

Date: 14 November 2024

Organized by: Department of Electrical Engineering, Faculty of Engineering and Technology

Venue: Gurukula Kangri (Deemed to be University), Haridwar

Coordinators: Mr. Gajendra Singh Rawat, Mr. Lokesh Bhardwaj

Introduction

The Department of Electrical Engineering at the Faculty of Engineering and Technology, Gurukula Kangri (Deemed to be University), Haridwar, organized a comprehensive workshop on the topic of *Windings* on 14 November 2024. The workshop was aimed at providing students with both theoretical and practical insights into the fundamentals of electrical windings, the assembly of transformers, and the latest techniques in the field. The event attracted a diverse group of participants, including diploma and undergraduate students, all keen to expand their knowledge in electrical engineering fundamentals.

Workshop Objective

The primary objective of the workshop was to deepen students' understanding of windings and their applications in transformer assembly and other electrical devices. Given the critical importance of winding techniques in electrical engineering, this workshop aimed to equip students with foundational knowledge and practical skills that are essential for building transformers and other electrical equipment.

Resource Persons and Special Guests

The workshop was honored by the presence of several distinguished guests and resource persons, including:

- **Mr. Shiva Kumar Yadav** from IIT Roorkee, who served as the workshop specialist. His expertise in electrical windings and transformer assembly brought invaluable insights and hands-on experience to the students.
- **Mr. Gajendra Singh Rawat**, Head of the Department of Electrical Engineering, who coordinated the workshop and mentored the students. Mr. Rawat emphasized the importance of staying updated with new technological advancements.
- **Prof. Vipul Sharma**, Dean of the Faculty of Engineering and Technology, who praised the Electrical Engineering Department for organizing the event and encouraged students to actively participate in workshops to build practical skills.

Special thanks were also extended to **Mr. Aviral Awasthi**, who contributed significantly to the smooth execution of the workshop, and to other faculty members, including **Dr. Brijesh Kumar**, **Mr. Yogesh Kumar**, **Dr. Ashish Dhamandha**, and **Mr. Gaurav Kumar**, who showed their support by attending the workshop.

Workshop Content and Sessions

The workshop was structured into several sessions covering both theoretical concepts and practical demonstrations:

1. **Introduction to Windings**

Mr. Shiva Kumar Yadav commenced the workshop with an introductory session on windings, explaining the fundamental concepts, types of windings, and their applications in various electrical devices. He discussed the technical principles behind coil winding, focusing on transformer windings, and outlined the differences between primary, secondary, and tertiary windings.

2. **Practical Demonstration: Transformer Assembly**

Following the introductory session, Mr. Yadav demonstrated the assembly of a transformer. This practical segment was one of the highlights of the workshop, as students had the opportunity to witness the step-by-step process of winding a transformer coil. Mr. Yadav explained each step in detail, from core selection and wire selection to layering and testing the winding. He emphasized the importance of precision in winding to avoid insulation failure and maintain efficiency.

3. **Hands-on Training Session**

Students were given hands-on training, allowing them to engage directly with winding materials and equipment. Under Mr. Yadav's guidance, students practiced winding techniques and learned to troubleshoot common issues faced during assembly. The session allowed them to ask questions and receive immediate feedback, reinforcing their understanding of transformer assembly.

4. **Advanced Topics and Q&A Session**

To cater to the varied experience levels of participants, Mr. Yadav also covered some advanced topics, such as different winding configurations, efficiency optimization, and winding insulation techniques. The session concluded with an open Q&A, where students asked questions about applications in real-world scenarios and challenges faced in the field of electrical windings.

Keynote by Mr. Gajendra Singh Rawat

As the Head of the Department, Mr. Gajendra Singh Rawat provided additional insights, drawing upon his experience and encouraging students to embrace innovative learning opportunities. He emphasized the significance of practical workshops as an extension of classroom learning and motivated students to be proactive in developing technical skills essential for their professional growth.

Address by Prof. Vipul Sharma

Prof. Vipul Sharma, Dean of the Faculty of Engineering and Technology, addressed the gathering at the conclusion of the workshop. He commended the Electrical Engineering Department for organizing such an informative and hands-on event. Prof. Sharma reiterated the importance of technical workshops in the academic curriculum and encouraged both faculty and students to pursue continuous learning and development in emerging technological fields.

Participation and Engagement

The workshop witnessed active participation from students across various academic levels, including diploma (first, second, and third years) and B.Tech (first and second years). Their enthusiasm and engagement were evident throughout the sessions, especially during the hands-on training, where students had the opportunity to apply theoretical knowledge to practical tasks. The interactive nature of the workshop fostered a collaborative learning environment, with students working in teams to complete tasks under the guidance of faculty members and Mr. Yadav.

Acknowledgments

The successful organization of the workshop was made possible through the collective efforts of faculty members and students. Special appreciation goes to:

- **Mr. Gajendra Singh Rawat** and **Mr. Lokesh Bhardwaj** for coordinating the event and ensuring its smooth execution.
- **Mr. Aviral Awasthi** for his organizational support and dedication to making the workshop a success.

The Electrical Engineering Department extends its gratitude to the Faculty of Engineering and Technology and the university administration for their support and encouragement.

Conclusion

The workshop on windings concluded on a high note, leaving a positive impact on all participants. The students gained not only technical knowledge but also hands-on skills in transformer assembly and winding techniques, which are essential competencies for their future careers in electrical engineering. Feedback from students was overwhelmingly positive, with many expressing their desire for more such workshops on specialized topics. The department aims to continue organizing similar events to foster an environment of practical learning and innovation.

Outcome

This workshop served as a stepping stone for students to explore advanced concepts in electrical engineering, equipping them with practical skills and insights into transformer winding—a crucial area in the field. It also reinforced the department's commitment to bridging the gap between theoretical knowledge and practical application, ensuring that students are well-prepared for the challenges in the industry.

The event's success underlines the importance of workshops in enhancing the academic experience, and the Electrical Engineering Department looks forward to organizing more such educational events in the future.



