

TECHNICAL UNIVERSITY OF GABROVO



**INTERNATIONAL
SCIENTIFIC CONFERENCE**

**UNITECH 2018
GABROVO**

P R O G R A M

**16 - 17 NOVEMBER 2018
GABROVO**

International Scientific Conference "UNITECH 2018" – Gabrovo

International Scientific Conference UNITECH'18 is organized by the Technical University of Gabrovo with the assistance of regional business establishments and companies. The conference is a forum at which traditionally every year at the end of November lecturers and research workers from home and abroad meet to promote the Development of Science and Education.

ORGANIZING COMMITTEE

Chairman: Assoc. Prof. Iliya Zhelezarov, Ph.D.
Vice Rector in charge of Research and Development

Members: Prof. Jordan Maximov, D.Sc.
Prof. Anatoliy Aleksandrov, Ph.D.
Prof. Stoyan Kapralov, Dr. Sc.

Technical Assistant:
Petya Peneva, MA

PROGRAM COMMITTEE

Chairman: Prof. Raycho Ilarionov, D.Sc.
Technical University of Gabrovo, Bulgaria

Members:
Acad. Chavdar Rumenin, Bulgaria
Acad. Dragoljub Mirjanić, Rep. Srpska, B&H
Acad. Peter Kralchevski, Bulgaria
Acad. Tomislav Pavlović, Rep. Srpska
Corr. Mem. Dimitar Dimitrov, Bulgaria
Corr. Mem. Prof. Tony Spassov, Bulgaria
Prof. D.H.C. Yuriyi Kuznetsov, Dr. Sc., Ukraine
Prof. D.H.C. Nikolay Ganev, Ph.D., Czech Republic
Prof. Lothar Otto, Germany
Prof. Emil Kolev, Ph.D., Germany
Prof. Dr. phil. Ludwig Hilmer, Germany
Prof. Elena Kovalenko, Pd.D., Ukraine
Prof. Iurii Iaremchuk, Dr.Sc., Ukraine
Prof. Mihail Prokofiev Ph.D., Ukraine
Prof. Igor Sazonov, Dr. Sc., Belarus
Prof. Rumen Daskalov, Dr. Sc., Bulgaria
Prof. Vasil Kavardjikov, Dr. Sc., Bulgaria

***UNITECH'18 will be held on 16 and 17 November 2018
at the Technical University of Gabrovo***

WORKING PROGRAM OF THE SCIENTIFIC CONFERENCE

15th November 2018, Thursday

14.00 – 17.00 h Registration, Rectorat building

16th November 2018, Friday

08.00 – 10.30 h Registration, Rectorat building

10.30 – 11.00 h Opening ceremony – Library building, Conference hall

11.00 – 12.00 h "*From foamed suspensions to functional porous materials*"
- Corr. Mem. Prof. Nikolay Denkov, D.Sc. Faculty of Chemistry
and Pharmacy Sofia University "St. Kliment Ohridski"

12.00 – 13.00 h Lunch

13.00 – 18.00 h Thematic sessions

- Electrical Engineering
- Electronics and Sensors
- Automation
- Chemistry and Ecology
- Communication Engineering and Technologies
- Computer Systems
- Computer Technologies
- Information Security
- Mathematics and Informatics
- Design of Machines and Instruments
- Technologies in Mechanical Engineering
- Technologies in Textile Production
- Mechatronics, Metrology and Quality Management
- Hydraulics, Pneumatics and Heat Engineering
- Economics and Finance
- Organization and Management
- Social Sciences and Humanities
- Educational Technologies
- Physics

14.00 – 14.30 h Coffee break

15.00 -17.00 h Round table: *Center of Competence "Intelligent Mechatronics, Eco- and Energy-saving Systems and Technologies"*,
Project: BG05M2OP001-1.002-0023-C01, Library building,
Conference hall

19.00 h Formal dinner Restaurant Balkan Hotel

17th November 2018, Saturday

09.00 – 12.00 h Thematic sessions

THEMATIC SESSIONS

ELECTRICAL ENGINEERING

Chairmen: Assoc. Prof. Plamen Tsankov, Ph.D., Assoc. Prof. Svilen Rachev, Ph.D.

Building № 2A, Hall 2603

Beginning: 13.00 h.

Increase generation efficiency of hydrogen by the means of ultrasound field and the mechatronic control system of the operation mode

Oleksandr Luhovskyi, Igor Nochnichenko, Dmytro Kostiuk, Andrii Zilinskyi, Valentin Mironchuk

National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Ukraine

Commercial transactions at freely negotiated prices

Ilyan Iliev

University of Mining and Geology ‘St. Ivan Rilski’, Sofia, Bulgaria

Market unification based on the flow

Ilyan Iliev

University of Mining and Geology ‘St. Ivan Rilski’, Sofia, Bulgaria

Slip compensation of U/F controlled induction machine through educational laboratory setup

Marko Rosić¹, Mihailo Luković¹, Miroslav Bjekić¹, Branko Koprivica¹

¹ University of Kragujevac, Faculty of Technical Sciences Čačak, Serbia

Model-based study of losses in cylindrical shaped inductors

Dragomir Grozdanov¹, Nikolay Hinov¹, Khristo Tarnev²

¹ Department of Power electronics, Technical University of Sofia, 1000 Sofia, Bulgaria

² Department of Applied physics, Technical University of Sofia, 1000 Sofia, Bulgaria

Soiling influence on the short-circuit current of solar module mounted at the optimal angle

Ivana S. Radonjić¹, Tomislav M. Pavlović¹, Dragoljub Lj. Mirjanić², Miodrag K. Radović¹, Galina Sazhko³

¹ University of Nis, Faculty of Sciences and Mathematics, Department of Physics, Višegradska 33, 18 000 Nis, Republic of Serbia

