A yearly Newsletter

THE BIDYUT

Issue-I

"Thinking is the capital, Enterprise is the way, Hard work is the solutions"

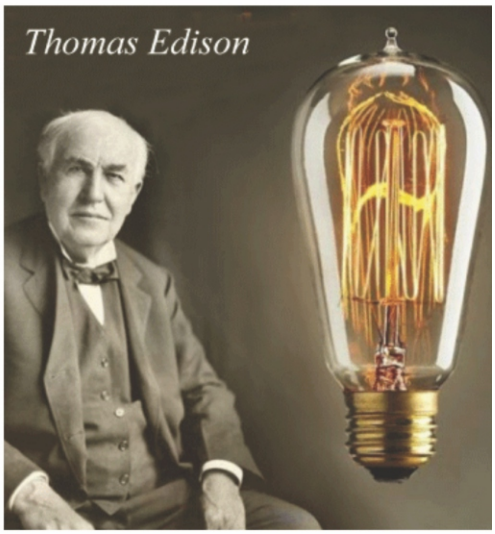
– Dr. APJ Abdul Kalam

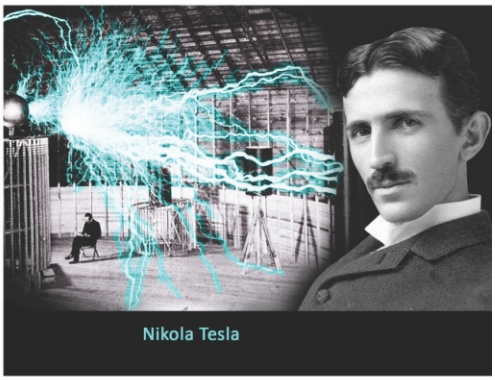
College of Engineering Bhubaneswar (COEB)

Department of Electrical Engineering

ABOUT THE DEPARTMENT

The department of Electrical Engineering of College of Engineering Bhubaneswar was established in the year of 2001. Currently the department runs about 6 laboratories for both undergraduate and R&D activities. Faculties qualified from different IITs and NITs with more than 10 years of teaching and research experience are currently working here.





VISION

To impart Technical knowledge in Electrical Engineering theoretically and practically to meet the International Standards and to make our students technologically superior & ethically strong enough to meet the challenges for the wellbeing of our country in forthcoming years.

MISSION

To provide a approach to the student's careers as professional engineers, Researchers or Teachers and to develop the department as a center of excellence in Power Sector, Industrial Sector and also to provide dynamic and scholarly environment by which the students can learn independently to develop a disciplined as well as innovative knowledge based consultancy services to the Rural and Tribal community around us for their upliftment and wellbeing of our Nation.

MESSAGE FROM CHAIRMAN

The electrical industry is in the midst of profound and comprehensive change. In the twenty-first century, almost everyone, in general, and industrial countries, in particular, had access to electricity. Electricity, now enables a vast range of social functions, from the most mundane to the most sophisticated. So a technical newsletter of this kind will eventually serve as a catalyst for change in the minds of budding electrical engineers.

I am looking forward to the positive aspects that "THE BIDYUT" is going to provide knowledge and also hope that it will be informative for the readers.

Er. Prabhat Ranjan Mallick
Chairman, KGI

MESSAGE FROM VICE CHAIRMAN

Engineering instruction is multifaceted because students need a solid understanding of the theoretical foundation that guides the application of technical expertise and promotes problem-solving skills. This may be achieved through classroom teaching and laboratory learning environments, but engaging students in the learning process may be more effective if we adopt non-traditional instruction processes like hands-on training and corporate learning. I think the release of this Newsletter by the department of electrical engineering will supplement to passive lecture-based learning where both students and members of the faculty fraternity are involved in its making.

I hope that "THE BIDYUT" fosters critical thinking in all of its readers, not just for the contributors.

