INTERNATIONAL
SCIENTIFIC CONFERENCE

UNITECH 2020
GABROVO

PROGRAM

20 - 21 NOVEMBER 2020
GABROVO
International Scientific Conference UNITECH’20 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

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Vice Rector in charge of Research and Development

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Prof. Nikolay Madzharov, PhD, Bulgaria
Prof. Dimitar Dichev, DSc, Bulgaria
Prof. Toshko Nenov, PhD, Bulgaria
Assoc. Prof. Rosen Ivanov, PhD, Bulgaria
Assoc. Prof. Angel Anchev, PhD, Bulgaria
Assoc. Prof. Stanimir Sadinov, PhD, Bulgaria

UNITECH’20 will be held on 20 and 21 November 2020
at the Technical University of Gabrovo

International Scientific Conference “UNITECH 2020” – Gabrovo
WORKING PROGRAM  
OF THE SCIENTIFIC CONFERENCE  

19th November 2020, Thursday  

14.00 – 17.00 h Registration, Rectorat building  

20th November 2020, 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 "Electron beam welding - process, materials and techniques", Prof. Peter Petrov, DSc, Institute of Electronics, BAS  
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  
14.30 Coffee break  
16.00 – 17.00 h Information day Project BG05M20P001-1.002-0023 Centre of Competence “Smart Mechatronic, Eco- and Energy Saving Systems and Technologies", (SMEEST)  
19.00 h Formal dinner Restaurant Balkan Hotel  

21th November 2020, Saturday  

09.00 – 12.00 h Thematic sessions
THEMATIC SESSIONS

ELECTRICAL ENGINEERING

Chairmen: Assoc. Prof. Svilen Rachev, PhD, Sen. Assist. Luybomir Dimitrov, PhD
Building: № 2A, Hall 2603
Beginning: 13.00 h.

Solar radiation atlas in Trebinje in the Republic of Srpska
Dragoljub Lj. Mirjanić¹, Tomislav M. Pavlović², Ivana S. Radonjić², Lana S. Pantić²,
Andelina V. Marić², Galina I. Sazhko³
¹Academy of Sciences and Arts of the Republic of Srpska, Bana Lazarevića 1, 78000 Banja Luka,
Republic of Srpska
²University of Niš, Faculty of Sciences and Mathematics, Department of Physics, Višegradska 33,
18000 Niš, Serbia
³Ukrainian engineering pedagogics academy, Kharkov, Ukraine

Determination of reserve by sensitivity and boundary conditions when using
unselective instantaneous overcurrent relay protection in medium voltage electrical
grids
Mediha Mehmed-Hamza¹, Plamen Stanchev²
¹Medical University of Varna, Department of Medical Equipment, Electronic and Information Technologies
in Health care, 9002 Varna, Bulgaria
²Technical University of Varna, Department of Electric Power Engineering, 9010 Varna, Bulgaria

Fault investigation and operation of relay protections and autoreclose with the use of
simulation models in medium voltage electrical grids
Mediha Mehmed-Hamza¹, Plamen Stanchev²
¹Medical University of Varna, Department of Medical Equipment, Electronic and Information Technologies
in Health care, 9002 Varna, Bulgaria
²Technical University of Varna, Department of Electric Power Engineering, 9010 Varna, Bulgaria

Real time speed control of electric motor via Matlab
Osman ULKIR¹
¹Department of Electronics and Automation, Mus Alparslan University, Mus, 49100, Turkey

Software simulation of the presence of mechanical unbalance in electrical equipment
with asynchronous motors
Yuliyyan Yordanov
Technical University of Varna, Department of Electric Power Supply and Equipment

Mode control of lighting system based on the smart-light concept
Hоворов Pylyp, Kindinova Anastasia, Hоворова Kateryna, Dyumin Eduard,
Аbdelrahim Omer
O.M. Beketov National University of Urban Economy in Kharkiv

Effect of calcination time on the dielectric properties of doped with tin dioxide barium
titanate
Ivaylo Lazarov
Technical University of Gabrovo
Development of technical solution for experimental research and verification of methods for analyzing of dynamic modes in urban electric transport
Nikolay Bezhanov
Technical University of Varna, Department of Electric Power Supply and Equipment

