



Advanced Control and Optimization:  
Step Ahead | May 8–10, 2014, Bankya, Bulgaria

**Institute of Information and Communication Technologies  
Bulgarian Academy of Sciences**

**International Workshop on  
“Advanced Control and Optimisation: Step Ahead” – ACOSA**  
(supported by FP7 grant AComIn № 316087)  
**8-10 May 2014, Hotel “Bankya Palace”**

**SCIENTIFIC PROGRAMME**

**8 May 2014**

**11:00–11:10** Opening Session of the International Workshop on “Advanced Control and Optimisation: Step Ahead” – **Vassil Sgurev**

**11:10–11:30** Presentation of the FP7 Project “AComIn (Advanced Computing in Innovation)” – **Galia Angelova**

**11.30–13.30** **Session A. Contemporary Methods for Assessment and Control of Complex Systems**

Chair of Session: **Lyubka Doukovska**

- **Ivan Popchev, Vera Angelova** – *Improved residual bound of the matrix equations*
- **Irina Radeva** – *Synergy in clusters: Approaches to evaluation*
- **Velitchko Djambov** – *Finding the roots of non-linear equations with high definition using the .NET Framework C# and X-MPIR*
- **Margarita Terziyska, Lyubka Doukovska** – *Semi fuzzy neural networks, Part 1: Nonlinear system identification*
- **Margarita Terziyska, Lyubka Doukovska** – *Semi fuzzy neural networks, Part 2: Predictive control*

**15:00–17:00 Session B. Discussion on the Benefits of Applying of Advanced Control and Optimisation**

Chair of Session: **Janusz Kacprzyk**

**9 May 2014**

**09:00–09:30** Presentation of the Hydraulics and Pneumatics Research Institute (INOE 2000-IHP), Romania – **Alexandru Valentin Radulescu, Catalin Dumitrescu, Julian Dutu**

**11:00–13:30 Session C. Discussion on the Implementation of Advanced Control Concepts and Technologies in Small and Medium-sized Enterprises**

Chair of Session: **Ivan Popchev**

**15:00–17:30 Session D. Application Aspects of the Analysis of the Contemporary Methods for Assessment, Control and Optimisation of Complex Processes**

Chair of Session: **Vladimir Monov**

- **Svetoslav Savov, Ivan Popchev** – *Solution estimates for the discrete time parameter dependent Lyapunov equation*
- **Vassil Sgurev, Stanislav Drangajov** – *A Probabilistic approach to optimizing the path of monitoring the nodes of a network*
- **Tatiana Atanasova, Janko Atanasov** – *Integrated information system for enterprise management*
- **Kiril Kolchakov, Vladimir Monov** – *Examination of an algorithm for non-conflict schedule with diagonal activation of joint sub matrices in a large scale switching matrix*
- **Tasho Tashev, Vladimir Monov** – *Load optimization in a grid structure for parallel computer simulations of the throughput of a crossbar switch node*

**10 May 2014**

**11:00–13:30 Session E. Applications of the contemporary optimization procedures in the financial and industrial structures**

Chair of Session: **Dimitar Karastoyanov**

- **George Shahpazov** – *Optimisation procedures in SMEs financial mechanism*
- **Vasil Nikov** – *Significance of the advanced control and optimisation for SMEs*
- **Veselin Shahpazov** – *Forecasting financial markets with artificial intelligence*
- **Mincho Hadjiski, Kosta Boshnakov, Stefan Koynov** – *Control of milling fan load on the base of residual useful life prediction*
- **Chavdar Korsemov, Hristo Toshev** – *Analysis and exploitation of wind generators*

**13:30 Closing Session**