Namita Mallick
Vice Chairman, KGI

MESSAGE FROM PRINCIPAL

I am glad to know that, the EE Department of the College of Engineering Bhubaneswar is publishing a newsletter "THE BIDYUT" for the year 2021-2022. I would like to congratulate the H.O.D., staff and students of the department for the same.

I wish the Newsletter a grand success.

Prof. Dr. Subrat Kumar Mohanty
Principal, CoEB

MESSAGE FROM H.O.D

It gives me immense pleasure to congratulate students, faculties and staff of Electrical Engineering department, College of Engineering Bhubaneswar for the first publication of newsletter "THE BIDYUT". It is believed that the department's newsletter focuses on internal activities such as academics, faculties and student accomplishments, as well as innovation in the department. Today, pollution is a significant problem. In addition to industry, increased mobility is a major factor in rising pollution. So being an electrical engineer everyone should come forward with their own ideas and possibilities for the development of e-Mobility.

Finally, I send my best wishes to the entire team for the publication of the newsletter.

Dr. Sibasish Panda
H.O.D., EE, CoEB

STUDENTS CORNER

Mr. Adarsh Kumar Sethi was selected in TPWODL.

Mr. Ashis Asutosh Pradhan was selected in ARF Pvt. Ltd.

Ms. Rashmi Hembram was selected in Balaji Electro.

Mr. Suvam Pattnaik was selected in Balaji Electro and ICICI bank.

Mr. Saktikanta Sahoo was selected in Balaji Electro.

Mr. Bhabani Shankar was selected in Balaji Electro.

Ms. Mahima Dandasena was selected in Balaji Electro.

TPWODL

ARF

Balaji Electro Controls

ICICI Bank

DEPARTMENTAL ACTIVITIES

A two days online national workshop on "**Issues of Renewable Energy Integrated Smart Grid (IRESG-2022)**", was organized by department of Electrical Engineering from 22nd – 23rd April 2022. **Dr. Sidhartha Panda**, Professor, VSSUT Burla was the chief Guest cum Speaker of the program. He discussed about "Frequency control of renewable energy integrated smart grid with electric vehicles". **Dr Vivekananda Mukherjee**, Associate Professor, IIT-ISM Dhanbad was the key note speaker of the program. He discussed about "Day ahead demand side management using symbiotic organisms search algorithm". **Dr. Subhransu Sekhar Dash**, Professor & HOD Government College of Engineering Keonjhar discussed about "Introduction to smart grid, its challenges and opportunities". **Er. Sumanta Kumar Behera**, Head Projects (FP Rolling BOPs) from Tata Steel Pvt. Ltd. , Kalinga Nagar discussed about "Future of Renewable Energy and its industrial aspect". Total number of participants for this event was more than 300 including participants from abroad. **Prof. P. K. Nayak** was the convener of this program. **Prof. Biswapriti Mishra** was the co-convener. **Prof. Anshuman Nayak & Prof. Anjan Kumar Sahoo** were the coordinators of this event. The complete program was anchored by **Prof. Eepsita Sridevi.**

DEPARTMENTAL ACTIVITIES

An intra college painting competition on the theme "Azadi Ka Amrit Mahotsav" was organized by Electrical Engineering Department on 27th August 2022. Total 26 students across various schools of Koustuv Group of Institutions were participated in this event. Winner and Runners up were awarded. Prof. Anjan Kumar Sahoo and Prof. Biswapriti Mishra co-ordinated this event.

Winner

Volunteers

Runner

DEPARTMENTAL ACTIVITIES

College of Engineering Bhubaneswar, Department of Electrical Engineering

Technical Talk

On

Design and Fabrication of Synchronous Reluctance Motor (SynRm) for Traction Applications

By

Dr. Sibasish Panda
Asst. Prof., EE, COEB

The work will be presented in this talk is carried out at e_mobility Research Lab, V.N.I.T Nagpur, India, under the guidance of Dr. R. K. Keshri and Supported by (Prof.) Dr. Alberto Tessarolo and Dr. Mario Mezzarobba, University of Trieste, Italy.