Design and development of a laboratory model of a pure sine wave inverter for power supply of low power consumers
Hristo Ibrishimov
Technical University of Gabrovo

Investigation of some parameters of electromagnetic compatibility from dimmable LED bulbs
Tsvyatko Kolev Varbov, Krasimir Marinov Ivanov
Technical University of Gabrovo

Research of the influence of the inter-row spacing for ground mounted PV systems on the annual production of electric energy using PVGIS-SARAH
Tsvyatko Kolev Varbov
Technical University of Gabrovo

Faults in power grids 20KV
Mediha Mehmed-Hamza¹, Anton Filipov²
¹ Medical University of Varna, Department of Medical Equipment, Electronic and Information Technologies in Health care, 9002 Varna, Bulgaria
² Technical University of Varna, Department of Electric Power Engineering, 9010 Varna, Bulgaria

Influence of individual standard uncertainties on total uncertainty of energy efficiency of a three-phase induction motor
Branko Koprivica¹, Alenka Milovanović¹, Srdan Divac³, Marko Šućurović²
¹ University of Kragujevac, Faculty of Technical Sciences Čačak Svetog Save 65, 32000 Čačak, Serbia
² Department of Electrical and Electronic Engineering, ³ Department of Mechanical Engineering,
³ PhD Scholarship of the Ministry of Education, Science and Technological Development of Serbia

Dynamic temperature modeling of industrial LED luminaire
Hristo Ibrishimov
Technical University of Gabrovo

Modeling of planar transformer for DC DC converter
Hristo Ibrishimov
Technical University of Gabrovo

Temperature measurement and current determination of horizontally and vertically placed low-voltage single core cable
Marko Šućurović¹, Milan Marjanović², Marko Rosić¹, Miroslav Bjekić¹, Branko Koprivica³
¹ Department of Power Engineering,
² Department of Mechanical Engineering,
³ Department of Electrical and Electronic Engineering, Svetog Save 65, 32000 Cacak, Serbia

Study of the electrical quality parameters of smart LED luminaires
Plamen Tsankov, Milko Yovchev, Teodor Todorov
Technical University of Gabrovo
On the conversion of a conventional car into an electric vehicle – some considerations, guidelines and practical steps  
Dimitrina Koeva, Petko Stanchev, Sven Rachev  
Technical University of Gabrovo

Energy efficient system for air conditioning of electrical bus  
Vasil Dimitrov, Stanislav Ilchev  
Todor Kableshkov University of Transport – Sofia

Remote control and management system for air-conditioning installation  
Emiliya Dimitrova, Vasil Dimitrov  
Todor Kableshkov University of Transport – Sofia

Commissioning of a goniophotometer and an integrating sphere with spectroradiometer in a new lighting laboratory at the Technical University of Gabrovo  
Plamen Tsankov  
Technical University of Gabrovo

Creating a model of phase-controlled bridge rectifiers in simulink for student training  
Hristo Ibrishimov  
Technical University of Gabrovo

Analysis of the participation of electric transport in the total energy mix in accordance with the planned indicators in the strategy for sustainable energy development of Varna for the period 2014-2020  
Valentin Gyurov  
Technical University of Varna, Department of Electric Power Supply and Equipment

Investigation of the power reduction of horizontally mounted solar module due to soiling  
Tomislav M. Pavlović, Ivana S. Radonjić, Dragoljub Lj. Mirjanić, Darko Divnić  
1 University of Niš, Faculty of Sciences and Mathematics, Department of Physics, Višegradska 33, 18000 Niš, Serbia  
2 Academy of Sciences and Arts of the Republic of Srpska, Bana Lazarevića 1, 78000 Banja Luka, Republic of Srpska
Capabilities of a mobile system for information processing by an inertion measuring system
Iskren Kandov, Anatoliy Aleksandrov, Goran Goranov
Technical University of Gabrovo

New kind of digital filter based on the frequency locked loop
Perišić Đurđe¹, Miroslav Bojović², Željko Gavrić³, Vanja Mišković¹
¹ Faculty of Information Technology, Slobomir P University, Slobomir, BiH
² School of Electrical Engineering, University of Belgrade, Beograd, Serbia

