NEW HORIZON
COLLEGE OF ENGINEERING

Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC
Accredited by NBA and NAAC with Grade "A"
New Horizon Knowledge Park, Ring Road, Bellandur Post, Bengaluru 560 103

DEPARTMENT OF
ELECTRICAL AND ELECTRONICS ENGINEERING

EXPERT LECTURE

On

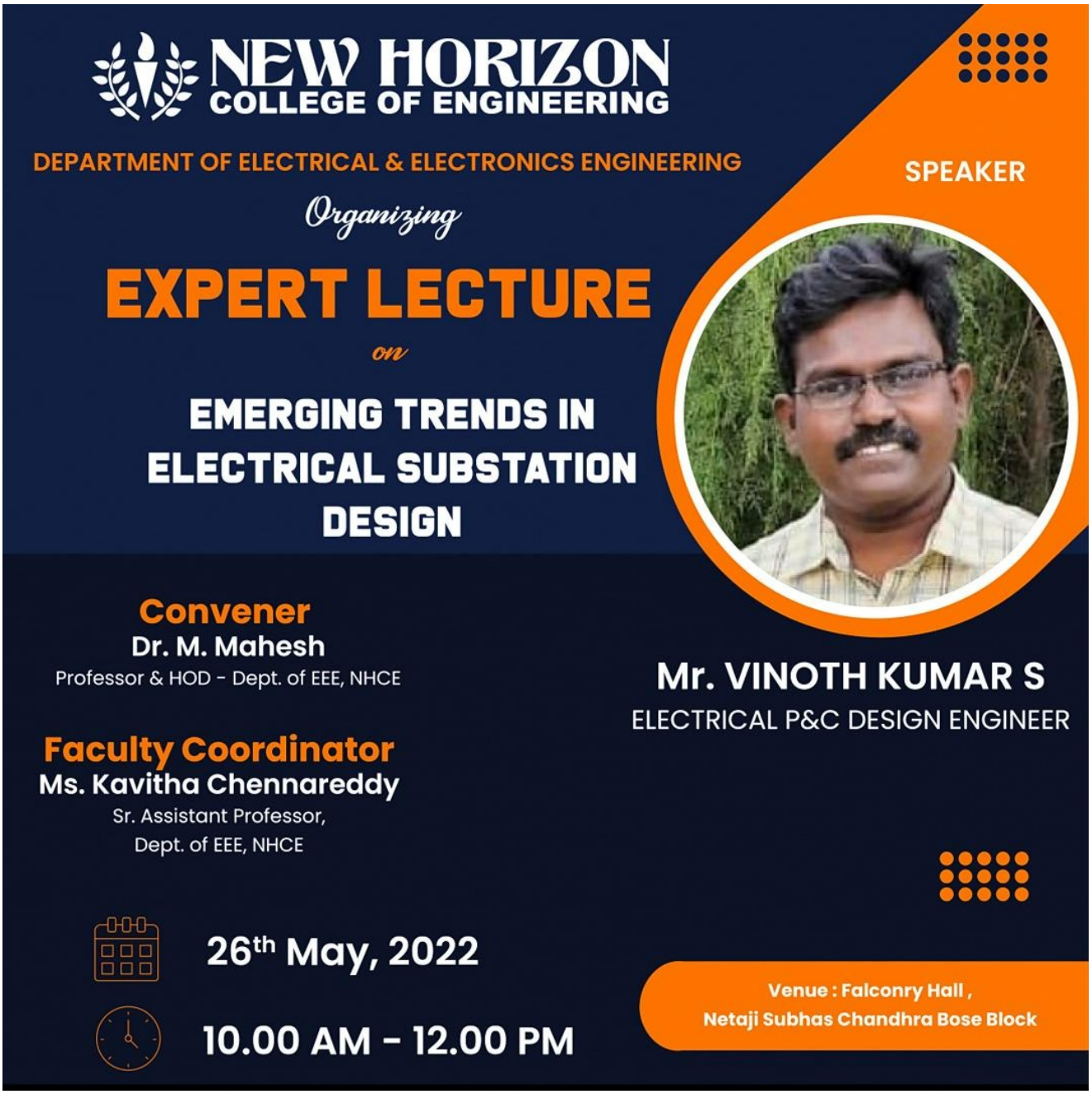
"EMERGING TRENDS IN ELECTRICAL SUBSTATION DESIGN"

- **DATE:** 26th May, 2022
- **VENUE:** FALCONRY HALL (Netaji Subhas Chandhra Bose Block).
- **TIMINGS:10:00 AM - 12:00 PM**

FACULTY COORDINATOR
Ms. KAVITHA CHENNAREDDY

OBJECTIVE:

The fundamental goal of this talk is to comprehend the students about the emerging trends in electrical substation design and its significance.