© S. Panda and R.K. Keshri, V.N.I.T. Nagpur

A Technical Talk on "Design and Fabrication of Synchronous Reluctance Motor for Traction Applications", was conducted by Electrical Engineering Department on 13th Aug. 2022. The resource person was Dr. Sibasish Panda. He enlightened about the challenges in the e-Mobility. He specifically discussed the advantages and disadvantages of different traction motors utilized in e-Mobility solutions. A thorough presentation of the Synchronous Reluctance Motor's concept and construction was made. Additionally, the challenges and suggested solutions were examined.

DEPARTMENTAL ACTIVITIES

A Technical Talk on "Research Methodology and Project Funding" was organized by Electrical Engineering Department, COEB on 28th Sept. 2022. Dr. Siba Kumar Patro, Assistant Professor, Electrical Engineering Dept., IIT Roorkee was the resource person. He discussed about how to perceive a research paper and conduct the literature survey. He also focused on the writing of technical papers. The second phase of his discussion dealt with how to apply and get project funding from different agencies. Dr. Sibasish Panda was the convener of the program. The co-convener of the program was Prof. Anjan Kumar Sahoo and Prof. Biswapriti Mishra. The complete program was anchored by Prof. Eepsita Sridevi.

DEPARTMENTAL ACTIVITIES

Department of Electrical Engineering organized an industrial visit for the final year EE & EEE branch students on 20th Dec. 2022. The visiting place was **220kV/132kV/33kV Grid substation of OPTCL at Chandaka, Patia, Bhubaneswar, Odisha.** The visit was organized by **Dr. Sibasish Panda**, H.o.D. E.E., and co-ordinated by **Prof. Anjan Kumar Sahoo**. All final year students along with 3 faculty members (Prof. Anjan Kumar Sahoo, Prof. Eepsita Sridevi and Prof. Pradipta Nayak) were involved in this visit. **Shri Jagabandhu Sial, D.G.M. OPTCL** co-ordinated the student training. Students got an idea on the newly implemented Gas Insulated Substation (GIS). Students got a practical exposer to the high voltage transmission, distribution, power system protection, power system operation and control etc.

FACULTY PUBLICATIONS

Total 16 number of publications were achieved in the year 2021-22 by the Dept. of EE. Out of which 5 are technical books and 11 are research articles published in different journals.

-Anshuman Nayak, Anjan Kumar Sahoo, " Signal Source Separation using PCA-ICA Method from Real Time Generated Signal", *IJONS*, vol. 11, issue 63, YoP: 2020.WoS Indexed.

-Anjan Kumar Sahoo, Girija Sankar Panigrahi, Krushna Keshab Baral, "Renewable Energy Sources, Technologies and Protection Challenges in Indian Context: A Comprehensive Review", *Design Engineering*, vol. 2, issue 7, YoP: 2021. Scopus Indexed.

-Pradipta Nayak, Anshuman Nayak, Anjan Kumar Sahoo, "A Performance Analysis of Electric Vehicles", *AJEEE*, vol.4, issue.2, YoP: 2021, UGC Care Indexed.

-Anjan Kumar Sahoo, "Comparative Analysis Of Classification Techniques Used In Machine Learning As Applied On A Three Phase Long Transmission Line System For Fault Prediction Using Python" *Turkish Journal of Computer and Mathematics Education*, vol. 12, issue 7, YoP: 2021. Scopus Indexed.

