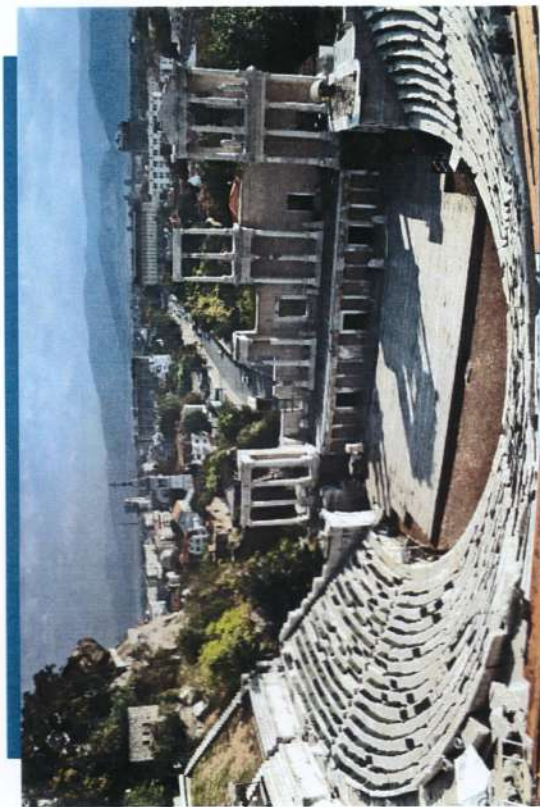


**TECHNICAL UNIVERSITY OF SOFIA
PLOVDIV BRANCH**



Science Days of Technical University of Sofia

PROGRAM



**8-th INTERNATIONAL SCIENTIFIC CONFERENCE
"ENGINEERING, TECHNOLOGIES AND SYSTEMS"
TECHSYS 2019**

16-18 May, Plovdiv, Bulgaria

**TECHNICAL UNIVERSITY OF SOFIA
PLOVDIV BRANCH**



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TECHNICAL UNIVERSITY OF SOFIA, PLOVDIV BRANCH

8-th INTERNATIONAL SCIENTIFIC CONFERENCE "ENGINEERING, TECHNOLOGIES AND SYSTEMS" TECHSYS 2019

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TIME SCHEDULE

16 MAY 2019 17 MAY 2019	Registration from 09:00 till 16:00 Registration from 09:00 till 11:00 The conference will be held at Technical University of Sofia, Plovdiv Branch 25, Tsanko Dyustabanov Street, Plovdiv 4000, Bulgaria													
16 MAY 2019	<p>TECHSYS 2019 Opening Ceremony - AULA</p> <p>14:00-14:30 h</p>													
	Plenary Session - AULA													
	Coffee Break Hall 4115													
	<table border="1"> <tr> <td>15:30-16:00 h</td> <td>Section 1 Hall 4326</td> <td>Section 2 Hall 4328</td> <td>Section 3 Hall 4422</td> </tr> <tr> <td>16:00-18:00 h</td> <td>Section 4 Hall 4425</td> <td>Section 5 Hall 4327</td> <td>Section 6 Hall 4325</td> </tr> <tr> <td></td> <td colspan="3">Section 7 Hall 4430</td> </tr> </table>	15:30-16:00 h	Section 1 Hall 4326	Section 2 Hall 4328	Section 3 Hall 4422	16:00-18:00 h	Section 4 Hall 4425	Section 5 Hall 4327	Section 6 Hall 4325		Section 7 Hall 4430			
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16:00-18:00 h	Section 4 Hall 4425	Section 5 Hall 4327	Section 6 Hall 4325											
	Section 7 Hall 4430													
	19:00-22:00 h	Conference Dinner at Novotel Plovdiv												
17 MAY 2019	09:30-13:00 h	<table border="1"> <tr> <td>Section 1 Hall 4326</td> <td>Section 2 Hall 4328</td> <td>Section 3 Hall 4422</td> </tr> <tr> <td>Section 4 Hall 4425</td> <td>Section 5 Hall 4327</td> <td>Section 6 Hall 4325</td> </tr> <tr> <td>Section 7 Hall 4430</td> <td colspan="2">Poster Session After oral presentations in corresponding sections</td> </tr> <tr> <td colspan="3">Lunch Hall 4115</td> </tr> </table>	Section 1 Hall 4326	Section 2 Hall 4328	Section 3 Hall 4422	Section 4 Hall 4425	Section 5 Hall 4327	Section 6 Hall 4325	Section 7 Hall 4430	Poster Session After oral presentations in corresponding sections		Lunch Hall 4115		
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Section 7 Hall 4430	Poster Session After oral presentations in corresponding sections													
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	13:00-14:00 h													

TECHSYS 2019 Sections

- SECTION 1 - Automation, Control Systems and Robotics
- SECTION 2 - Electrical Engineering and Electronics
- SECTION 3 - Computer Engineering, Informatics and Communications
- SECTION 4 - Mechanical Engineering
- SECTION 5 - Automotive and Aeronautical Engineering
- SECTION 6 - Industrial Management and Design
- SECTION 7 - Mathematics, Physics and Chemistry

8-th INTERNATIONAL SCIENTIFIC CONFERENCE "ENGINEERING, TECHNOLOGIES AND SYSTEMS" TECHSYS 2019

OPENING CEREMONY ACTIVITIES

16 MAY 2019
15:00 - 16:30 h

I. Opening of 8-th International Conference "Engineering, Technologies and Systems" - TechSys 2019

The conference will be held within the framework of the *Science Days of Technical University of Sofia* under the patronage of *Cor. Mem. Prof. D.Sc. Eng. Georgi Mihov - Rector of the Technical University of Sofia*.