INAUGURATION:

The event was inaugurated by Ms. Kavitha Chennareddy (senior Assistant Professor), Department of Electrical and Electronics Engineering in the presence of all the participants.The event was hosted by Meghana S.

INTRODUCTION

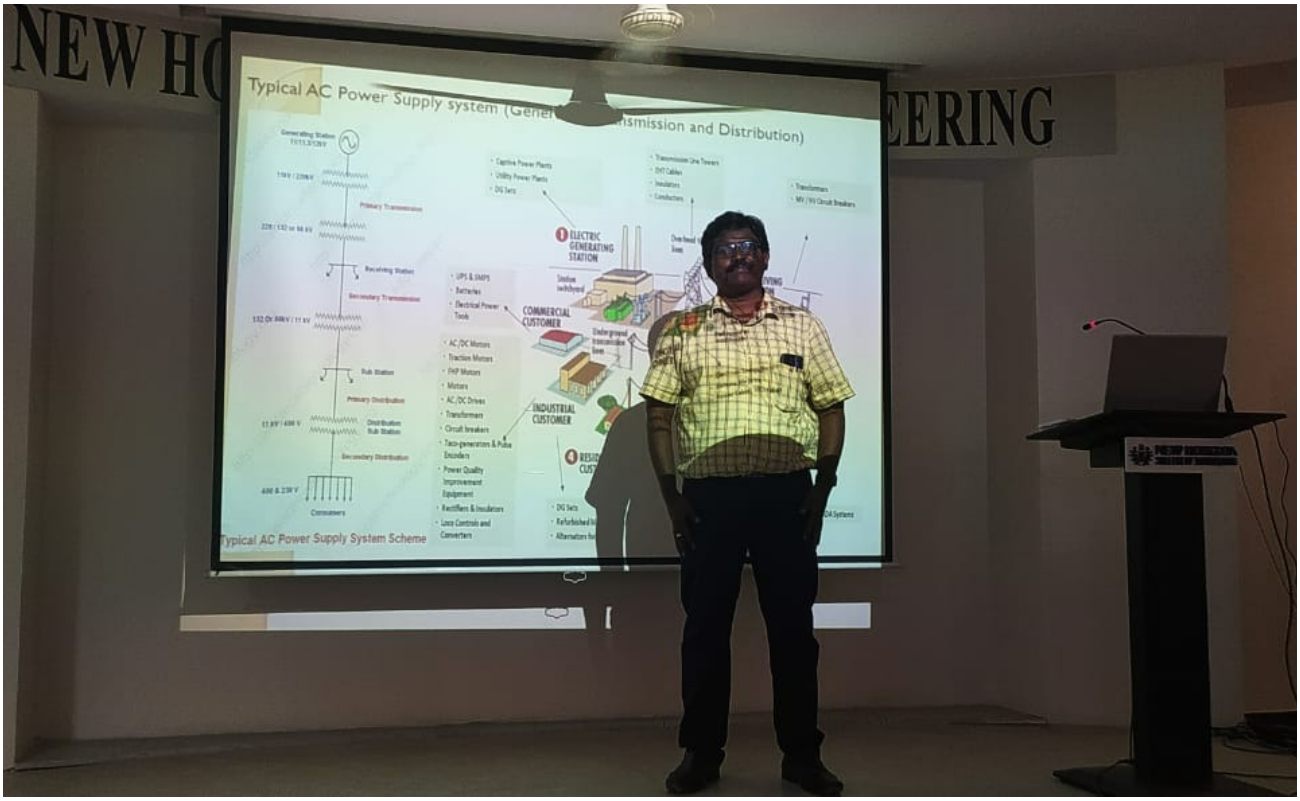
Mr. Vinoth Kumar S was invited to college to give us brief description on **"Emerging Trends in Electrical Substation Design" .**

