Prof. Dr. Saad Mekhilef

BIOGRAPHY

Prof. Dr. Saad Mekhilef is an IEEE and IET Fellow. He is a Distinguished Professor at the School of Science, Computing and Engineering Technologies, Swinburne University of Technology, Melbourne, Australia, and an Honorary Professor at the Department of Electrical Engineering, University of Malaya. He authored and co-authored more than 500 publications in academic journals and proceedings and five books with more than 39,000 citations, and more than 70 Ph.D. students graduated under his supervision. He serves as an editorial board member for many top journals, such as IEEE Transactions on Power Electronics, IEEE Open Journal of Industrial Electronics, IET Renewable Power Generation, Journal of Power Electronics, and International Journal of Circuit Theory and Applications.

Prof. Mekhilef has been listed by Thomson Reuters (Clarivate Analytics) as one of the Highly Cited (World's Top 1%) engineering researchers in the world in 2018, 2019, 2020, and 2021. He is actively involved in industrial consultancy for major corporations in the Power Electronics and Renewable Energy projects. His research interests include Power Conversion Techniques, Control of Power Converters, Maximum Power Point Tracking (MPPT), Renewable Energy, and Energy Efficiency.

Plenary Title:

"Power Electronics in Renewable Energy Systems"

ABSTRACT:

Global electrical energy consumption is still rising, and there is a steady demand to increase power capacity. It is expected to be doubled within 20 years. Deregulation of energy has lowered the investment in larger power plants, which means the need for new electrical power sources may be very high soon. Energy production, distribution, and use should be as technologically efficient as possible. Two powerful technologies will play essential roles in solving future problems. One is changing electrical power production from conventional to renewable energy resources. Another is to use highly efficient power electronics in power generation, transmission/distribution, and end-user applications. In this presentation, I will discuss the most emerging renewable energy sources, wind energy and photovoltaic, and how power electronics converters/inverters are playing an essential role in improving the conversion efficiency of the RE systems and what the most recent converters/inverters topologies.