Contactless power supply and communication of the device for measuring excess fuel in modern diesel engines
Nikolay Madzharov, Desislav Iliev
Technical University of Gabrovo

Application of the smallest squares method for determining the model parameters of a two-collector magnetotransistor
Kazolis Dimitrios Theodosius¹, Anatoliy Aleksandrov², Gergana Mironova²
¹ Eastern Macedonia and Thrace Institute of Technology
² Technical University of Gabrovo

Improved IOT energy meter applicable in smart buildings
Aleksandar Č. Žorić¹, Muhamed Bejtović¹, Nikola Žorić¹, Bojan Jovanović²
¹ Faculty of Technical Sciences-University of Priština, Serbia
² The Technical School-Uroševac, Leposavić, Serbia

Analysis of the influence of wind generators on the quality of electricity at the point of connection to the distribution network
Muhamed Bejtović, Aleksandar Č. Žorić
Faculty of Technical Sciences, University of Priština, Serbia

Microwave food fat meter
Konstantyn Shevchenko¹, Oleksiy Yanenko¹, Mikhail Prokofiev¹, Sergey Peregodov¹,
Vasyl Kuz²
¹ Igor Sikorsky Kyiv Polytechnic Institute
² Ternopil Ivan Puluj National Technical University

Simulink model of Bidirectional DC/DC converter for electric vehicle application
Evgeni Malev
Technical University of Varna, Bulgaria

Review of a hybrid structure for application in EVs
Gergana Vacheva, Nikolay Hinov
Technical University of Sofia
Department of Power Electronics
Thermal models of DC DC converters for ultralight electric vehicles application in
Simulink
Evgeni Malev
Technical University of Varna, Bulgaria

Logical-probability approach in analysis of the reliability of mosfet transistors
Prodan Ivanov Prodanov
Technical University of Gabrovo

Indoor air quality monitoring processor system
Ivaylo Belovski¹, Anatoliy Aleksandrov²
¹ Prof. Assen Zlatarov University
² Technical University of Gabrovo

Sensorics of the individual hall potentials
S. V. Lozanova
Institute of Robotics at Bulgarian Academy of Sciences

A modified laser doppler vibrometer sensor with optimal phase control for nano-
amplitude measurements under harsh external conditions
I. V. Stepakhno¹, L. K. Yarovoi²
¹ Faculty of Physics and Mathematics. National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”
² Mechanics and Mathematics Faculty of Taras Shevchenko National University of Kyiv
Review of technics for traffic control from last decade
Vasil Shtere夫, Nikolay Hinov
Technical University of Sofia

Optimization of the 3P keys kernel parameters for interpolacion of audio signals
Nataša Savić, Zoran Milivojević
The Academy of Applied Technical and Preschool Studies, Section Niš, Aleksandra Medvedeva 20, 18000 Niš, Serbia

Evaluation of the influence of Pink Noise (PN) on the intelligibility of speech in the Serbian language, using Serbian Matrix Sentence Test (SMST) base and STOI algorithm
Dijana Kostić1, Marina Milivojević2, Zoran Milivojević3
1Geonais Niš, Serbia
2Mikkelsen Electronics, Niš, Serbia,
3College of Applied Technical Sciences of Niš, Serbia

Robustness of the SD watermarking algorithm in is mapping on filtering audio signals using notch filtering
Bojan Prlicesic1, Zoran Milivojević2, Milan Misic1
1Kosovo and Metohija Academy of Applied Studies, Leposavic, Serbia
2Academy of Applied Technical and Preschool Studies, Niš, Serbia

Planning and survey of radio coverage in lorawan communication network
Krasen Angelov, Nikolay Manchev, Stanimir Sadinov, Trayan Ivanov
Technical University of Gabrovo, Bulgaria

Analysis and evaluation of the transmission channel for communication with artificial pico- and nanosatellites
Krasen Angelov, Seyhan Myumyunali, Trayan Ivanov, Stanimir Sadinov
Technical University of Gabrovo, Bulgaria

A narrowband RF noise floor level analysis in case of electric arc
Kliment Angelov1, Peter Matov2, Sofia Angelova3
1,2,3 Technical University of Sofia

