

POWER ELECTRONICS & RENEWABLE ENERGIES (PRE) COURSES AND SEMINARS

CIRCUITS AND SYSTEMS SOCIETY CHAPTER
(IEEE WESTERN AUSTRALIA SECTION)
AND THE UNIVERSITY OF WESTERN AUSTRALIA



GRID FRIENDLY PHOTOVOLTAIC SYSTEMS



DATE: WEDNESDAY, 9 AUGUST 2023

TIME: 15:00 TO 16:00 (GMT +8) [9:00 TO 10:00 (CET)]

REGISTRATION: <https://events.teams.microsoft.com/event/d3f7368c-e00e-4e8e-bb86-cbdffd6cfe4b@05894af0-cb28-46d8-8716-74cdb46e2226>

TIME FOR Q&A IS ALLOCATED FOLLOWING THE WEBINAR.

AFTER REGISTERING FOR THE ONLINE WEBINAR, YOU WILL RECEIVE AN ACCESS LINK. THERE IS NO REGISTRATION FEE ASSOCIATED WITH THIS EVENT.

BIOGRAPHY

Dr. Hossein Dehghani Tafti received the B.Sc. and M.Sc. degrees in electrical engineering and power system engineering from the Amirkabir University of Technology, Tehran, Iran, in 2009 and 2011, respectively, and the Ph.D. degree in electrical engineering from Nanyang Technological University Singapore, in 2018. From January 2018 to April 2020, he was a Research Fellow with Nanyang Technological University, where he was working on the control of photovoltaic systems for grid support. From May 2020 to May 2021, he was a senior research associate with the University of New South Wales, Sydney, Australia, where he worked on modelling and testing of commercial photovoltaic inverters. He is currently a research fellow at the Department of Electrical, Electronic and Computer Engineering, University of Western Australia, Perth, WA. His research interest includes the grid-integration of renewable energy sources, in particular, photovoltaics and energy storage and the design and control of multilevel power converters.

SPEAKER'S CONTACT DETAILS

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ABSTRACT

Due to the intermittent nature of renewable energy resources, especially in wind and PV power plants, countries with a significant amount of installed renewable energy sources face several challenges. For instance, if the amount of the generated power from renewable energy sources exceeds the load demand during peak power generation periods, the power system may be overloaded and subsequently, protection devices may be triggered. To ensure the stability and quality of the power system, power system operators continually update the requirements for photovoltaic (PV) systems for the connection to the grid, referring to as grid codes and standards, which aim to reduce the adverse effects of the high penetration of installed PV systems in the power system.

This seminar presents an overview of various grid codes and standards for the operation of grid-friendly PV systems. According to these new requirements, a flexible power injection capability is required in PV systems. Various algorithms for flexible power point tracking in PV systems will also be presented in this seminar. Furthermore, the operation of PV systems during voltage and frequency disturbances will be explained.

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