² Academy of Sciences and Arts of the Republic of Srpska, Bana Lazarevića 1, 78 000 Banja Luka, Republic of Srpska

³ Ukrainian Engineering Pedagogics Academy, Department of Informatics and Computer Technologies, Universitetskaya str. 16, Kharkov, Ukraine

Assessment and forecasting of the reliability of the electric power supply systems of industrial sites in low-load mode

Panchev R.K.¹, Iliev I.H.², Georgiev G.A.³, Chikov V.Ch.[°]

¹*Technical University Varna*

²*UMG St.Ivan Rilski*

³*Burgas Free University*

[°]*Technical University Varna*

Study on influence of the quality of the electrical energy on the reliability of the electrical equipment and systems

Panchev R.K.¹, Iliev I.H.², Georgiev G.A.³, Chikov V.Ch.[°]

¹*Technical University Varna*

²*UMG St.Ivan Rilski*

³*Burgas Free University*

[°]*Technical University Varna*

Concerning the extension of the definition area of the electric power category “Electromagnetic Compatibility” and its relation to the reliability of the electric power supply

Iliev I.H.[°], Panchev R.K.¹, Proykov M.A.², Kirov R.M.³

[°]*UMG St.Ivan Rilski*

¹*Technical university Varna*

²*University "Prof. D-r Asen Zlatarov" – Burgas*

³*Technical university Varna*

Impact of electrical switching processes and resonance phenomena on electromagnetic compatibility and reliability of electric power supply

Proykov M.A.¹, Georgiev G.A.², Panchev R.K.³, Gyurov V.N.³

¹*University "Prof. D-r Asen Zlatarov" – Burgas*

²*Burgas Free University*

³*Technical university Varna*

Calibration of torque sensor prototype using commercial torque sensor

Branko Koprivica¹, Marko Sucurovic², Vojislav Vujicic³, Milos Bozic⁴, Marko Rosic⁵

University of Kragujevac, Faculty of Technical Sciences in Cacak

¹*Department of Electrical and Electronic Engineering*

²*Department of Industrial Engineering*

³*Department of Mechanical Engineering*

⁴*Department of Mechatronics*

⁵*Department of Power Engineering*

Determination of the impulse response of a communication channel in the process of information transmission

Galina Cherneva¹, Hristina Spiridonova²

¹*Todor Kableshkov University of Transport*

²*Todor Kableshkov University of Transport*

Compensation of reactive power in enterprises with a highly uneven loading schedule

Kiril Dzhustrov¹, Ivan Stoilov¹

¹University of Mining and Geology is “St. Ivan Rilski”

Investigation the phase transitions of doped barium strontium titanate ceramics obtained by double synthesis

Ivaylo Lazarov

Technical University of Gabrovo

Study of electric and color characteristics of led luminaire with adjustable color temperature

Plamen Tsankov, Milko Yovchev, Plamen Danailov

Technical University of Gabrovo

Prospects for renewable energy in Ukraine

Hovorov Pylyp Paramonovich, Dr. Sc., Hovorov Vladlen Pylypovich, Kindinova Anastasiya Kostyantynivna

O. M. Beketov National University of Urban Economy in Kharkiv

Solar energy in Ukraine

Hovorov Pylyp Paramonovich, Dr. Sc., Hovorov Vladlen Pylypovich, Kindinova Anastasiya Kostyantynivna

O. M. Beketov National University of Urban Economy in Kharkiv

Power plants and their effects in Gorj County

Adriana Foanene, Liviu Marius Cirtina, Constanta Radulescu

University „Constantin Brâncuși” in Tg Jiu, ROMANIA

Parameters of current harmonic components in the industry

Krasimir Marinov Ivanov¹, Georgi Tsonev Velev¹, Panayot Ivanov Yankov¹, Evtim Ruichov Kartselin², Nikolay Stoyanov Minekov²

¹Technical University of Gabrovo, Bulgaria

²University of Mining and Geology “St. Ivan Rislki”, Sofia

Possibilities for diagnosis of asynchronous motors with the use of profile matrix of stator current

Yulian Yordanov, Valentin Gyurov

Technical University of Varna, Department of Electric Power Supply and Electrical Equipment

Influence of industrial luminaries on electromagnetic compatibility parameters

**Tsvyatko Kolev Varbov¹, Krasimir Marinov Ivanov¹, Panayot Yankov Ivanov¹
Mihai Cruceru²**

¹Technical University of Gabrovo, Bulgaria

²University ‘Constantin Brâncuși’ of Târgu-Jiu, Romania

Research and analysis of energy efficiency in passenger ships

Iliyan Donev¹, Ginka Ivanova², Valentin Gyurov³, Rumen Kirov⁴

¹*Technical University of Varna, Department of Shipbuilding and Marine Engineering*

^{2,3,4}*Technical University of Varna, Department of Electric Power Supply and Equipment*

Control system for laboratory dc electrical drive with pulse-width regulation

Vasil Dimitrov¹, Petko Kostadinov¹, Martin Zlatkov¹

¹*Todor Kableshkov University of Transport – Sofia*

Static characteristics of regulated induction electric drive taking into account the steel losses

Dimitar Spirov

University of Food Technologies – Plovdiv

Features in the selection of permanent magnets for small wind turbine systems

Martin Zlatkov, Yavor Isayev, Ivan Milenov

Todor Kableshkov University of Transport – Sofia

ELECTRONICS AND SENSORS TECHNICS

Chairmen: Prof. Anatoliy Aleksandrov, Ph.D., Prof. Nikolay Madzharov, Ph.D.
Building № 2, Hall 2311
Beginning: 13.00 h.