Noise recognition in communication channels by artificial neural networks
Dionisia Daskalaki
Technical University of Gabrovo

Topology of optical network in remote control systems
Emiliya Dimitrova, Vasil Dimitrov
Todor Kableskov University of Transport – Sofia
Building and configuration of a playout multiviewer monitoring system
Panagiotis Kogias\textsuperscript{1}, Stanimir Sadinov\textsuperscript{2}, Seyhan Sadak\textsuperscript{2}, Michail Malamatoudis\textsuperscript{1}, Hristian Hristov\textsuperscript{2}
\textsuperscript{1}International Hellenic University – Kavala Campus, Greece
\textsuperscript{2}Technical University of Gabrovo, Bulgaria

Simulation of the 32-channel WDM-FSO system in different atmospheric phenomena
Jelena Todorović\textsuperscript{1}, Branimir Jakšić\textsuperscript{1}, Petar Spalević\textsuperscript{1}, Majid Alsadi\textsuperscript{2}, Ahmad Mohammed Salih\textsuperscript{2}
\textsuperscript{1}Faculty of Technical Sciences, University of Priština in Kosovska Mitrovica, Serbia
\textsuperscript{2}School of Informatics and Computing, Singidunum University, Belgrade, Serbia

Performance of the mtseng algorithm for biometric on-line verification handwritten signature
Milivojević Zoran\textsuperscript{1}, Milivojević Marina\textsuperscript{2}
\textsuperscript{1}Academy of Applied Technical and Preschool Studies, Section Niš, Niš, Serbia
\textsuperscript{2}Mikkelsen Electronics, Niš, Serbia
Chairmen: Prof. Raycho Ilarionov, DSc, Assoc. Prof. Dragomir Chantov, PhD,
Building № 3, Hall 3312
Beginning: 13.00 h.

Multi-sensor gas-sensing head for air quality evaluation
Kamen Boyadzhiev¹, Stefan Ivanov²
¹ Department of Automation, Information and Control Systems,
Technical University of Gabrovo, Gabrovo, Bulgaria
² Department of Automation, Information and Control Systems,
Technical University of Gabrovo, Gabrovo, Bulgaria

Geo-referenced system for air quality monitoring
Kamen Boyadzhiev
Department of Automation, Information and Control Systems
Technical University of Gabrovo

Influence of the lookback period and the number of epochs in the prediction of time series using a neural network with a long short-term memory
Kiril Koparanov, Krasin Georgiev, Vasil Shterev
Technical University of Sofia

Optimal power flow and prices in the electricity market using the hybrid ppsosga algorithm
Milena Jevtić¹, Miroljub Jevtić², Jordan Radosavljević², Sanela Arsić¹, Dardan Klimenta²
¹ Technical Faculty in Bor, University of Belgrade, Bor, Serbia
² Faculty of Technical Sciences Kosovska Mitrovica, University of Pristina in Kosovska Mitrovica, Serbia

Impact of brightness and complexities to edge detection with roberts and canny operator on compressed images
Vladimir Maksimović¹, Mirko Milošević², Branimir Jaksic¹, Mile Petrovic¹, Petar Spalević¹
¹ Faculty of Technical Sciences, University of Pristina in Kosovska Mitrovica, Serbia
² School of Electrical and Computer Engineering of Applied Studies Beograd, Serbia

Mobile robot for fire detection
S. Stankov, S. Ivanov
Technical University of Gabrovo

Useful schemes for work with ultrasound sensors for quality testing of foods and materials
Hristo Kilifarev
Technical University of Gabrovo

Application of image processing in fog computing
Dušan Marković¹, Dejan Vujičić², Borislav Đorđević³, Siniša Randić²
¹ Faculty of Agronomy Čačak, University of Kragujevac, Serbia
² Faculty of Technical Sciences Čačak, University of Kragujevac, Serbia
³ Institute Mihailo Pupin d.o.o., Belgrade, Serbia
Humidity sensing elements based on V-doped SiO$_2$ surface layers
Zvezditza Nenova$^1$, Nedyu Nedev$^1$, Stephan Kozhukharov$^2$, Toshko Nenov$^1$
$^1$Technical University of Gabrovo
$^2$University of Chemical Technology and Metallurgy – Sofia

