school? Because it wanted to be brighter!

Puzzle:

You are given a circuit with three light bulbs (A, B, and C) and three switches (1, 2, and 3), as shown below:



Each switch corresponds to one light bulb, but you cannot see which switch controls which light bulb. You are allowed to flip the switches in any order, but you can only go into the room with the circuit once. How can you determine which switch controls which light bulb?

To solve this puzzle, you can follow these steps:

Flip switch 1 and leave it on for a few minutes.

After a few minutes, turn switch 1 off and flip switch 2.

Immediately enter the room with the circuit.

Here's what will happen:

If bulb A is lit, it means switch 1 controls bulb A.

If bulb A is off and bulb B is lit, it means switch 2 controls bulb B.

If both bulb A and bulb B are off, and bulb C is lit, it means switch 3 controls bulb C.

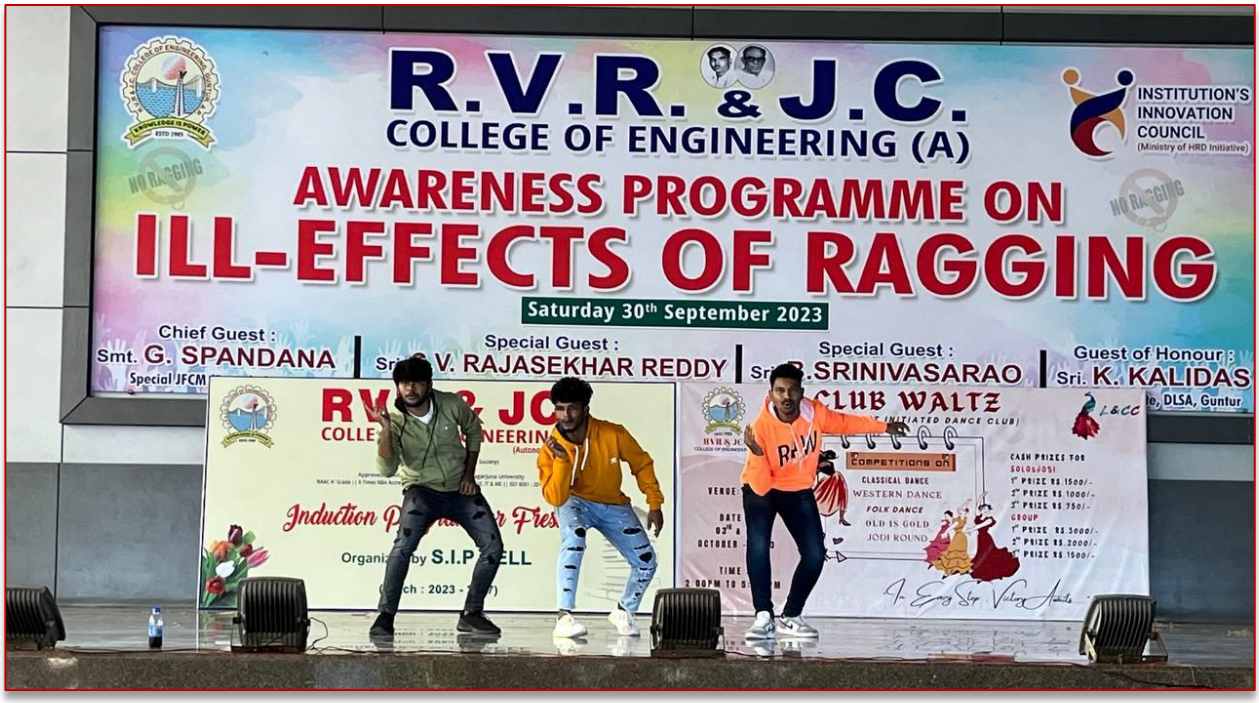
ELECTRICITY QUOTES

"Enthusiasm is the electricity of life. How do you get it? You act enthusiastic until you make it a habit." ― Gordon Parks

"I had enough electricity in my booty to jump-start the whole of New York City." ― Colum McCann,

"I am somewhat exhausted; I wonder how a battery feels when it pours electricity into a non-conductor?" ― Arthur Conan Doyle

CLUB WALTZ organized Dance Competitions in Western, Classical, Folk



Face Painting & Pencil Shading competitions

RED

ANTS organized a workshop on Terracota Pottery

Industrial Visits

IEEE members visited ARCI, Hyderabad

Students visited 400/220 KV Substation, Sattenapalli

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