Time and frequency analyzes of a frequency locked loop

Perišić Đurđe¹, Miroslav Bojović², Aleksandar Žorić³, Željko Gavrić¹

¹*Faculty of Information Technology, Slobomir P University, Slobomir, BiH*

²*School of Electrical Engineering, University of Belgrade, Beograd, Serbia*

³*Faculty of Technical Science, K. Mitrovica, Serbia*

Modeling of Grid-Connected Small-Scale Hydrokinetic Generator

Hristiyan Kanchev

*Technical University of Sofia, Faculty of Electronic Engineering and Technologies,
Department of Power Electronics*

Mathematical modeling and controller implementation of a SEPIC converter

Nikolay Hinov, Hristiyan Kanchev, Sabcho Sabev

*Technical University of Sofia, Faculty of Electronic Engineering and Technologies,
Department of Power Electronics*

Modelling of bidirectional DC/DC converter

Gergana Vacheva¹, Nikolay Hinov¹, Hristiyan Kanchev¹, Bogdan Gilev²

¹*Department of Power Electronics, Faculty of Electronic Engineering and Technologies
Technical University of Sofia*

²*Department of Mathematical Analysis and Numerical Methods, Technical University of
Sofia*

Optimizing heat sink thermal resistance in a thermoelectric pump

Ivaylo Belovski¹, Anatoliy Alaksandrov²

¹*Prof. D-r Asen Zlatarov University*

²*Technical University of Gabrovo*

Investigation of multiphase current sources for charging stations

Stoyan Vuchev¹, Dimitar Arnaudov¹

¹*Technical University of Sofia, Bulgaria*

IOT energy meter applicable in smart buildings

Aleksandar Žorić¹, Nikola Žorić¹, Muhamed Bejtović¹

¹*Faculty of technical sciences – University of Priština*

Implementation of node.js technology in a concept based on IOT

Bejtovic Muhamed¹, Aleksandar Žorić¹

¹*Faculty of technical sciences – University of Priština*

Results of the electro-electric hoist model study

Iwaylo Stefanov Genchev

Technical University of Gabrovo

Simulation study of electro-mechanical brake connected to one of the phases of induction electric motor

Anatoliy Trifonov Alexandrov, Iwaylo Stefanov Genchev, Hristo Stefanov Kilifarev

Technical University of Gabrovo

Parallel operation of converters for induction heating

Tsvetozar Hristov¹, Dimitar Arnaudov², Stalmir Denchev²

¹*Woodward Bulgaria EOOD*

²*Technical University of Sofia, Bulgaria*

Investigation of multiphase modular topology for energy storage system

Dimitar Arnaudov¹, Stoyan Vuchev¹

¹*Technical University of Sofia, Bulgaria*

Mathematical modelling of buck ZVS DC-DC converter

Nikolay Hinov¹

¹*Technical University of Sofia, Faculty of Electronic Engineering and Technologies, Power Electronics department*

Model-based design of a parallel operating current source inverter

Dimitar Arnaudov¹

¹*Technical University of Sofia, Bulgaria*

Labview approach in modeling DC-DC converters

Nikolay Hinov¹, Zoran Zlatev¹

¹*Department of Power Electronics, Faculty of Electronic Engineering and Technologies
Technical University of Sofia*

Multisim-based model for unimorph piezoelectric energy harvesters

Constantinos Tramantzas

Technological Educational Institute of Eastern Macedonia and Thrace (TEI EMT)

LLC resonant inverter for transformation of energy received by photovoltaic source

Dimitar Spirov

University of Food Technologies – Plovdiv

Analysis and design of contactless transmission electrical energy and information signals by multiplexing the frequency

Nikolay Madzharov, Lyudmil Petkov

Technical University of Gabrovo

Online web - based personalized weather station

Aleksandar Žorić¹, Siniša Ilić¹, Đurđe Perišić²

¹Faculty of technical sciences – University of Priština, Republic of Serbia

²Faculty of Information Technology, Slobomir P University, Slobomir, BiH

Pspice modeling of smps with IC viper100a

Dobroslav Dankov¹, Prodan Prodanov¹

¹Technical University of Gabrovo, Department of Electronics

Comparative analysis for detection of smoke in the blue and infrared light spectrum

Milen Kirov, Velimira Todorova

Technical University of Gabrovo

Control of stepper motor with wireless protocol by mobile application

Prodan Prodanov, Dobroslav Dankov, Mincho Simeonov

Technical University of Gabrovo

Autonomous aerial system

S. V. Lozanova

Institute of Robotics at Bulgarian Academy of Sciences “Acad. G. Bonchev” Str., Bl.2, Sofia 1113, Bulgaria

AUTOMATION

Chairmen: Prof. Toshko Nenov, Ph.D., Assoc. Prof. Dragomir Chantov, Ph.D.,
Building № 3, Hall 3410
Beginning: 13.00 h.

Examination on bipedal robots structures and motion control methods

Hilmi KUSCU¹, Eray YILMAZLAR², Taskin TEZ³

¹*Trakya University, Mechanical Engineering Department, Edirne, TURKEY*

²*Kirklareli University, Technical Sciences Vocational School, Kirklareli, TURKEY*

³*Edirne Sultan Murat I State Hospital, Edirne, TURKEY*

Study of the effects of the mechanical processing in the electric drive system in turning machines

Marin Zhilevski

Technical University of Sofia

Remote control and diagnostics of lift system

Todor TODOROV

Technical University of Gabrovo

State estimation of a summer toboggan using the extended kalman filter

Christoph Menz, Silvio Bachmann

Schmalkalden University of Applied Sciences

Synchronizing of generators and simple application to hospital

OZGUR MERCANLI¹, HILMI KUSCU²

¹*Trakya University, Mechanical Engineering Department, Edirne, TURKEY*

²*Trakya University, Mechanical Engineering Department, Edirne, TURKEY*

PID controller with noise filter design based on PSO optimization algorithm– siso system with integrator case

