



ТЕХНИЧЕСКИ УНИВЕРСИТЕТ-СОФИЯ
ФАКУЛТЕТ АВТОМАТИКА

МЕЖДУНАРОДНА КОНФЕРЕНЦИЯ АВТОМАТИКА'2018, ФА
ФАКУЛТЕТ АВТОМАТИКА
01 - 03 юни 2018 г., Созопол, България

ПРОГРАМА



TECHNICAL UNIVERSITY OF SOFIA
FACULTY OF AUTOMATICS

INTERNATIONAL CONFERENCE AUTOMATICS'2018, FA
June 01 - 03, 2018, Sozopol, Bulgaria

PROGRAM

ПРОГРАМЕН КОМИТЕТ

| | | |
|----------------------------|-----------|------|
| <i>почетен председател</i> | | |
| Емил | Николов | (BG) |
| <i>Председател</i> | | |
| Нина | Николова | (BG) |
| <i>Членове</i> | | |
| Петко | Петков | (BG) |
| Тодор | Йонков | (BG) |
| Снежана | Йорданова | (BG) |
| Валери | Младенов | (BG) |
| Емил | Гарипов | (BG) |
| Пламен | Цветков | (BG) |
| Живко | Георгиев | (BG) |
| Михо | Михов | (BG) |
| Васил | Гълъбов | (BG) |
| Хасан | Абуайса | (FR) |
| Даниел | Жоли | (FR) |
| Жил | Гонкалвес | (FR) |
| Николай | Христов | (FR) |
| Стефан | Козак | (SK) |
| Алена | Козакова | (SK) |
| Снежана | Терзиева | (BG) |
| Теофана | Пулева | (BG) |

PROGRAM COMMITTEE

| | | |
|------------------------------|-----------|------|
| <i>honorable chair of PC</i> | | |
| Emil | Nikolov | (BG) |
| <i>chair of PC</i> | | |
| Nina | Nikolova | (BG) |
| <i>members of PC</i> | | |
| Petko | Petkov | (BG) |
| Todor | Ionkov | (BG) |
| Snejana | Yordanova | (BG) |
| Valeri | Mladenov | (BG) |
| Emil | Garipov | (BG) |
| Plamen | Tzvetkov | (BG) |
| Jivko | Georgiev | (BG) |
| Mikho | Mikhov | (BG) |
| Vasil | Galabov | (BG) |
| Hassane | Abouaïssa | (FR) |
| Daniel | Jolly | (FR) |
| Gilles | Gonçalves | (FR) |
| Nicolai | Christov | (FR) |
| Stefan | Kozak | (SK) |
| Alena | Kozáková | (SK) |
| Snejana | Terzieva | (BG) |
| Teofana | Puleva | (BG) |

ОРГАНИЗАЦИОНЕН КОМИТЕТ

| | |
|-------------------------|-----------|
| <i>Председател</i> | |
| Владислав | Славов |
| <i>зам. Председател</i> | |
| Антония | Панделова |
| <i>Членове</i> | |
| Владимир | Христов |
| Станислав | Енев |

ORGANIZING COMMITTEE

| | |
|-------------------------|-----------|
| <i>chair of OC</i> | |
| Vladislav | Slavov |
| <i>vice chair of OS</i> | |
| Antonia | Pandelova |
| <i>members of OC</i> | |
| Vladimir | Hristov |
| Stanislav | Enev |

ТЕХНИЧЕСКИ КОМИТЕТ

| | |
|-----------------------------------|-----------|
| <i>Координатор</i> | |
| Антония | Панделова |
| <i>системен администратор</i> | |
| Александър | Маринчев |
| <i>организационен секретариат</i> | |
| Мая | Стойчева |

TECHNICAL COMMITTEE

| | |
|-------------------------------|-----------|
| <i>coordinator</i> | |
| Antonia | Pandelova |
| <i>system administrator</i> | |
| Alexandar | Marinchev |
| <i>organizing secretariat</i> | |
| Maya | Stoycheva |