On the use of superclusters in automation
Georgi Mihalev, Aleksandar Lubenov
Technical University of Gabrovo

Design of a harmful gas detection system
Mustafa Kemal TEZCAN$^1$, Taşkıın TEZ$^2$, Fatma TEZCAN$^3$, Hilmi KUŞÇU$^4$
$^1$The University of Trakya,
$^2$Edirne Provincial Health Directorate,
$^3$The University of Kırklareli,
$^4$The University of Trakya
Study of upload and download traffic on a 6lowpan wireless sensor network for internet of things (IOT)
Aydan Haka
*Technical University of Varna, Bulgaria*

Comprehensive evaluation of zigbee wireless sensor network simulators for purposes of education
Aydan Haka
*Technical University of Varna, Bulgaria*

Exploring the influence of demographic factors on the image-based captchas
Sanela Arsić¹, Milena Jevtić¹
¹University of Belgrade, Technical Faculty in Bor, Bor, Serbia

Methodology for evaluation of decomposition algorithms
Matyo Stefanov Dinev
*Technical University of Gabrovo*

University course timetabling using genetic algorithms
Ozan Akı
*Trakya University*

University exam timetabling using genetic algorithms
Ozan Akı
*Trakya University*

Process modeling in information systems
Valentina Kukenska
*Technical University of Gabrovo*

System for collection and storage of data from independent sources
Delyan Genkov, Emil Angelov
*Technical University of Gabrovo*

Modeling of business processes forthcoming for digitalization
Valentina Kukenska, Petar Minev
*Technical University of Gabrovo*
Modeling of the process selection of clamping devices in the design of fixtures for the locating of workpieces during machining
Hristo METEV, Maria VLAHOVA
Technical University of Gabrovo

Effect of additive manufactured micro beam length on displacement
Osman ULKIR
Department of Electronics and Automation, Mus Alparslan University, Mus, 49100, Turkey

Density before sintering water dispersed iron powders
T. Kovachev, I. Miteva, I. Mitev
Technical University of Gabrovo

State and application of biosensors from biomechatronics in medicine
David Darinov Jonev¹, Stefan Kirilov Kartunov², Kristijan Kuk¹
¹Akademy of Criminalistic and Police Studies of Beograd
²Technical University of Gabrovo

Real time bicycle robot balance control using machine learning
Eray YILMAZLAR¹, Ercan COŞGUN², Hilmi KUŞÇU³
¹Kırklareli University, Technical Sciences Vocational School, Kırklareli, Turkey
²Kırklareli University, Technical Sciences Vocational School, Kırklareli, Turkey
³Trakya University, Mechanical Engineering Department, Edirne, Turkey

Analysis of 3D scanning technologies and comparison of existing scanning techniques
Aydın GÜLLÜ¹, Ali ÇAĞLAR², M. Ozan AKI³
¹Trakya University Vocational School of Ipsala
²Trakya University Institute of Science
³Trakya University Vocational School of Ipsala

Investigation of ventilator working principle and designing with equipment to be used for rapid production
Aydın GÜLLÜ¹, Kemal AKKUŞ², Özcan ÇETİNKAYA³
¹Trakya University Vocational School of Ipsala
²Trakya University Institute of Science
³Trakya University Vocational School of Keşan

Efficiency analysis in solar panel energy systems: AC-DC conversion cost and DC-DC energy use
Aydın GÜLLÜ¹, Hilmi KUŞÇU², Eray YILMAZLAR³
¹Trakya University Vocational School of Ipsala
²Trakya University Engineering Faculty
³Kirklareli University Vocational School of Technical Sciences
Chairmen: Assoc. Prof. Hristo Hristov, PhD, Assoc. Prof. Valentin Petkov, PhD
Building № 1, Hall 1300
Beginning: 13.00 h.

