

# CONTENTS

## **PLENARY REPORT**

<b>MODERN LASERS AND THEIR APPLICATIONS IN INDUSTRY .....</b>	<b>23</b>
<b>Stanislav Němeček,</b> <i>University of West Bohemia, Czech Republic</i>	

## **VOLUME I**

### **ELECTRICAL ENGINEERING**

<b>ANALYSIS OF THE SHADING EFFECT OF THIN LAYER CADMIUM TELLURIDE PHOTOVOLTAIC PANELS ON THEIR ELECTRICAL PERFORMANCE.....</b>	<b>31</b>
<b>Emil Stanev, Ivaylo Stoyanov</b> <i>Department of Electric Power Distribution and Electrical Equipment</i> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>STUDY OF THE LED LIGHTING FLICKER FOR INDOOR APPLICATION .....</b>	<b>36</b>
<b>Milko Yovchev</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>CONSIDERATION OF BIOMEDICAL FACTORS WHEN CALCULATING ARCHITECTURAL AND ARTISTIC LIGHTING.....</b>	<b>42</b>
<b>Pylyp Hovorov<sup>1</sup>, Plamen Tsankov<sup>2</sup>, Anastasiia Kindinova<sup>1</sup></b> <sup>1</sup> <i>OM Beketov National University of Urban Economy in Kharkiv</i> <sup>2</sup> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>THEORETICAL MODEL OF A HALL ELEMENT INTELLIGENT SENSOR USING VIRTUAL INSTRUMENTS .....</b>	<b>48</b>
<b>Dimitar Georgiev, Anatoliy Aleksandrov, Dobroslav Dankov, Prodan Prodanov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>TEMPERATURE AND FREQUENCY CHARACTERISTICS OF FERROCERAMICS BaTi<sub>0.9</sub>Sn<sub>0.1</sub>O<sub>3</sub>.....</b>	<b>53</b>
<b>Ivaylo Lazarov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>ELECTRICAL SIZING OF A RECIPROCATING COMPRESSOR .....</b>	<b>57</b>
<b>Svilen Rachev, Lyubomir Dimitrov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>ANALYSIS OF DATA FROM THE OPERATION OF ELECTRIC ARC FURNACES .....</b>	<b>62</b>
<b>Svilen Rachev</b> <i>Technical University of Gabrovo, Bulgaria</i>	

<b>PHOTOVOLTAIC MODULES SOILING DURING HEATING SEASON IN NIŠ, SERBIA .....</b>	<b>68</b>
<b>Ivana Radonjić<sup>1</sup>, Lana Pantić<sup>1</sup>, Tomislav Pavlović<sup>1</sup>, Dragoljub Mirjanić<sup>2</sup>, Darko Divnić<sup>2</sup></b>	
<i><sup>1</sup>University of Niš, Faculty of Sciences and Mathematics, Department of Physics, Višegradaska 33, 18000 Niš, Serbia</i>	
<i><sup>2</sup>Academy of Sciences and Arts of the Republic of Srpska, Bana Lazarevića 1, 78000 Banja Luka, Republic of Srpska</i>	
<b>A REVIEW OF IoT BASED PHOTOVOLTAIC MONITORING SYSTEM APPLICATIONS.....</b>	<b>73</b>
<b>Stefan Đorđević<sup>1</sup>, Marko Krstić<sup>1</sup>, Lana Pantić<sup>1</sup>, Ivana Radonjić<sup>1</sup>, Tomislav Pavlović<sup>1</sup></b>	
<i><sup>1</sup>University of Niš, Faculty of Sciences and Mathematics, Department of Physics, Višegradaska 33, 18000 Niš, Serbia</i>	
<b>QUICK ANALYSIS OF THE DANGER FROM STATIC ELECTRICITY .....</b>	<b>79</b>
<b>Peter Kolev Petrov, Krasimir Marinov Ivanov, Georgi Tsonev Velev</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>DETERMINATION OF THE MAXIMUM POWER OF POWER PLANTS FROM RENEWABLE ENERGY SOURCES IN 35 KV NETWORKS .....</b>	<b>82</b>
<b>Krasimir Marinov Ivanov, Peter Kolev Petrov, Georgi Tsonev Velev</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>ANALYSIS OF THE ANNUAL PERFORMANCE OF PHOTOVOLTAIC SYSTEMS WITH MonoSi, CdTe AND CIGS PV MODULES .....</b>	<b>88</b>
<b>Plamen Tsankov, Ivaylo Lazarov</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>LOW POWER ELECTRIC MOTORS - DIRECTIONS OF DEVELOPMENT AND COMPARATIVE ANALYSIS .....</b>	<b>93</b>
<b>Dimitrina Koeva</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>GRAPHICAL REPRESENTATION OF BASIC ELECTRICAL POWER QUANTITIES MEASURED WITH POWER LOGIC PM5000 SERIES .....</b>	<b>98</b>
<b>Marko Rosić, Uroš Pešović</b>	
<i>University of Kragujevac, Faculty of Technical Sciences Čačak, Serbia</i>	



