PhD intensive course

NANOTECHNOLOGY AND ENVIRONMENTAL PROTECTION

Prof. Dr. D. Martuzevičius
Department of Environmental Technology

25 February – 8 March 2019

About the course:

The course is aimed to provide insights on the applications of nanomaterials and nanotechnologies in environmental remediation as well as associated benefits and risks. The course in mainly based on the processes of nanocatalysis and nanofiltration, and the application of these for the treatment of polluted waters and air. The course relies on hands-on laboratory exercises in nanomaterial synthesis, characterization and testing.

Aim of the course:

To experience the applications of nanomaterials and nanotechnologies in environmental remediation.

Course format, ECTS credits:

The course is organized as an intensive 2-week course, including 16 academic hours of lectures, 16 academic hours of seminars as well as 4 academic hours of laboratory work. Several laboratories for the characterization of nanomaterials will be used throughout the course. The self-sufficient work will include the report on laboratory assignment, preparation of course work (paper analysis) and preparation to the exam (verbal).

The course work must be compiled and sent back to the teacher maximum 2 weeks after leaving KTU.

The evaluation is on a pass/fail basis (graduation on the Lithuanian 10-scale may be obtained if necessary).

Study load: 6 ECTS credits

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Nanotechnology and Environmental Protection

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Target group:

The candidates should possess master-level knowledge on environmental issues as well as core subjects in chemistry and physics.

Main topics of the course:

- Introduction to nanomaterials and nanotechnologies
- Application of nanotechnologies in water treatment processes
- Nanomaterials and nanotechnologies in air pollution abatement processes
- Adverse impact of nanomaterials to the environment. Nanotoxycology.

References:

1. Anita Street, Richard Sustich, Jeremiah Duncan, Nora Savage. Nanotechnology Application for Clean Water. 2nd Edition 2014, William Andrew Inc. ISBN: 9781455731169
2. William C. Hinds. Aerosol Technology: Properties, Behavior, and Measurement of Airborne Particles. Wiley-Interscience; 2 edition, 1999, ISBN: 978-0471194101
3. Pramod Kulkarni, Paul A. Baron, Klaus Willeke. Aerosol Measurement, 3rd edition. Wiley, 2011. ISBN 9780470387412

Course schedule:

Start date: 25 February 2019 at 11 a.m.
End date: 8 March 2019 at 2 p.m.

Course fee:

12-day 6 ECTS course fee is 540 EUR . Travel, insurance, accommodation, and other personal expenses *are not* included in course fee.
Course is free of charge for students who come to study under the Erasmus+ program.

Registration to the course:

Send inquiry to phd@ktu.lt
Registration deadline: 4 February 2019

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