Mathematical modeling of working processes in a liquid-magnetic damper
Nochnichenko I.V., Haletskyi O.S., Kostiuk D.V., S. V. Strutynskyi
National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Ukraine

Intensification of transfer phenomena in technological processes due to the use of cavitation impact
Nochnichenko Ihor, Jakhno Oleg, Lugovska Kateryna
National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Ukraine

Influence of the initial steam parameters on the operation efficiency of the ship utilization turbine
V. Aftaniuk, B. Garagula, S. Aboleshkin, Y. Korovaichenko
National University “Odessa Maritime Academy”

Mathematical modeling of dynamic processes of the terrestrial robotic complex manipulator
Serhii Strutynskyi, Roman Semenchuk
Igor Sikorsky Kyiv Polytechnic Institute

Simulation study of the ship's loss of speed while maneuvering
Y. Korovaichenko, V. Aftaniuk
National University “Odessa Maritime Academy”

Particularity of analysis for energy efficiency of industrial buildings
Mariya Raykova, Ivaylo Tsvyatkov
Technical University of Gabrovo

Influence of a transverse magnetic field on an electromagnetic fluid in hydrodynamic initial section
A. N. Mamedov, A. D. Koval, A.N. Murashchenko, O. M. Yakhno
Igor Sikorsky Kyiv Polytechnic Institute, Ukraine

Study of the elastic characteristic of an element of a manometric device
Nikolay Stefanov
Technical University of Gabrovo

Experimental investigation on the heat transfer enhancement in single flow by wire-coil inserts
Plamen Bonev, Valentin Petkov, Hristo Hristov
Technical University of Gabrovo

Development of a device with increased consumption for fire extinguishing
Stas Serhiy ¹, Buzun Oleksandr ²
¹ Cherkasy Institute of Fire Safety named after Chornobyl Heroes (ChIFS), Ukraine
² State Emergency Service of Ukraine

International Scientific Conference “UNITECH 2020” – Gabrovo
Structure and dynamics of the national patent activity in Bulgaria for the period 2001-2019
Rumyana Ivanova Georgieva, Ventsislava Aleksandrova Nikolova-Minkova
Technical University of Gabrovo

Competitive advantages and economic benefits from licensing of industrial property sites
Ventsislava Aleksandrova Nikolova-Minkova
Technical University of Gabrovo

Application of multi-criteria methods to compose an optimal investment portfolio
Raimonda Martinkutė-Kaulienė¹, Rima Tamošiūnienė², Radvinė Skobaitė³
¹,²,³ Vilnius Gediminas Technical University, Lithuania

Modeling of the implementation of green economies in Eastern Europe
Inessa Mikhno¹, Viktor Koval², Rima Tamošiūnienė³, Oksana Redkva⁴
¹ Department of Management, International European University, Kyiv, Ukraine
² Odessa Institute of Trade and Economics of Kyiv National University of Trade and Economics, Ukraine
³ Mykolas Romeris University, Lithuania
⁴ Ternopil Ivan Puluj National Technical University, Ukraine

Development of local economic potentials – an example of industrial zone
Bojan Kocić¹, Nikola Vasić², Oliver Popović¹
¹ Academy of professional studies South Serbia, Leskovac, Serbia
² Belgrade Academy of business and art studies, Belgrade, Serbia

Occupational safety management as part of the organization system management
Mirjana Galjak¹, Vesna Nikolić², Rosa Šapić³
¹ Technical College of Applied Sciences, Lepošavić, Serbia
² Faculty of Occupational Safety, University of Niš, Serbia
³ College for Social Work, Belgrade, Serbia

Creation of business processes models in the field of manufacturing facilities maintenance
Valentina Kukenska, Petar Minev
Technical University of Gabrovo

The modernization of innovations in technique and systems as an alternative for development over the years
Simeon Tsenkulovski¹, Georgi Karlovski²
¹ Mashtech BG Ltd.
² Adtech Ltd.
Methods and preparedness for online education and training in the endurance
discipline of equestrian sport in the conditions of COVID-19
Ruzha Nedkova-Ivanova
*National Sports Academy “Vasil Levski”* - Sofia

Personal competence as a result of education
Minka Miteva Yordanova
*Technical University of Gabrovo, Bulgaria*

Development of a curriculum on "computer networks" in the context of the
development of the bologna process
Krassimir Iliev Kolev
*University of Food Technologies – Plovdiv*

Educational Aspects of Variable Frequency Controlled Pump System
Vojislav Vujičić¹, Miroslav Bjekić², Marko Šućurović², Marko Rosić²
¹Department of Mechanical Engineering
²Department of Power Engineering
*University of Kragujevac, Faculty of Technical Sciences Čačak, Serbia*

Software system for strength dimensioning of reservoirs and pressure tanks
D. R. Rusev, P. I. Milusheva
*University “Prof. Dr. Asen Zlatarov”, Burgas, Bulgaria*
SOCIAL SCIENCES AND HUMANITIES

Chairmen: Assoc. Prof. Svetla Panayotova, PhD, Sen. Assist. Plamen Kolev, PhD
Building № 1, Hall 1201
Beginning: 13.00 h.

