



Technical Presentation

“Power Electronic Converters: Modelling and Design Consideration”

by

Dr. Aboubakr Salem

WVU Tech

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WVU Tech Library,

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512 South Kanawha Street | Beckley, West Virginia 25801

Abstract:

The power electronic converters became essential devices in smart grids, renewable energy integration and control of various power systems. Implementing such converters requires special consideration in design and modelling. This seminar aims to present the basics for designing of a three-phase inverter, as one of the vital device in industrial applications. The topics that will be covered in this session are as follows:

- 1- Design of a three-phase Inverter circuit using MATLAB power system toolbox.
- 2- Design an open-loop PWM control for three-phase inverter.
- 3- Loss calculation of power electronic converter.
- 4- Heatsink selection for power electronics converter, and
- 5- Design consideration for printed circuit board of high power converters.



Dr. Aboubakr Salem, Member IEEE '14, is an Assistant Professor with West Virginia University- Institute of Technology. He received his B.Sc. and M.Sc. degrees in Electrical Engineering from Helwan University, Egypt, in 2004 and 2009, respectively, and the Ph.D. in Electromechanical Engineering from Ghent University, Belgium, in 2015. Dr. Salem has teaching experience in many universities in Egypt, Belgium, Egypt, Saudi Arabia, and USA since 2006 as TA, RA, and Assistant Professor. He is currently an assistant professor with Electrical and Computer Engineering Dept., WVU Institute of Technology. Dr. Salem's research interests include power electronic converters design using modern wide-band-gap semiconductor technologies applied to electrical drives, electric vehicles, renewable energy, and smart grid applications. Dr. Salem funded research activities include several international projects, with more than \$30 million. He has more than 40 publications in reputable journals and conferences and three granted/ filed/ submitted patents in the field of power electronic converter design and control. Dr. Salem supervised and graduated many Master's and PhD's students. Additionally, he is a reviewer in many reputable journals, i.e., Industrial Electronics and Power Electronics IEEE Transactions.

PIZZA LUNCH WILL BE PROVIDED.