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Sofia, 1000, boul. Kliment Ohridski 8
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| CONFERENCE SCHEDULE | | |
|----------------------------|---|--------|
| | | |
| | <i>Friday, June 01, 2018</i> | |
| 12:00-14:00 | CONFERENCE REGISTRATION | |
| 14:00-14:15 | WELCOME AND OPENING CEREMONY | Hall A |
| 14:15-15:45 | PLENARY SESSION | Hall A |
| 15:45-16:15 | COFFEE BREAK | |
| 16:15-18:15 | SESSION 1: A) Electrical Drives and Machines Automation + Robotics B) Theoretical Electrical Engineering engineering | Hall A |
| | | |
| | <i>Saturday, June 02, 2018</i> | |
| 09:00-11:00 | SESSION 2: Control Systems Engineering | Hall A |
| 11:00-11:30 | COFFEE BREAK | |
| 11:30-13:00 | SESSION 3: Control Systems Engineering | Hall A |
| 13:00-14:00 | LUNCH AND FREE TIME | |
| 14:00-16:15 | SESSION 4: A) Industrial Engineering and Automation | Hall A |
| 16:15-16:35 | COFFEE BREAK | |
| 16:35-18:00 | SESSION 5: A) Industrial Engineering and Automation B) Bioelectrical Engineering | Hall A |
| 18:00 –18:15 | Closing ceremony | Hall A |
| 19:45 –23:00 | OFFICIAL DINNER | |
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| | <i>Sunday, June 03, 2018</i> | |
| Till 11:00 | DEPARTURE | |
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CONFERENCE SCHEDULE

Friday, June 13th

12:00 – 14:00 Conference Registration

14:00 – 14:15 WELCOME AND OPENING CEREMONY

Place: Hall A

14:15 – 15:45 PLENARY SESSION

Place: Hall A

Chairman: Assoc prof. N. Nikolova, PhD

Speaker: Prof. Petko Petkov, DSc

DESIGN OF ROBUST EMBEDDED SYSTEMS WITH MATLAB® AND Simulink®

Authors: Prof. Petko Petkov, Assoc. prof. Tsonyo Slavov, Assist. Prof. Jordan Kralev

Speaker: Prof. Emil Nikolov, DSc

FRSCTIONAL GSC Author: Prof. Emil Nikolov

16.15 – 18.15 SESSION 1

“A) Electrical Drives and Machines Automation + Robotics B) Theoretical Electrical Engineering engineering”

Place: Hall A

Chairman: Prof. Todor Yonkov, PhD

Roman Voliansky, Nina Volianska, Alexander Sadovoi, Yuliia Sokhina

Sliding mode control for DC electric drive

Kamen Hristov

VELOCITY CONTROL OF PERMANENT MAGNET SYNCHRONOUS MACHINES

Hristo Stoyanov, Docho Tsankov, Todor Ionkov

MANAGEMENT OF A VENTILATION SYSTEM WITH MINIMAL CONCENTRATION OF CO IN GUARANTEE AREAS WITH AIR DUCT RESISTANCE BALANCE IN REAL TIME

Vladimir Hristov, Marin Zhilevski

EXTENSION OF PROGRAMMING POSSIBILITIES FOR PROGRAMMABLE LOGICAL DEVICES THROUGH MATLAB

Nikola Cenov, Ivan Avramov, Georgi Aleksandrov

NEW CONCEPTUAL VERSION OF SPECIALIZED MOBILE ROBOT FOR THE FORCED RELOCATION OF AUTOMOBILES

Atanas Chervenkov, Atanas Yanev, Todorka Cherevnikova

Modelling and Analysis of Hybrid Power Station

Simona Petrakieva

TRANSIENT AND STEADY STATES ANALYSIS IN LINEAR ELECTRICAL CIRCUITS USING DUHAMEL'S INTEGRAL WHEN THE ENERGY SOURCES ARE WITH ARBITRARY FORM

Saturday, June 2nd

09.00 - 11.00 SESSION 2 A) “Control Systems Engineering”