Concepts for defining social work as important element of social service
Plamen Nikolov Kolev  
Department of Social and Economic Sciences  
Technical University of Gabrovo

Historical and philosophical discourse of tolerance: from modern to postmodern
Usov Dmytro  
Cherkasy Institute of Fire Safety named after Chornobyl Heroes of the National University of Civil Protection of Ukraine

Theories, practical models and standards of school social work
Zhaneta Tsoneva  
Technical University of Gabrovo

Analysis of impact of the fourth industrial revolution on the sphere of economy and education of Ukraine
Valentina Ovod, Oleg Palash  
Kyiv Electromechanical College

Research of government creating processes on the territory of modern Ukraine
Horenko Lesya¹, Zelinskyi Ruslan², Kosiak Svitlana¹  
¹ Cherkasy Institute of Fire Safety named after Chornobyl Heroes (ChIFS), Ukraine  
² Vinnytsia Academy of Continuing Education, Ukraine

The possibilities of the zentangle technique as art-therapy
Svetla Panayotova  
Technical University of Gabrovo

Techniques for resolving conflict situations in personnel management
Svetla Panayotova  
Technical University of Gabrovo

The COVID-19 pandemic and domestic violence against women and children
Ivanka Stoyanova - Todorova  
Technical University of Gabrovo, Bulgaria
Refinement Stability of Cubic Pyramidal Meshes
Miroslav S. Petrov¹, Todor D. Todorov²
¹Department of Technical Mechanics, Technical University, 5300 Gabrovo, Bulgaria
²Department of Mathematics, Informatics and Natural Sciences, Technical University, 5300 Gabrovo, Bulgaria

The Abstract Angle between Pyramidal Finite Element Spaces
Miroslav S. Petrov¹, Todor D. Todorov²
¹Department of Technical Mechanics, Technical University, 5300 Gabrovo, Bulgaria
²Department of Mathematics, Informatics and Natural Sciences, Technical University, 5300 Gabrovo, Bulgaria

Some common fixed point theorems in C* -algebra valued metric spaces
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C-class functions with coupled coincidence point results for a generalized compatible pair in ordered b-metric spaces
Ljiljana R. Paunović¹, Arslan Hojat Ansari², Penumarthy Parvateesam Murthy³
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Features of information support of conditions of safe functioning of personnel of management of objects of critical infrastructure
Azarenko Olena¹, Divizinyuk Mikhailo², Prokofiev Mikhailo³
¹National Aviation University
²State Institution “Institute of Environmental Geochemistry of the National Academy of Sciences of Ukraine”
³Igor Sikorsky Kyiv Polytechnic Institute
CHEMISTRY AND ECOLOGY

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

Environmental protection and quality of life: case study
Mirjana Galjak¹, Vesna Nikolić², Rosa Šapić³
¹ Technical College of Applied Sciences, Leposavić, Serbia
² Faculty of Occupational Safety, University of Niš, Serbia
³ College for Social Work, Belgrade, Serbia

Application of sonochemistry in the synthesis of isoamyl esters of higher fatty acids
Dragomir Vasilev¹, Nadezhda Petkova², Milena Koleva¹, Panteley Denev²
¹ Technical University of Gabrovo
² University of Food Technologies

Synthesis and modification of organic compounds with the use of ultrasonic and microwave energy
Dragomir Vasilev¹, Nadezhda Petkova², Milena Koleva¹, Panteley Denev²
¹ Technical University of Gabrovo
² University of Food Technologies

Study of physico-chemical indicators of the waters in the local water sources of the Gabrovo companies
Pencho Stoychev
Technical University of Gabrovo

