

# WEBINAR SESSION ON IEEE PELS DAY

Date: June 20, 2020

## About the Speaker:



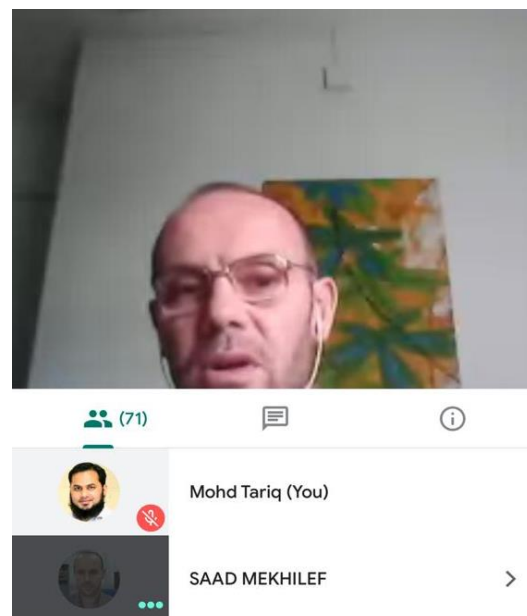
Prof. Saad Mekhilef is an IET Fellow and IEEE senior member. He is currently a Professor and the Director of the Power Electronics and Renewable Energy Research Laboratory with the Department of Electrical Engineering, University of Malaya. He is also currently the Dean of the Faculty of Engineering, University of Malaya. He is also a Distinguished Adjunct Professor with the School of Software and Electrical Engineering, Faculty of Science, Engineering and Technology, Swinburne University of Technology, VIC, Australia. He has authored or coauthored more than 500 publications in international journals and conference proceedings.

His current research interests include power converter topologies, control of power converters, renewable energy, and energy efficiency. He is serving as an Editor of **Renewable & Sustainable Energy Reviews**, an Associate Editor of **IEEE Transactions on Power Electronics**, **IEEE Open Journal of Industrial Electronics**, and **Journal of Power Electronics**.

Amidst of the Coronavirus pandemic of 2020, the webinar session on the occasion of **IEEE Power Electronics Society Day (20-June-2020)** was organized by the **Department of Electrical Engineering** in collaboration with **IEEE Students Branch ZHCET, Aligarh Muslim University** on Google meet Platform. In the session an expert lecture was delivered by Dr. Saad Mekhilef on the topic **"Online Transformerless Uninterruptible Power Supply(UPS) System with a Smaller Battery Bank for Low Power Applications"**.

Around 70 faculty and students participated in the webinar from different institutions of India. The duration of the webinar was 60 minutes. The lecture began with the emphasis on the need of power capacity of the datacenters. He discussed the economic loss that occurred during the Fukushima nuclear power plant accident(2011)(power backup failure). Hence a high surety and long backup time UPS is the key to avoid these economic losses.

The Speaker also addressed that the online UPS system with high frequency transformer isolation is used to overcome the problem related to grid frequency transformer UPS system. Although the size has been reduced, the efficiency of the system decreases due to high



number of active switches in these topologies. In order to overcome the problems related to topologies, the transformer-less UPS system has been introduced. Overall the volume of the system is minimized by reducing the size, weight, and battery bank of the system.

The lecture ended with question-answer session by the attendees. Questions were welcomed from different area of research interest. Professor Mekhilef also gave a short talk on how to write an effective research paper. He said '**A good writer has to be a good reader**' and there is no shortcut for it.

The Speaker was introduced by Mr. Mohammad Zaid (Assistant Professor and Branch Counsellor) and vote of thanks was presented by Dr. Mohd Tariq (Assistant Professor and Convener of the webinar session).

SAAD MEKHILEF is presenting

Mirakhi Behera and 59 more

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## Specifications and Performance

• Specification:

| Parameters           | SYMBOL      | Value                |
|----------------------|-------------|----------------------|
| Input Voltage        | $V_{in}$    | 220V                 |
| Output Voltage       | $V_{out}$   | 220V                 |
| Grid Frequency       | $f_r$       | 50Hz                 |
| Output Frequency     | $f_o$       | 50Hz                 |
| Number of Batteries  | $V_b$       | 2 Parallel(24V/12Ah) |
| Maximum Output Power | $P_{n,max}$ | 1kVA                 |
| DC Link Voltage      | $V_d$       | 380V                 |

• Results: Transition from Normal to Battery Powered Mode and Vice versa

Webinar Session On Online Transformerless ...

SAAD MEKHILEF