Aleksandar D. Micić¹, Jordan N. Radosavljević¹,

¹*Faculty of Technical Sciences, University of Priština, K. Mitrovica, Serbia*

A model based control performance assessment applied to laboratory thermal plant

Aleksandar D. Micić¹, Aleksandar Č. Žorić¹

¹*Faculty of Technical Sciences, University of Priština, K. Mitrovica, Serbia*

Control of a manipulator with 3 degrees of freedom with Raspberry Pi and codesys

Stanimir Yordanov, Veselin Mitev, Teodor Kovachev

Technical University of Gabrovo

System for automatic reporting a labour productivity in real time

S. Yordanov, S. Ivanov, G. Mihalev

Technical University of Gabrovo

System for image recognition based on RASPBERRY PI

Stanko Stankov, Stefan Ivanov

Technical University of Gabrovo

Chairmen: Assoc. Prof. Stanimir Sadinov, Ph.D., Sen. Assist. Krasen Angelov, Ph.D.

Building № 2, Hall 2215

Beginning: 13.00 h.

Frequency response examination of cone circular acoustic transducer

Georgi Markov¹

¹ Technical University of Varna, 1 Studentska Str, Varna, 9000, Bulgaria

Methodology for synthesis of perfect phase manipulated signals with length $N=3\text{MOD}4$

Plamen Yanakiev, Tsvetoslav Tsankov

Konstantin Preslavsky University of Shumen

Computer laboratory for automated synthesis of phase manipulated signals

Plamen Yanakiev, Tsvetoslav Tsankov

Konstantin Preslavsky University of Shumen

Methodology for synthesis of complementary binary phase manipulated signals with length $N=1\text{MOD}4$

Plamen Yanakiev, Tsvetoslav Tsankov

Konstantin Preslavsky University of Shumen

Modifications of binary phase manipulated signals with length $N=1\text{MOD}4$ mismatched filters for their processing

Borislav Bedzhev, Plamen Yanakiev

Konstantin Preslavsky University of Shumen

Approach for mimo wireless channel modelling and system characterization

Michail Malamatoudis

Technological Educational Institute of Eastern Macedonia and Thrace, Greece

Computer modelling and analysis of dispersion compensation schemes in optical communication lines

Krasen Angelov¹, Stanimir Sadinov², Panagiotis Kogias³

^{1, 2} Technical University of Gabrovo, Bulgaria

³ Technological Educational Institute of Eastern Macedonia and Thrace, Greece

Challenges in the digitalization of works of church art in temple architecture

Andreyana Doykin¹, Krasen Angelov²

¹ St. Cyril and St. Methodius University of Veliko Tarnovo, Bulgaria

² Technical University of Gabrovo, Bulgaria

Neural Network Based Processing of EEG Signals for HCI

Strahil Sokolov

University of Telecommunications and Post

Energetic induced interferences at fm broadcast services

Kliment Angelov

Technical University of Sofia

Effect of the rotation on the VWM algorithm

Bojan Prlinčević¹, Zoran Milivojević²

¹ *Higher Technical Professional School, Zvečan, Serbia*

² *College of Applied Technical Sciences, Nis, Serbia*

Application of industrial networks in smart grid

Grigor Mihaylov, Ivaylo Stoyanov, Teodor Iliev, Elena Ivanova

University of Telecommunications and Posts, University of Ruse “Angel Kanchev”

Application of new modulation schemes in 5G mobile networks

Grigor Mihaylov, Teodor Iliev, Ivaylo Stoyanov, Elena Ivanova

University of Telecommunications and Posts, University of Ruse “Angel Kanchev”

Blind watermarking scheme in chrominance channel based on svd and bit-plane decompositions

Zoran Veličković¹, Zoran Milivojević¹, Marko Veličković¹

¹ *College of Applied Technical Sciences, Niš, Serbia*

Influence of the rain noise to intelligibility in Serbian language

Dijana Kostić¹, Zoran Milivojević¹, Zoran Veličković¹,

College of Applied Technical Sciences of Nis, Serbia

COMPUTER SYSTEM

Chairmen: Assoc. Prof. Ivan Simeonov, Ph.D., Sen. Assist. Hristo Kilifarev, Ph.D.
Building № 3, Hall 3312
Beginning: 13.00 h.

Object recognition with kinect sensor

Tsvetomira Georgieva, Hristo Lalev

Konstantin Preslavski University of Shumen

An approach for laptop computers evaluation using multiple-criteria decision analysis

Dragisa Stanujkic, Milena Jevtic, Branislav Ivanov

Technical Faculty in Bor, University of Belgrade, Vojske Jugoslavije 12, 19210 Bor, Serbia

System approach to local infrastructure for internet of food (IoF)

Krassimir Iliev Kolev¹, Atanas Nikolov Kostadinov²

¹*University of Food Technologies – Plovdiv*

²*Technical University – Sofia, Plovdiv branch*

Computer system based on LoRaWAN for food traceability

Krassimir Iliev Kolev¹, Atanas Nikolov Kostadinov²

¹*University of Food Technologies – Plovdiv*

²*Technical University – Sofia, Plovdiv branch*

Fabric cutting optimization application

Özgür Altunsöğüt¹, Erdem Uçar¹

¹*Trakya University*

Predicting the amount of wastage of finished goods in textile dyeing factories

Özgür Altunsöğüt¹, Erdem Uçar¹ and Yılmaz Kılıçaslan²

¹*Department of Computer Engineering, Faculty of Engineering, Trakya University, 22180 Edirne, Turkey*

