



Tallinna Tehnikaülikooli elektrotehnika instituut  
ENERGIA- JA GEOTEHNIKA DOKTORIKOOL II

**INTENSIIVKURSUS TEEMAL**  
**" POWER CONVERTERS WITH SILICON**  
**CARBIDE (SIC) DEVICES "**

Lektorid: Prof. Jacek RABKOWSKI, Warsaw University of Technology (Poland)

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Intensiivkursus toimub inglise keeles.

Toimumiskoht: TTÜ Energeetikamaja , ruum NRG-315.

Toimumisaeg: 06.10.2014 kl. 9.00-17.30

**PROGRAMM JA AJAKAVA**

**09.00-09.05 Opening of the course. Prof. Tõnu Lehtla**

**09.05-10.00 Introduction to Silicon Carbide (SiC) power transistors**

09.05-09.20 Features of Silicon Carbide

09.20-09.50 SiC transistors concepts (JFETs, BJTs, MOSFETs)

09.50-10.00 Devices available on the market - brief overview

**10.00-12.00 Gate/base drivers and parallel-connection issues**

10.00-10.30 JFETs: normally-ON problem and available solutions

10.30-11.00 Base drivers for SiC BJTs.

11.00-11.30 Driving of SiC MOSFETs. Protection schemes

11.30-12.00 Parallel connection of SiC transistors

**12.00-13.00 Lunch**

**13.00-14.00 Modelling and simulation**

13.00-13.20 Simple electro-thermal calculations.

13.20-13.40 Impact of SiC FETs reverse conduction on conduction power losses

13.40-14.00 Advanced devices/converters modelling in SABER

**14.00-16.00 Converters with SiC power devices.**

14.05-15.00 Examples of converters built with discrete devices (40 kVA inverter, 250 kHz DC/DC boost converter, 4x125 kHz interleaved converter)

15.00-15.50 Converters built with power modules (125 kVA JFET inverter, 312 kVA MOSFET converter, 10 kVA AC/DC converter)

15.50-16.00 Final remarks.

**16.00-16.15 Conclusions and closing of the course.**

➤ **Registreerumine.** Osavõtjate arvu õigeaegsaks teadasaamiseks ja teeninduse tellimiseks palume registreeruda hiljemalt **03.10.2014**

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