



Tallinna Tehnikaülikooli elektrotehnika instituut
ENERGIA- JA GEOTEHNIKA DOKTORIKOOL II

INTENSIIVKURSUS TEEMAL

**" CONTROL, MODULATION AND NEW CONVERTER
TOPOLOGIES FOR DRIVES, ACTIVE RECTIFIERS AND
RENEWABLE ENERGY SOURCES "**

Lektor: Prof. Mariusz Malinowski, Warsaw University of Technology (Poland)

Intensiivkursus toimub inglise keeles.

Toimumiskoht: TTÜ Energeetikamaja, 3 korrus, **NRG-323**.

Toimumisaeg: 16.09.2014 kl. 9.00-17.30

PROGRAMM JA AJAKAVA

- 09.00-09.05** **Opening of the course. Prof. Tõnu Lehtla**
- 09.05-10.30** **Control and modulation of electrical drives.**
- 09.05-09.20 Introduction to control of electrical drives.
- 09.20-09.35 Pulse Width Modulation (PWM).
- 09.35-09.50 Clarke and Park transformations, estimators.
- 09.50-10.30 Field Oriented Control versus Direct Torque Control (FOC vs DTC).
- 10.30-12.00** **Advanced control of active rectifiers**
- 10.35-10.50 Introduction to control of active rectifiers
- 10.50-11.20 Indirect power control methods
- 11.20-12.00 Direct power control methods
- 12.00-13.00** **Lunch**
- 13.00-14.30** **Introduction to renewable energy sources technology (RES).**
- 13.00-13.30 Renewable Energy Sources (RES) and future electrical network vision
- 13.30-14.30 Energy conversion from RES.
- 14.30-17.00** **Control, modulation and new converter topologies for RES**
- 14.30-15.30 AC/DC converters for RES
- Maximum Peak Power Tracking (MPPT)
- Control of full bridge three-phase AC/DC converter
- 15.30-16.30 AC/DC converters for RES
- Single-phase converters
- Three-phase converters (classic three-phase multilevel converters and recent advances in three-phase multilevel converters)
- Two-level converter versus three-level NPC converter
- Modulation and control for single-phase converters
- Modulation, estimation and control for three-phase converters
- 16.30-17.00 LCL filter design and active damping (AD)
- Passive damping and LCL filter design
- Active damping (AD)
- 17.00-17.30** **Conclusions and closing of the course.**

- Koolituse läbinuile väljastatakse vastav **tunnistus**, mis kinnitab 1 EAP saamist.
 - **Registreerumine.** Osavõtjate arvu õigeks teadasaamiseks ja teeninduse tellimiseks palume registreeruda hiljemalt **12.09.2014**
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