²*Department of Computer Engineering, Faculty of Engineering, Adnan Menderes University, 09100 Aydın, Turkey*

Using lstm neural networks for fake online user review detection

Özlem Uçar¹, Kenan Taşağal²

¹*Trakya Üniversitesi Engineering Faculty, Edirne Turkey*

²*Trakya Üniversitesi Engineering Faculty, Edirne Turkey*

Practical aspects of using virtualization with raspberry pi clusters

Dejan Vujičić¹, Dragana Mitrović¹, Dušan Marković², Milan Vesković¹, Siniša Randić¹

¹University of Kragujevac, Faculty of Technical Sciences in Čačak

²University of Kragujevac, Faculty of Agronomy in Čačak

COMPUTER TECHNOLOGIES

Chairmen: Assoc. Prof. Valentina Kukenska, Ph.D., Assoc. Prof. Delyan Genkov, Ph.D.

Building № 3, Hall 3311

Beginning: 13.00 h.

Smart-contract of ethereum blockchain

Veneta Panayotova Aleksieva, Anton Plamenov Huliyan

Technical University of Varna

Anomalies based botnet detection system

Yulia Aleksandrova Aleksieva, Hristo Georgiev Valchanov

Technical University of Varna

An approach to building a digital university document repository

Emil Hadzhikolev, Stanka Hadzhikoleva, Nedelcho Andonov

Plovdiv University "Paisii Hilendarski"

System for laboratory exercises using virtual machines

Delyan Genkov

Technical University of Gabrovo

Aspects of the selection of a web-based content management system

Petar Halachev

University of Chemical Technology and Metallurgy – Sofia, Bulgaria

Optimal path in graph when using different topologies to observation objects in a security zone

Iliyan Boychev

Technical University of Varna

Complexity of decomposition algorithm

Matyo Dinev, Valentina Kukenska, Petar Minev

Technical University of Gabrovo

Process modeling in the operating systems

Valentina Kukenska, Petar Minev, Matyo Dinev

Technical University of Gabrovo

Analyzes and research with cloud technologies of the weather conditions for a specific arable land

Elitsa Bakalova

University of Veliko Tarnovo 'St. Cyril and St. Methodius'

An approach for automatic recording and visualization of data from autonomous systems

Delyan Genkov

Technical University of Gabrovo

Web service integrated matlab parallel computing

Dejan Vujičić, Željko Jovanović, Dijana Stojić, Uroš Pešović, Marina Milošević, Siniša Randić

University of Kragujevac, Faculty of Technical Sciences in Čačak, Serbia

DESIGN OF MACHINES AND INSTRUMENTS AND TECHNOLOGIES IN MECHANICAL ENGINEERING

Chairmen: Prof. Galya Duncheva, D. Sc., Assoc. Prof. Angel Anchev, Ph.D.

Building № 1, Hall 1114

Beginning: 13.00 h.

Residual stresses determination in materials with preferred orientation

Jiri Capek, Nikolaj Ganey, Karel Trojan, Kamil Kolarik

Department of Solid State Engineering, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague

Morphological analysis of diamond burnishing device

K. F. Selimov

Technical University Gabrovo

Development of genetic-morphologic approach at the synthesis of machine-tool-instrumental rigging

Yurri Kuznetsov¹, F. V. El-Dahabi²

¹*National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine*

²*National Conservatory of Arts and Crafts (Beirut, Lebanon)*

Theoretical aspects of automated designing spatial frameworks for technological and machine-tools equipment

Yurri Kuznetsov¹, Dmytro Dmitriev², Serhii Rusanov², Anton Omelchuk²

¹*National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine*

²*Kherson National Technical University, Kherson, Ukraine*

Practical applications of the CAD/CAM systems in the machine tools

Madlena Zhilevska¹, Marin Zhilevski²

¹*Technical College of Lovech*

²*Technical University of Sofia*

Modeling of scrubber for cleaning industrial gases

V. Aftaniuk¹, V. Spinov²

¹*National University "Odessa Maritime Academy"*

²*Odessa National Polytechnic University*

Redesigning of clamp lock mechanism for a stretch blow molding machine

M. Tahir ALTINBALIK¹, Engin KAHRAMAN²

¹*Trakya University, Faculty of Engineering, Department of Mechanical Engineering, Edirne / TÜRKİYE*

²*Aypet Ambalaj A.Ş. Çorlu/Tekirdağ/TÜRKİYE*

Analysis of functional tests of the drills for perforates

Milko Dochev¹, Cvetan Naidenov²

¹*Technical College - Lovech*

²*Sparky - Eltos EAD – Lovech*

Analysis of functional tests of point chisel and flat chisel for rotary hammer

Milko Dochev¹, Cvetan Naidenov²

¹*Technical College - Lovech*

²*Sparky - Eltos EAD – Lovech*

Development of 3-D precautions for the production of responsible structural elements

Salenko A.F.¹, Orel V.N.¹, Shchetinin V.T.¹, Titarenko A.N.¹, Gabuzyan G.V.¹

Samusenko A.N.²

¹*Kremenchug National University named M.Ostrogradsky, Kremenchug, Ukraine*

²*State Design Bureau "Yuzhnoe" named M.K. Yangel, Dnipro, Ukraine*

Physical processes and materials in high-energy fluxes processing

Peter Petrov, Stefan Valkov, Maria Ormanova, Darina Kaisheva, Todor Hikov

Institute of Electronics, BAS, Tsarigradsko Chaussee 72, 1784 Sofia, Bulgaria

Heat-resistance of fe-c-cu boronizing powder metallurgical constructional materials

Ivan Mitev, Ivan Vinev

Technical University of Gabrovo

Features when alloyed of iron matrix in powder metallurgy

Ivan Vinev

Technical University of Gabrovo

Structure and mechanical properties of castings obtained by a precision casting method

