

The Department of Electric Power Engineering (IEL) at NTNU and the Norwegian chapter of IEEE Power & Energy Society (PES) invites to the workshop

Future electrical systems applications: perspectives for a Norwegian-Brazilian cooperation

Monday 21st of October 2019, 13:00-15:30

NTNU Gløshaugen, Elektro Rådsrommet, Room G144 Trondheim

Chair

Elisabetta Tedeschi, NTNU-IEL

13:00 Introduction

Elisabetta Tedeschi, NTNU-IEL

Fernando Marafão, UNESP

13:15 Cooperative control of power converters in modern grids

Daniele Ferreira, UFMG / Augusto Alonso, UNESP/NTNU

Without proper coordination and management, the expectation of achieving power electronic-based grids becomes elusive. Thus, this presentation covers the challenges related to the development of cooperative control strategies for steering distributed power converters in electrical systems, highlighting AC microgrids. The features of different control strategies will be presented, and the concern for power quality improvement will be addressed demonstrating recent research findings.

14:00 Coffee-break / Networking

14:15 Renewable energy sources in oil and gas platforms

Erick Alves, NTNU / Spyridon Chapaloglou, NTNU

This presentation will provide an overview of the challenges arising from integration of intermittent energy sources into oil and gas platforms without connection to power from shore. A review of current research will be given, together with topics under investigation by the Power Electronic Systems and Components (PESC) research group at NTNU.

14:50 DC power distribution optimization for subsea applications

Nam Le, NTNU

This presentation will review multi-objective optimization techniques to identify optimal configurations for the DC power distribution grid supplying power to submerged loads. AC and DC power distribution configurations will be compared in terms of multiple standpoints (e.g. losses, weight, cost, etc.).

15:25 Wrap-up / Conclusion

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Background

We are currently witnessing a quick and radical energy transition, underpinned by the quest for increased renewable energy integration, as well as a more efficient energy use. This corresponds to a clear trend towards electrification in multiple sectors, which is enabled by a more widespread use of power electronic converters, changing the way power is generated, transmitted and distributed.

The goal of this workshop is to discuss the role of advanced power electronics control and efficient energy management in different applications, ranging from land-based microgrids, to offshore platforms and subsea applications.

The event is organized within the framework of a research and educational cooperation between NTNU and two leading Brazilian Universities, i.e. Sao Paulo State University, UNESP, and Federal University of Minas Gerais, UFMG, in the field of “Power Theories and Cooperative Control for Renewable Energy Integration” (NB_POCREI project).

The workshop will involve participants from both countries and aims to be the venue to discuss future opportunities for techno-scientific collaboration between Norway and Brazil in these and other areas, with both academic and industrial partners.

Note: Limited number of seats.

Information

The seminar is free of charge. Contact person is Erick Alves, erick.f.alves@ieee.org, tlf. 932 61 518.

Registration

Please visit: <https://events.vtools.ieee.org/m/206350>

Registration deadline: 17th of October at 23:00.

IEEE (Institute of Electrical and Electronic Engineers) is an international non-profit organization promoting technologies related electrical engineering. IEEE has about 420.000 members and is present within 160 countries. Power & Energy Society is the IEEE chapter focusing on electrical power and energy. IEEE PES' ambition is to promote and share scientific knowledge about electrical power and energy. The Norwegian PES chapter substantiates this ambition by arranging technical seminars.

IEEE membership yearly fee is 169 USD + 35 USD for PES. New members are awarded 50 % discount first year. Students have reduced fees. Please see IEEE website for more information:

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Any questions? Please don't hesitate to contact the chair Elisabetta Tedeschi, elisabetta.tedeschi@ntnu.no