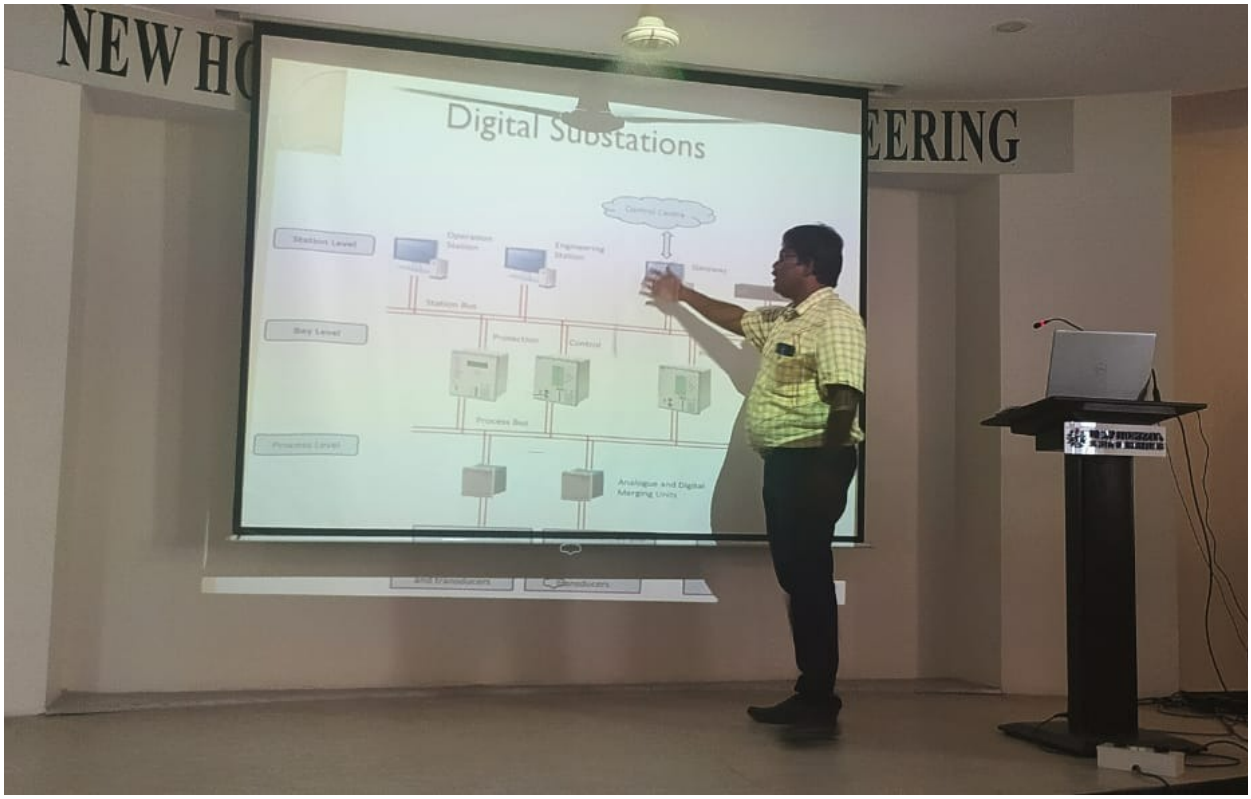
Sir completed his ME(PE & Drives) in 2001 & currently working as an ELectrical protection and control design engineer with an experience of 9 years 11months and presently associated with Balfour Beatty Infrastructure India Pvt, Bengaluru.