V. Todorov, G. Rashev, M. Atanasova

Technical University of Gabrovo

Computer simulation of different types of biodegradable plastics

Emil Velev

University of Plovdiv Paisii Hilendarski

Structural genetic-morphological synthesis of kinematics of the longitudinal sharpening

Guerra J.A. Hamuyela¹, Kuznetsov Yu.N.²

¹*University Augustino Netto, (Luanda, Angola)*

²*National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", (Kyiv, Ukraine)*

HYDRAULICS, PNEUMATICS AND HEAT ENGINEERING

Chairmen: Assoc. Prof. Hristo Hristov, Ph.D., Sen. Assist. Valentin Petkov, Ph.D.
Building № 1, Hall 1300
Beginning: 13.00 h.

Distribution of pressure in an operating gap of pulse seal

Kuznetsov E. G., Nahorni V. V.

Ukraine, Sumy, Sumy State University, Faculty of Electronic and Information Technologies

Movement of single solid impurities in the boundary layer of aquasi-static two-phase plane current *Part I*

Rumen Yankov

Technical University of Sofia, Kollege-Sliven

Influence of surface roughness of channel on friction coefficient of electrically conducting fluids

Mamedov A.¹, Stas S.²

¹*National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"*

²*Cherkasy Institute of Fire Safety named after Chernobyl Heroes of National University of Civil Protection of Ukraine*

The actuator based on the elastic fluid dosing

Oleksandr Gubarev, Konstantin Belikov, Oksana Hanpanturova

Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

The inlet fluid temperature influence on the multi-mode hydraulic drive operating

Oleksandr Gubarev, Konstantin Belikov, Oksana Hanpanturova, Alyona

Muraschenko

Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

Temperature influence on cavitation mass transfer in the channel of Laval nozzle type

Oleksandr Luhovskyi, Igor Nochnichenko, Oleg Jakhno, Dmytro Kostiuk

National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine

Forecasting working capacity of polyamid air pipe in pneumatic systems

Nikolay Stefanov

Technical University of Gabrovo

The temperature influence on operating in hydraulic systems

Oleg Jakhno, Oleksandr Gubarev, Dmytro Kostiuk, Alona Murashchenko

National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine

MATHEMATICS AND INFORMATICS

Chairmen: Prof. Stoyan Kapralov, D. Sc., Sen. Assist. Bilyana Stoinova, Ph.D.

Building № 1, Hall 1344

Beginning: 13.00 h.

Complex homogeneous differential equation of first and second order through iterations

Jelena Vujaković, Nataša Kontrec, Stefan Panić

University of Priština, Faculty of Sciences and Mathematics

Lole Ribara 29, Kosovska Mitrovica, Serbia

Greedy-genetic algorithm hybrid solution of 1D stock cutting problem

Todor Balabanov, Ivan Blagoev, Zornitsa Atanassov

Institute of Information and Communication Technologies

Bulgarian Academy of Sciences

Development of software applications and problems in their evaluation

Petar Halachev

University of Chemical Technology and Metallurgy – Sofia, Bulgaria

The second mean value theorem for complex line integral

Jelena Vujaković, Stefan Panić, Nataša Kontrec

University of Priština, Faculty of Sciences and Mathematics

Lole Ribara 29, Kosovska Mitrovica, Serbia

Mlp with stochastic manipulated hidden layer

Todor Balabanov, Rumen Ketipov, Zornitsa Atanassova

Institute of Information and Communication Technologies

Bulgarian Academy of Sciences

**MECHATRONICS, METROLOGY AND QUALITY
MANAGEMENT
TECHNOLOGIES IN TEXTILE PRODUCTION**

Chairmen: Prof. Dimitar Dichev, D.Sc., Assoc. Prof. Dimcho Pulov, Ph.D.

Building № 2, Hall 2415

Beginning: 13.00 h.

Optimize the elasticity of 100% acrylic yarn worked on psk-225 spinning machine

Borislav Tzonev Stoyanov¹, Krasimir Iliev Drumev¹, Dobrin Nenchev Genov¹

¹Technical university of Gabrovo, department "IDTE"

Accuracy increasing methods of belt weigher mass measurement

Snezana Aleksandrovic¹, Vesna Damnjanovic¹, Ilija Jeftenic²

¹University of Belgrade, Faculty of Mining and Geology, Belgrade, Serbia

²University of Belgrade, Faculty of Electrical Engineering, Belgrade, Serbia

Reliable implementation of serial pseudorandom/natural code converter

Goran Miljković, Dragan Denić, Milan Simić, Aleksandar Jocić

University of Niš, Faculty of Electronic Engineering

Aleksandra Medvedeva 14, 18000 Niš, Serbia

Peculiarities of metrology in millimeter range communication systems

Aleksey Yanenko¹, Mikhail Prokofiev¹, Sergey Peregudov¹, Valentina Ovod²

¹Igor Sikorsky Kyiv Polytechnic Institute

²Kyiv electromechanical college

ECONOMICS AND FINANCE SOCIAL SCIENCES AND HUMANITIES

Chairmen: Assoc. Prof. Dobrin Ganchev, Ph.D., Assoc. Prof. Anton Antonov, Ph.D
Building № 1, Hall 1326
Beginning: 13.00 h.