Active reaction, electrical conductivity and drinking water hardness in Gabrovo
Pencho Stoychev
Technical University of Gabrovo

Use of water quality index to assess the pollution levels of Anadere stream basin (Thrace Region, Turkey)
Cem Tokatlı
Trakya University, Evrenos Gazi Campus, İpsala Vocational School

An investigation on the ammonium accumulations in water of Meriç – Ergene river basin (Turkey)
Cem Tokatlı
Trakya University, Evrenos Gazi Campus, İpsala Vocational School

Evaluation of water qualities of Dam Lakes located in Edirne province as drinking water by using water quality index
Cem Tokatlı
Trakya University, Evrenos Gazi Campus, İpsala Vocational School

International Scientific Conference “UNITECH 2020” – Gabrovo
An application of a simple ecological indicator of freshwater quality assessment: a case study of Havsa Creek in Turkey
Cem Tokath
Trakya University, Evrenos Gazi Campus, İpsala Vocational School

Ecological monitoring of modular wastewater treatment plant
Blagovesta Midyurova¹, Katia Ivanova²
¹ Prof. Dr Asen Zlatarov University
² Aitos Municipally

Flexible electromagnetic radiation absorbers based on allotropic carbon forms
Elena S. Belousova, Olga V. Boiprav, Bogdan I. Dumchev, Al-Mahdawi M.S.Kh.
Belarusian University of Informatics and Radioelectronics

Layered oxide and carbon containing composite materials for electromagnetic radiation absorbers for providing integrity of information processed by the computers
Olga V. Boiprav¹, Natalia A. Pevneva², Natalia V. Bogush³, Elena S. Belousova⁴, Hesham Ayad⁵
¹ Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
² Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
³ Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
⁴ Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus
⁵ Zawia University, Libya
Theoretical investigation of metallic contacts under inhomogeneous conditions
Deniz Eksi
Vacational School of Health, Yeni Yuzyl University, Istanbul, 34010, Turkey

The expectation value of 2P excited state of electron- hydrogenic donor impurity in a GAAS/GA1-XALXAS spherical quantum DOT
Ali Ihsan Mese
Department of Physics, Trakya University, Edirne-22030, Turkey

The effect of cooling rate on the crystallization process of liquid rhodium: molecular dynamics simulations
Murat Celtek¹, Unal Domekeli², Sedat Sengul²
¹Faculty of Education, Trakya University, 22030, Edirne - TURKEY
²Dept. of Physics, Trakya University, 22030, Edirne - TURKEY

Investigation of the melting process of Ni₃Al alloy by molecular dynamic simulations method
Murat Celtek¹, Sedat Sengul² and Unal Domekeli²
¹Faculty of Education, Trakya University, 22030, Edirne - TURKEY
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Molecular dynamics simulations of the pressure effect on the melting point of HCP beryllium
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Size effect on the mechanical properties of HCP be nanowires in tensile deformation
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Melting behavior of Pb nanowires: molecular dynamics simulations
Sedat SENGUL¹, Unal DOMEKELI¹ and Murat CELTEK²
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A molecular dynamics simulations study of dimension-dependent melting process of Pd nanostructures
Unal DOMEKELI¹, Murat CELTEK² and Sedat SENGUL¹
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Static and dynamic structural properties of liquid copper under high pressure
Unal DOMEKELİ¹, Sedat SENGUL¹ and Murat CELTEK²
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Investigation of the impact of speed in laser marking of products from steel 15Cr2
Nikolay Angelov
Technical University of Gabrovo

Investigation of the impact of power density and frequency for laser marking of products of structural steel 45G
Nikolay Angelov
Technical University of Gabrovo

Gamma-spectrometric analysis of plant samples collected from Shumen plateau and Rhodope mountains
Nina Arhangelova¹, Seniha Salim¹, Hristo Hristov¹, Borislaba Pavlova¹, Daniela Nedeva², Zheni Dimitrova¹
¹Shumen University “Konstantin Preslavsky”
²Technical University of Gabrovo

Allelopathic activity and content of radionuclides of calendula officinalis L. (asteraceae)
Borislaba Pavlova, Hristo Hristov, Seniha Salim, Zheni Dimitrova, Nina Arhangelova
Shumen University “Konstantin Preslavsky”