



SZENT ISTVÁN UNIVERSITY GÖDÖLLŐ

Department of Physics and Process Control

B P S

BioPhys Spring 2015

14<sup>th</sup> International Workshop  
for Young Scientists

PROGRAM

May 27-29, 2015

Gödöllő, Hungary

Session 4

Chairman: Prof. Z. Hlavacova

- 10.10-10.30 M. Valach, V. Vozarová, M. Božiková and L. Híreš: Determination of biofuels impurities by particle size analyzer
- 10.30-10.40 Z. Kapros: Predictive modeling for low power photovoltaic systems
- 10.40-10.50 H. Zsiborács, G. Pintér, B. Pályi and B. Cseke: Economic questions of the vanadium redox flow battery and the lithium battery energy storage systems in household size
- 10.50-11.00 K. Jaromin-Gleń, W. Stelmach, P. Szarlip, A. Trembaczowski and A. Bieganski: The Isotope Ratio Mass Spectrometry (IRMS) methods in the wastewater treatment plant in Lublin
- 11.00-11.10 A. Sיעińska and A. Nosalewicz: Plant drought memory as potential tool for improving drought tolerance
- 11.10-11.20 N. Žemličková and P. Šařec: Soil compaction assessment using Cone Index
- 11.20-11.40 COFFEE BREAK

Session 5

Chairman: Prof. I. Farkas

- 11.40-11.50 Cs. Mészáros, K. Gottschalk, I. Farkas, A. Földi and Á. Bálint: Novel-type solutions of the convection - anomalous diffusion transport equation
- 11.50-12.00 M. Ali Al-Neama and I. Farkas: Performance enhancement of solar air collectors
- 12.00-12.10 S. Bartha and N. Antal: Sustainable bioenergy production in hybrid solar - biomass - thermal systems
- 12.10-12.20 N. Simon, K. Pásztor-Huszár, T. Kaszab and J. Felföldi: Texture analysis of semi-hard cheese types by different non-destructive and destructive methods during ripening
- 12.20-12.30 D. Rusirawan, N. I. Muhlis and I. Farkas: Characterization of photovoltaic system
- 12.30-12.50 I. Seres, P. Víg and I. R. Nikolényi: Biophysical experiments with materials under extreme conditions
- 12.50-13.45 LUNCH
- 13.45-14.00 CLOSING



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Department of Physics and Process Control, Szent István University

## Program

### May 27 (Wednesday), Department of Physics and Process Control

17.00-18.00 Registration  
18.00-20.00 Welcome reception

### May 28 (Thursday), Knowledge Transfer Centre (TK 222)

08.30-08.50 Opening the Workshop by:  
Prof. I. Farkas Director of Institute  
Institute for Environmental Engineering  
Szent István University, Gödöllő, Hungary  
Prof. I. Szabó Dean of Faculty  
Faculty of Mechanical Engineering  
Szent István University, Gödöllő, Hungary

#### Session 1

Chairman: Prof. V. Vozarova

08.50-09.10 J. Horabik, R. Kobyłka and M. Molenda: DEM modeling of development of rarefaction wave in vertical column of granular solids  
09.10-09.20 P. Baranowski: The use of meteorological time series to assess climate impact  
09.20-09.30 J. Chyba and M. Kroulík: Influence of agricultural machinery passes on soil properties  
09.30-09.40 A. Kabutey, D. Herak, E. Wisdom Boatari and R. Sigalingging: Optimization of small-scale processing of palm kernel oil - the state of affairs in Ghana  
09.40-09.50 A. Polcar, V. Kumbár and J. Votava: Evaluation of biophysical data by multi-dimensional regression analysis  
09.50-10.00 A. Siedliska and P. Baranowski: Supervised classification of cultivars and pits in cherries based on hyperspectral imaging data  
10.00-10.30 COFFEE BREAK

#### Session 2

Chairman: Prof. J. Horabik

10.30-10.50 I. Farkas: New approaches in solar photovoltaic technologies and applications  
10.50-11.00 P. Hlavác and M. Božíková: Temperature dependencies of Beer Pilsner Urquell® dynamic viscosity and thermal conductivity  
11.00-11.10 J. Csillag, L. Hires, V. Vozárová, A. Petrovič and M. Valach: Measurement of viscosity of biologically degradable oils  
11.10-11.20 J. Mierczyńska, J. Cybulska and A. Zdunek: Modification of rheological properties of polysaccharide food matrix made of apple pomace by divalent metal ions  
11.20-11.30 V. Kumbár, P. Křupka, J. Buchar and Š. Nedomová: Rheological behaviour of natural hydrocolloid solutions  
11.30-11.40 B. Gackiewicz, K. Lamorski and C. Sławiński: Modeling of saturated hydraulic conductivity coefficient based on x-ray computer tomography imaging  
11.40-11.50 J. Tóth and J. Buzás: Development of a data logging, monitoring and control software in connection with a database server  
12.15-22.00 LUNCH, VISITING MÁTRA POWER PLANT CULTURAL PROGRAM AND DINNER

### May 29 (Friday), Knowledge Transfer Centre (TK 222)

#### Session 3

Chairman: Prof. M. Libra

08.30-08.50 Z. Hlaváčová, Á. Kertész, L. Staroňová, T. Regrut and A. Wollner: Electrical properties and drying characteristics  
08.50-09.00 A. Petrovič, V. Vozárová, J. Šmítalová, J. Csillag and L. Hires: Freezing and defrosting of dough investigation by DSC method  
09.00-09.10 J. Panek and M. Frąc: Evaluation and optimization of DNA extraction procedures for *Talaromyces flavus*  
09.10-09.20 M. Cybulak, P. Boguta and Z. Sokołowska: The effect of addition of biochar on soil total carbon content  
09.20-09.30 L. Kubik: Properties of apples at compression  
09.30-09.40 M. Chylińska, M. Szymańska-Chargot and A. Zdunek: Raman image analysis in the identification of biopolymers in plant cell wall  
09.40-10.10 COFFEE BREAK