Statistical measurement of consumer skepticism in the field of tourism

Antonia Lazarova

European Higher School of Economics and Management

Smart correlations between economic parameters in research, related to the social role of sex

Antonia Lazarova

European Higher School of Economics and Management

Practical application aspects of structural accounting analysis for revenues of machine-building enterprises in a comperatitive environment

Ivan Nikolaev Sabev

Technical University of Gabrovo

Budgeting operating income of an industrial enterprise as a precondition for their effective management

Ivan Nikolaev Sabev, Tsanka Marinova Zlateva-Petkova

Technical University of Gabrovo

Method of "Expenditure-Benefits" for assessment of infrastructure investments

Plamen Parushev¹, Head assistant Milen Mitkov²

¹*Higher School of Transport "Todor Kableshkov", Sofia*

²*Tsenov Academy of Economics, Svishtov*

Reflection of solvency ii on the development of casco insurance for motor vehicles

Milen Mitkov, Plamen Parushev²

¹*Tsenov Academy of Economics, Svishtov*

²*Higher School of Transport "Todor Kableshkov", Sofia*

Methodology and method of assets investment in the non-life insurance

Sanja Radovanovic, Dragoslava Sredojevic, Snezana Rakic, Nenad Mihailovic

Valjevo Business School of Applied Studies

The impact of cryptocurrencies on the digital economy

Bojan Kocić, Oliver Popović, Andrija Babović

Belgrade Business Academy for Applied Studies, Serbia

Some aspects of the relationship between ethics and politics in contemporary political philosophy

Usov Dmytro

Cherkasy Institute of Fire Safety

Features of academic culture of students of technical institute (on the example of cherkasy institute of fire safety named after chornobyl heroes)

Horenko L., Kosyak S.

Cherkasy Institute of Fire Safety named after Chornobyl Heroes of National University of Civil Defense of Ukraine

The impact of social crises on the organization of the service and life of the personnel of a professional fire brigade based on the example of Ukraine in 1917-1929

Tomilenko Andriy

Cherkasy Institute of Fire Safety named after Chernobyl Heroes

Dynamics of populatoin morbidity in Bulgaria – trends and challenges

Ivanka Stoyanova - Todorova

Technical University of Gabrovo

ORGANIZATION AND MANAGEMENT

Chairmen: Assoc. Prof. Daniela Dimova, Ph.D., Sen. Assist. Petko Naydenov, Ph.D.
Building № 1, Hall 1222
Beginning: 13.00 h.

Structural and functional characteristics of the economic space of forestry in the context of the sustainable development of the forestry complex

I.Ye. Yarovaya

Sumy State University (Ukraine)

New multi-objective optimization algorithm applied to ecosystems

Dragana Cvetkovic¹, Vladimir Saso², Borivoje Milosevic³, Srdjan Jovkovic²

¹*University MEGATREND Belgrade, Serbia*

²*University ALFA BK Belgrade, Serbia*

³*University UNION Nikola Tesla, Faculty of Business and Law, Belgrade, Serbia*

Risk assessment at the workplace

Elitsa Taseva, Liliya Damyanova

University of Chemical Technology and Metallurgy

Project like a management and realization

Kliment Anguelov, Nikolai Anguelov

Technical University of Sofia

Establishing the presence of a trend in the forecasting of human resources

Natasha Todorova

University of Chemical Technology and Metallurgy – Sofia, Bulgaria

Methodology for the analysis of the working force

Natasha Todorova

University of Chemical Technology and Metallurgy – Sofia, Bulgaria

Aspects at the assessment of employee in the budget sector

Liliana Valkova

University of Chemical Technology and Metallurgy – Sofia, Bulgaria

Contemporary software solutions in the human resources management

Liliana Valkova

University of Chemical Technology and Metallurgy – Sofia, Bulgaria

Design of personnel assessment systems and life cycle of the project

Temenuzhka Halacheva

University of Chemical Technology and Metallurgy – Sofia, Bulgaria

Regional resource flows: attributes and taxonomy

Mishenin Yevhen¹, Koblanska Inna²

¹Sumy State University, Sumy, Ukraine

²Sumy National Agrarian University, Sumy, Ukraine

The role and significance of management accounting in the knowledge management system

Tsanka Zlateva-Petkova, Ivan Sabev

Technical University of Gabrovo

The new requirements for competence in the field of management accounting

Tsanka Zlateva-Petkova

Technical University of Gabrovo

EDUCATION TECHNOLOGIES

Chairmen: Assoc. Prof. Diana Izvorska, Ph.D., Sen. Assist. Tsanka Zlateva, Ph.D.
Building № 1, Hall 1324
Beginning: 13.00 h.

Comparative analysis of IT subjects' teaching quality in high schools

Nebojša Stanković, Marija Blagojević, Miloš Papić

University of Kragujevac, Faculty of Technical Sciences, Čačak, Serbia

Semantic approach to script concordance test

Maja Radović¹, Milorad Tošić², Danijela Milošević¹, Marjan Milošević¹, Marina Milošević¹

¹*Faculty of Technical Sciences Čačak, University of Kragujevac, Serbia*

²*Faculty of Electronic Engineering, University of Nis, Serbia*

Functional testing and assembly of modules of a microprocessor meteorological station, realized via the Arduino development environment

Velislava Raydovska, Slavi Luybomirov, Daniela Shehova

University of Plovdiv Paisii Hilendarski, Faculty of Physics And Technology

Research and teaching of inductively coupled circuits with modelling in virtual environment

Velislava Raydovska, Velichko Manev, Dilyana Kashokova

University of Plovdiv Paisii Hilendarski Faculty of Physics and Technology

Laboratory setup for measurements basic pump system characteristics

Milos Bozic¹, Marko Sucurovic², Marko Rosic³, Vojislav Vujicic⁴, Miroslav Bjekic³

¹*Department of Mechatronics, University of Kragujevac, Faculty of Technical Sciences in Čačak*

²*Department of Industrial Engineering, University of Kragujevac, Faculty of Technical Sciences in Čačak*