II. Plenary Session

Chair: Prof. Eng. Michail Petrov, PhD

Digital Twin and AAS in the Industry 4.0 Framework

Prof. Eng. Zdenek Bradac, PhD

Prof. Eng. Frantisek Zezulka, PhD

Faculty of Electrical Engineering and Communication, Department of Control and Instrumentation, Brno University of Technology, Brno, Czech Republic

The lecture goes out from the state of the art in the area of Industry 4.0 initiative of the most developed countries. There are also discussed reasons of Industry 4.0 development and implementation into existing still developed technologies. According to the last development, the term digital twin became a very often-used word. Author explain differences in the content of the digital twin and recommend to use for the Industry 4.0 area the more appropriate and precise specified term – the Asset Administration Shell (AAS). Next parts of the lecture therefore deal with the Asset Administration Shell (AAS) in details to enable engineers, technicians and informatics from the praxis much more simple introduction in the Industry 4.0 problems and their solution. There is introduced and explained the structure of the AAS, the model and sub-models architecture, parameters and features.

SECTION 6	INDUSTRIAL MANAGEMENT AND DESIGN Hall 4325 Chair: Toni Mihova Co-Chair: Desislava Shatarova
	<p>Some Challenges to the Integrated Urban Development of Varna <i>Kremena Andonova, Ivanka Bankova</i></p> <p>Researching the factor structure and identification of the main factors in sport orienteering <i>Daniel Vladimirov</i></p> <p>Development of QFD methodology <i>Y. Klochkov, A. Gazizulina, M. Ostapenko</i></p> <p>Data Management for Solving the Problem of Sequential Shaping Simulation <i>V. Mikheev, A. Grechnikova, D. Agafonova, Y. Klochkov</i></p> <p>Filling a Knowledge Base for Expert System in Information Security <i>N. Kireeva, I. Pozdnyak, A. Gazizulina</i></p> <p>Analytical model of the Interrelation between Enterprise's Activity and its Financial Stability <i>A. Sokolitsyn, M. Ivanov, N. Sokolitsyna and I. Babkin</i></p> <p>Functional hybrid decision-making system for difficult formalized productive and economic problems <i>S. Korjagin, A. Babkin and P. Klachek</i></p> <p>The control model of safety management systems <i>V. G. Burlov, O. M. Lepeshkin, M. O. Lepeshkin and F. A. Gomazov</i></p> <p>Factors of economic efficiency of innovative entrepreneurship in the manufacturing industry <i>A. Alekseev, K. Khlebnikov, E. Fomin, N. Fomina, A. Salkina, E. Konnikov</i></p>

SECTION 7	MATHEMATICS, PHYSICS AND CHEMISTRY Hall 4430 Chair: V. Proycheva
16 MAY 2019 16:00 - 18:00	<p>Structure of a semisimple dihedral group algebra <i>I. Gradeva and Y. Epitropov</i></p> <p>Variational principle for a class of nonlocal boundary value problems for mixed type higher-order equations <i>G. P. Paskalev</i></p> <p>Microscopic and surface analyses of corroded Mg alloys <i>Y. Marcheva, M. Loukoycheva, B. Dimova, Y. Tsonev and N. Kuzmanov</i></p> <p>Green inhibitor of corrosion of aluminium alloy EN AW-2011 in acidic environment <i>Kalina Kamarska</i></p> <p>Investigation of the effect of porosity on the particle deposition efficiency in the model of an open cell foam filter <i>Olga V. Soloveva, Rishat R. Khusainov, Evgeniy G. Sheshukov, Diana O. Panenko</i></p> <p>Numerical simulation of the isoparaffins dehydrogenation in a bidisperse fluidized bed <i>Sergei A. Solovov, Ruzil R. Yafizov and Alexey V. Antipin</i></p> <p>Numerical investigation of the granule size effect on the reaction product yield in a catalyst fixed bed <i>Sergei A. Solovov, Rishat R. Khusainov, and Dilyara R. Nasretidinova</i></p> <p>Effect of temperature on the copigmentation interaction between aronia anthocyanins and sinapic acid with different methods <i>I. Petrova, V. Gandova</i></p> <p>Registration with the FET sensor of the electric change in the atmosphere <i>Metin Saltik, Mustafa Denktas, M. Server Firat</i></p>
17 MAY 2019 9:30 - 13:00	<p>Numerical simulation of the isoparaffins dehydrogenation in a bidisperse fluidized bed <i>Sergei A. Solovov, Ruzil R. Yafizov and Alexey V. Antipin</i></p>
Coffee break 11:00 - 11:30	