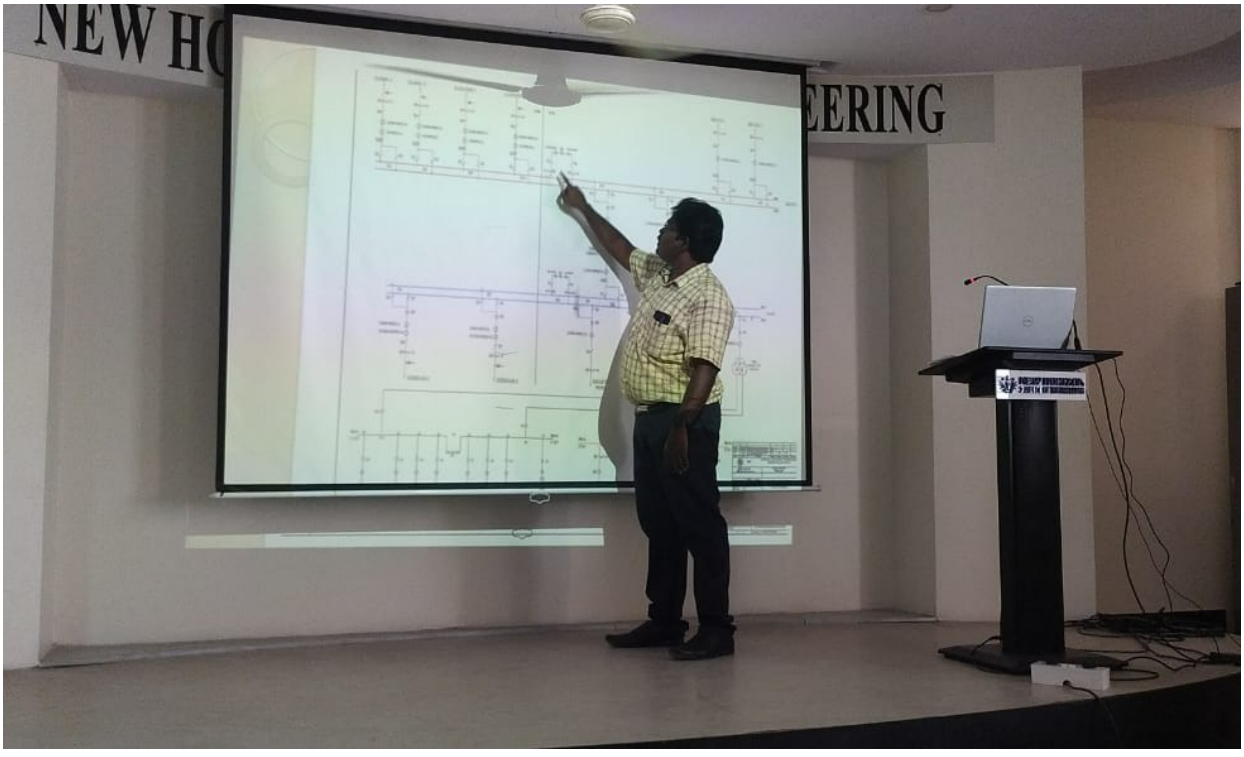
He even demonstrated excellence in Electrical substation design & development also ensuring the compliance with ANSI , IEC , IEEE and National Grid Standards.

He worked for UK (National Grid projects) at USA (PSE & G & PEPCO) also in Middle east countries.

Received a best teamwork champion award in the year 2021.
Nominated for the Engineering Excellence Award and also nominated in the top 70 for the Best Behavior Championship award for the contribution in substation projects.




NEW HC
EERING
Digital Substations
Station Level
Operation Station
Engineering Station
Gateway
Station Bus
Bay Level
Protection
Control
Process Bus
Process Level
Analogue and Digital Merging Units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- Substation is a part of the Electrical Generation , Transmission and Distribution system.

- Substation transforms voltage from high to low, or the reverse, or performs any of several other important functions.

- A brief information was shared regarding the relay panel over 400KV substation.

TRANSFORMER

- A transformer with a nominal primary voltage of 400kV or 275kV connected to a lower voltage system is defined as a Super grid transformer.
- An SGT can either be an autotransformer or a two winding transformer depending on the secondary voltage level.
- Voltage ratios 400/275kV, 400/132kV, 275kV are auto-transformers type.
- 400/66kV, 275/66kV, 275/33kV are of Two
- winding transformer type.

Followed by its applications, detailed explanation of line diagrams and its importance in the substation were discussed by the guest.

- HSOC & 2 stage OC Protection
- Why is the O/C Guard required ?
- General Arrangement
- Wiring Diagram
- Wiring Table Creation (or) Production file
- Bill Of Material (BOM)
- Software Tools Using In Substation Protection & Control Designing
- Local / Remote Control
- Antipumping Relay
- Cable Trough
- Breaker Failure
- Digital Substations

All the above topics were discussed briefly with the pictures and its application and roles.

CONCLUSION

Every one of the understudies were made to collaborate during the meeting with their inquiries in regards to subjects talked about , the visitor speaker cleared every one of the inquiries to the understudies followed by communicating with understudies by posing the inquiries as well.

THANK YOU