³*Department of Power Engineering, University of Kragujevac, Faculty of Technical Sciences in Čačak*

⁴*Department of Mechanical Engineering, University of Kragujevac, Faculty of Technical Sciences in Čačak*

Pedagogical patterns for a differentiated approach to learning

Vladimir Tzvetkov, Stanka Hadzhikoleva

Plovdiv University "Paisii Hilendarski"

New trends in software testing course in higher education

Olga Ristić, Marjan Milošević, Maja Radović, Sandra Milunović-Koprivica, Milan Vesković

Faculty of Technical Science in Čačak, University of Kragujevac, Serbia

Teaching for automation design of digital circuits

Petar Borsiov Minev, Valentina Stoyanova Kukenska, Matyo Stefanov Dinev

Technical University of Gabrovo

A survey of the level of applicability of e-educational resources in secondary education

Gergana Markova, Silvia Varbanova

University of Veliko Tarnovo

CHEMISTRY AND ECOLOGY

Chairmen: Assoc. Prof. Pencho Stoychev, Ph.D., Sen. Assist. Dragomir Vasilev, Ph.D.
Building № 1, Hall 1314
Beginning: 13.00 h.

Practical application of UV-LED in environmental protection
Beletskaya Evgeniya¹, Garmash Bogdan¹, Hovorova Katerina², Diumin Eduard²
Govorov Pilip²

¹*Ukrainian State University of Railway Transport*

²*O.M.Beketov National University of urban Economy in Kharkiv*

Water quality determination of the lakes Mogan and Cernek (Turkey) by using macroinvertebrates accordance with water framework directive

Naime ARSLAN^{1*}, Deniz MERCAN¹

¹*Department of Biology, Faculty of Arts and Sciences, Eskişehir Osmangazi University, Eskişehir, Turkey*

Chironomidae Potamofauna of Emet, Orhaneli and Mustafa Kemal Paşa Streams, Catchment Area of Lake Uluabat

Sevgi ULUKÜTÜK¹, Naime ARSLAN²

¹*AKU, TUAM, Campus of ANS Gazlıgöl Road, 03200 Afyonkarahisar, Turkey*

²*Department of Biology, Faculty of Arts and Sciences, Eskişehir Osmangazi University, Eskişehir, Turkey*

Augmentation of microbial fuel cell performance using modified air cathodes
Blagovesta Midyurova¹, Aleksandar Dimitrov²

¹*Prof. D-r Asen Zlatarov University*

Radio-environmental monitoring of drinking water and bottom sludge in the area of Kozloduy NPP

Pencho Stoychev

Technical University of Gabrovo

Study of the state of the water sources in Gabrovo region

Pencho Stoychev

Technical University of Gabrovo

Monitoring of emissions of harmful substances in the manufacture of sanitary ceramics

Dragomir Vassilev, Radostina Boyanova

Technical University of Gabrovo

Building of waste composting equipment in the Sevlievo municipality

Dragomir Vassilev, Steliyana Stoyanova

Technical University of Gabrovo

PHYSICS

Chairmen: Sen. Assist. Plamen Danailov, Ph.D., Sen. Assist. Daniela Nedeva, Ph.D.

Building № 1, Hall 1406

Beginning: 13.00 h.

The effect of pressure on excited state binding energy, expectation value of the electron-impurity and impurity self-polarization in a GAAS-GA_{1-x}AL_xAS spherical quantum dot

Ali ihsan MESE

Department of Physics, Trakya University, Edirne 22030, Turkey

The effect of binding energy a donor impurity in a gaas/alas tetragonal quantum dot under applied spatial electric field

O.Akankan

Departmanof Physics, Trakya University, Edirne 22030, Turkey

The effect of polarization a donor impurity in a gaas/alas tetragonal quantum dot under applied spatial electric field

O. Akankan

Departmanof Physics, Trakya University, Edirne 22030, Turkey

Local Structure of Liquid Zirconium: Molecular Dynamics Study

Sedat SENGUL, Unal DOMEKELI

Faculty of Science, Trakya University, Edirne, Turkey

Molecular dynamic simulation of glass formation and crystallization in binary metallic alloys during cooling process

Sedat SENGUL and Unal DOMEKELI

Dept. of Physics, Faculty of Science, Trakya University, Edirne, 22030, Turkey

Molecular dynamic simulation study of melting point of L12-Cu₃Au alloy

Murat CELTEK¹ and Unal DOMEKELI²

¹*Faculty of Education, Trakya University, Edirne, Turkey*

²*Faculty of Science, Trakya University, Edirne, Turkey*

The study of molecular dynamics simulations of melting behavior of BCC tantalum nanoclusters

Murat CELTEK¹, Unal DOMEKELI²

¹*Faculty of Education, Trakya University, Edirne, Turkey*

²*Faculty of Science, Trakya University, Edirne, Turkey*

The effect of the cooling rate on the solidification of the liquid Pd nanoparticle
Unal DOMEKELI¹, Sedat SENGUL¹, Murat CELTEK²

¹ *Department of Physics, Faculty of Science, University of Trakya, 22030, Edirne, TURKEY*

² *Faculty of Education, University of Trakya, 22030, Edirne, TURKEY*

Size dependent melting behavior of RH nanoparticles by molecular dynamics simulation

Unal DOMEKELI¹, Murat CELTEK², Sedat SENGUL¹

¹ *Department of Physics, Faculty of Science, University of Trakya, 22030, Edirne, TURKEY*

² *Faculty of Education, University of Trakya, 22030, Edirne, TURKEY*

Thermo-physical magnitudes influencing the laser marking of steel products

Nikolay Angelov

Technical University of Gabrovo

Influence of frequency of laser marking on products of steel X10CRNITI18-10

Nikolay Angelov

Technical University of Gabrovo