23rd INTERNATIONAL SYMPOSIUM
Control of Power Plants, Industrial and Ecological Systems
May 14-15, 2015 Hotel Bankya Palace, Bankya, Bulgaria

Technology Transfer Seminar on
Advanced Computing for Innovation
Industrial Applications

SCIENTIFIC PROGRAMME

May 14, 2015
12.30-14.00 Registration
14.00-14.10 Opening Session: V.Sgurev
14.10-14.40 Plenary Lecture  Low-cost automation – Opportunities and Prospects
M.Hadjiski

14.40-16.00 Session A1. Modeling and Management of Power Objects and Systems
Chair: K.Boshnakov
Model-Based Control of the Wood Thermal Treatment Process
M.Hadjiski, N.Deliysky
Analysis of Parameters of Thermoelectric Generators for Geothermal Water Sources
I.Bozev, F.Filipov
Modeling of the Energy Consumption for Unilaterally Heating of Wood Details Before Their Bending
N.Deliysky
Information System for Achieving Energy Savings
A.Buchvarov

16.00-16.40 Session A2. Companies’ Presentations
Chair: T.Penzov
System for Control, Management, Protection and Inflammatory Gas-Fuel Oil System of Power Unit 7 of Thermal Plant “Maritsa Iztok 2”
S.Petrov – Honeywell
The e’ Principle – A New Generation of Industrial Air-Conditioning Systems (Rittal – The System)
Y.Panayotov – Rittal

16.40-17.00 Coffee-Break
17.00-18.00 **Session A3. Automation of Technological Processes**  
Chair: E.Nikolov  
Sensors and Systems for Measuring of Indirect Parameters at Technological Process Automation  
D.Marinov, T.Penzov  
Modeling and Optimization of Processes of Anaerobic Digestion of Organic Wastes with Production of Hydrogen and Methane  
I.Simeonov, D.Denchev, V.Hubenov, E.Chorukova  
Improvement of the Environmental Features and Reduction of the Energy Costs of the Bus Transport through the Use of Electric Traction Engines  
Galin Bankov, Ivan Milenov

17.00-18.00 **Session TT1. Technology Transfer Seminar on Advanced Computing for Innovation-Industrial Applications**  
Chair: D.Karastoyanov  
Mapping of Acoustic Noise and Microwave Radiation  
Volodymyr Kudriashov  
Acoustic Fields Reconstruction  
Yuriy Chyrka  
Research of Moving and Interaction between Spheroidal Tetrahedrons in Ball Mills  
Nikolay Stoymenov  
High-Speed Briquetting of Metal Waste using Rocket Engine  
Stanislav Gyoshev  
Inspection and Observation using Infrared Thermal Camera by Service Mobile Robots  
Denis Chikurtev

18.00-19.00 **Discussion:** The Place of Automation in Modern Innovation Process  
Chair: I.Shishkov

19:30 **Symposium Dinner**

**May 15, 2015**

9.00-10.40 **Session B1. Theoretical Problems of Management and Optimization of Industrial Objects and Systems**  
Chair: M.Hadjiski  
Analysis of Filtration Features of Repetitive Management Systems – Parts I, II  
N.Nikolova, E.Nikolov  
Software Tool for Design of Explicit Model-Predictive Controllers Based on Orthogonal Partition of the Parameter Space  
A.Gruncharova  
Avoiding Local Optimums in Distributed Population-Based Heuristic Algorithms  
T.Balabanov  
Statistical Models Optimization Based on Differential Evolution and Monte Carlo – Evaluated Cost Function  
T.Balabanov, I.Zankinsky, B.Shumanov

10.40-11.00 **Coffee-Break**
11.00-12.40 Session B2. Information Technologies to Improve Energy Efficiency
Chair: I.Bachkova
Measures to Improve the Efficiency of Energy Management Systems
P.Kessova, I.Bachkova
Ontology-Based Approach to Decision-Making in Manufacturing Operation Management Systems
D.Gocheva, D.Georgiev, I.Bachkova
Energy-Efficient Control System of Conveyor Belt at Broadband Grinding Machine
J.Belev, I.Bachkova, G.Popov
Monitoring and Management of Urban Road Traffic
V.Ivanov, P.Stoyanov
Automatic Control of Switching the Power Supply in Microgrid
V.Stoyanov

11.00-12.40 Session TT2. Technology Transfer Seminar on Advanced Computing for Innovation-Industrial Applications
Chair: L.Doukovska
Determination of Particle Size Distribution and Analysis of a Natural Food Supplement with Prophylactic Action
Iliana Nacheva, Maria Doneva, Yancho Todorov
Determination of Particle Size Distribution and Analysis of a Healthy Functional Food
Svetla Dyankova, Petya Metodieva, Margarita Terzyiska
Industrial Transport Optimization through Multigraphs
Stanislav Drangajov, Vassil Sgurev
Inference Control System for the Flame Position in the Combustion Chamber of a Power Plant System
Stefan Koynov, Mincho Hadjiski
Robust Stability Analysis of Perturbed Single Area Power System Model
Svetoslav Savov, Ivan Popchev

12.40 Closing Session