FACULTY PUBLICATIONS

-**Biswapriti Mishra, Anjan Kumar Sahoo, Rajib Nayak**, "Modeling of an Electric Vehicle's Powertrain with a 1 kW BLDC Motor and STM Controller", *Design Engineering*, vol. 2, issue 9, YoP: 2021. **Scopus Indexed.**

-**Prakash Chandra Sahu**, "Active power management in wind/solar farm integrated hybrid power system with AI based 3DOF-FOPID approach Environmental Effects", *Taylor & Francis*, vol. 10, issue 2, YoP: 2021. **Scopus Indexed.**

-**Prakash Chandra Sahu**, "Analysis of Gaussian fuzzy logic-sliding model control and flexible AC transmission systems controllers for automatic generation control of hybrid power system under chaotic-water cycle algorithm approach", *Wiley*, vol. 31, issue 12, YoP: 2021. **SCI Indexed.**

-**Prakash Chandra Sahu**, "A fuzzy adaptive fractional order-PID controller for frequency control of an islanded microgrid under stochastic wind/solar uncertainties" *Taylor & Francis*, vol. 10, issue 2, YoP: 2021. **Scopus Indexed.**

FACULTY PUBLICATIONS

-**Prakash Chandra Sahu**, "Load frequency control of a diverse energy source integrated hybrid power system with a novel hybridized harmony searchrandom search algorithm designed Fuzzy-3D controller" *Taylor & Francis*, vol. 10, issue 3, YoP: 2021. **Scopus Indexed.**

-**Prakash Chandra Sahu**, "Power Generation Monitoring of a hybrid Power System with I-GWO designed trapezoidal type-II fuzzy Controller", *Taylor & Francis*, vol. 10, issue 3, YoP: 2021. **Scopus Indexed.**

-**Gopal Krishna Mohanty**, "Study & Modelling of Solar Energy and Solar Power Tower", *JICR*, vol.14, issue 4, YoP: 2022. **UGC Care Indexed.**

-A Technical book on "Renewable Energy System" was published by **Prof. Anjan Kumar Sahoo**, *Pencil*, ISBN 978-9354389368, YoP:2021.

-A Technical book on "Questions & Answers on Renewable Energy Sources" was published by **Prof. Anjan Kumar Sahoo**, *Notion Press*, ISBN:978-1684947379, YoP:2021.

-A Technical book on "Renewable Power Generating System" was published by **Prof. Anjan Kumar Sahoo**, *Kindle*, ISBN: 979-8720781361, YoP: 2021.

FACULTY PUBLICATIONS

-A Technical book on "Renewable Energy & Green Technology" was published by **Prof. Anjan Kumar Sahoo**, *Notion Press*, ISBN 9781638732600, YoP: 2021.

-A Technical book on "Questions & Answers on Basic Electrical Engineering" was published by **Prof. Anjan Kumar Sahoo**, *Walnut Publication*, ISBN: 978-1957302294, YoP: 2022.

FACULTY ACHIEVEMENTS

-**Prof. Anshuman Nayak** participated and successfully completed AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "AI Solution for Optimum Utilization of Power and Energy" from 5th July 2021 to 9th July 2021 at National Institute of Technology, Srinagar.

-**Prof. Anshuman Nayak** participated and successfully completed AICTE Training and Learning (ATAL) Academy Online Elementary FDP on "Electrical Distribution System Analysis with Renewable Energy Sources" from 12th July 2021 to 16th July 2021 at National Institute of Technology, Kurukshetra.

FACULTY ACHIEVEMENTS

-Prof. Pradipta Kumar Nayak completed two 5 days short term courses on "Energy Engineering" organized by School of Energy & Environment Management with ATAL sponsorship and received the course completion certificates in Feb. 2021.

-Prof. Pradipta Kumar Nayak completed two 5 days short term courses on "Green Technology for Sustainable Life: Indian Perspective" organized by National Institute of Technology, Silchar, Assam with ATAL sponsorship and received the course completion certificates in July. 2021.

-Prof. Gopal krishna Mohanty completed 2 days short term courses on "Green Technology & Electric Vehicle" organized by Silicon Institute of Technology, Bhubaneswar, Odisha, from 8th to 10th February 2022.

EDITORIAL BOARD

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Prof. Anjan Kumar Sahoo

Dr. Sibasish Panda

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Dr. Sadasiv Dash, Registrar, KGI

Dr. Sujit Kumar Khuntia, Head IQAC, COEB

Shri Koustuv Mallick, Executive Director, KGI

We welcome your comments and ideas for future issues.

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