Place: Hall A

Chairman: Assoc. prof. Teofana Puleva, PhD

Georgi Ruzhekov, Bozhidar Rakov

Experimental Control System for Laboratory Bench “Multi Input and Multi Output (MIMO) Control System”

Bozhidar Rakov

Independent design of PID control for three dimensional object

Alexander Hotmar

Some Regularities on the FOREX Market with an Application for Auto Trading Robots

Vesselin Kanchev, Tsonyo Slavov, Jordan Kralev

Embedded Control of Water Level in Tank Physical Model

Mihail Hristov

Adaptive Control and Implementation for the Quadruple Tank System

Tsonyo Slavov, Veselin Kanchev, Emil Garipov

CONTROL OF TIME VARYING PLANTS IN MATLAB/SIMULINK

Jordan Kralev, Sherif Sherif

Embedded system for angular rate control on brushless motor with Arduino® controller

11:00-11:30 COFFEE BREAK

11:30 – 13:00 SESSION 3: Control Systems Engineering

Chairman: Prof. Emil Garipov, PhD

Radmila Gerov, Zoran Jovanović

Improvement of Padé Method for Order Reduction of the High Order System Model

Alexander Mitov, Tsonyo Slavov, Jordan Kralev, Ilcho Angelov

MULTIVARIABLE QUADRATIC COST CONTROL OF ELECTROHYDRAULIC STEERING SYSTEM

Teofana Puleva, Tsonyo Slavov

LQG/LTR Power Control of Wind Generator

Kamen Perev

State impulse response computation for linear time varying systems

Vesselin Gueorguiev, Ivan Evg. Ivanov, Borislav Ivanov

Embedded Control of Water Level in Tank Physical Model

13:00 -14:00 LUNCH AND FREE TIME

Saturday, June 2nd

14:00 – 16:15 SESSION 4 “Industrial Engineering and Automation”

Place: Hall A

Chairman: Assoc. prof. Vasil Galabov, PhD

Kiril Borisov, Desislava Stoitseva-Delicheva

PLANNING ENGINEERING-PSYCHOLOGICAL RESEARCH USING AUTOMATIC DATA PROCESSING SYSTEM

Kiril Borisov, Desislava Stoitseva-Delicheva

DESIGN OF AUTOMATIC DATA PROCESSING SYSTEM FOR ENGINEERING-PSYCHOLOGICAL RESEARCH PART 1

Martin Marinov

Automated text preprocessing for text analysis

Stanislav Enev

Improved algorithm for generating motion profiles for PLC-based positioning applications

Iordanka Dountcheva

Fractal properties of time series: comparative analysis of different Hurst exponent estimation methods

Alexander Marinchev

BUILDING A LOW-COST TRAINING-RESEARCH PLATFORM FOR MOBILE COMMUNICATION

**16:35 – 18:00 SESSION 5: A) Industrial Engineering and Automation
B) Bioelectrical Engineering**

Place: Hall A

Chairman: Assoc. Prof. Stanislav Enev, PhD

Boris Grasiani, Nina Nikolova

DISCRETIZATION OF ABSORBERS OF COMPLETE ORDER

Alexander Pantelev, Vessela Karlova-Sergieva

ROBUST CONTROLLER DESIGN USING QUANTITATIVE FEEDBACK THEORY (QFT)

Yordan Karacheviev

MODELING TIME OF COAGULATION ON COWS MILK BY USING EFFECTS OF DIFFERENT CONCENTRATION OF ENZYMES

Vassil Galabov, Nikola Serafimov

AN ALTERNATIVE BIOCATALYST-BASED METHOD FOR ELECTRICAL ENERGY CONSERVATION

Vassil Galabov, Boris Kirov

An alternative biocatalyst-based method for electrical energy conservation

18:00- 18:15 CLOSING CEREMONY, Place: Hall A

**19:45 – 23:00 – OFFICIAL DINNER, Venue: Restaurant “The wind mill”, Morski Skali st. 27A
[GOOGLE MAPS LINK](#)**