## ELECTRONICS AND SENSORS TECHNICS

<b>A SIMPLE LOW COST FUNCTION GENERATOR CONTROLLED BY ANDROID APPLICATION .....</b>	<b>105</b>
<b>Nikola Žorić<sup>1</sup>, Aleksandar Žorić<sup>1</sup>, Siniša Ilić<sup>1</sup>, Bojan Jovanović<sup>2</sup></b>	
<i><sup>1</sup>Faculty of technical sciences - University of Priština, Serbia</i>	
<i><sup>2</sup>Kosovo and Metohija Academy of applied studies-Department Uroševac, Serbia</i>	
<b>CLARIFICATION OF UTILIZED MEASUREMENT CIRCUITS FOR PIEZOELECTRIC VIBRATIONAL HARVESTERS.....</b>	<b>110</b>
<b>Rumyana Stoyanova, Dimo Kolev, Velimira Todorova</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	

<b>RADIOMETRIC METHOD OF RESEARCHING THE EMISSION PROPERTIES OF BIO-OBJECTS.....</b>	116
<b>Oleksiy Yanenko<sup>1</sup>, Kostiantyn Shevchenko<sup>1</sup>, Vasyl Kuz<sup>2</sup>, Mikhail Prokofiev<sup>3</sup>, Sergey Peregudov<sup>1</sup></b>	
<sup>1</sup> <i>Igor Sikorsky Kyiv Polytechnic Institute</i>	
<sup>2</sup> <i>Ternopil Ivan Puluj National Technical University</i>	
<sup>3</sup> <i>Vasyl Stus Donetsk National University</i>	
<b>MAXIMUM POWER POINT TRACKING BASED ON PERTURB AND OBSERVATION ALGORITHM COMBINED WITH AQUILIA OPTIMIZER ALGORITHM FOR THERMOELECTRIC GENERATORS.....</b>	120
<b>Mehmet Ali Üstüner<sup>1</sup>, Hayati Mamur<sup>1</sup>, Sezai Taşkın<sup>1</sup></b>	
<sup>1</sup> <i>Manisa Celal Bayar University, Department of Electrical and Electronics Engineering, Manisa, Turkey</i>	
<b>EFFECT OF LOAD VARIATIONS ON MAXIMUM POWER POINT TRACKING WITH INCREMENTAL CONDUCTANCE METHOD FOR NON-ISOLATED BOOST CONVERTERS IN THERMOELECTRIC GENERATORS.....</b>	124
<b>Mehmet Ali Üstüner<sup>1</sup>, Hayati Mamur<sup>2</sup>, Sezai Taşkın<sup>3</sup></b>	
<sup>1,2,3</sup> <i>Manisa Celal Bayar University, Department of Electrical and Electronics Engineering, Manisa, Turkey</i>	
<b>IMPLEMENTATION OF THE HARDWARE MODULE FOR IMAGE SKELETONIZATION SYSTEM.....</b>	128
<b>Jana Janković</b>	
<i>Faculty of Technical Sciences University of Novi Sad</i>	
<b>PROCESSING OF THE PULSE SIGNALS PERIODS.....</b>	134
<b>Perišić Đurđe, Željko Gavrić, Vanja Mišković</b>	
<i>Faculty of Information Technology, Slobomir P University, Slobomir, BiH</i>	
<b>APPLICATION OF SiC AND GaN TRANSISTORS IN HIGH-FREQUENCY INVERTER CIRCUITS FOR INDUCTION HEATING.....</b>	139
<b>Petko Stefchov Marinov</b>	
<i>Department of Electronics, Faculty of Electrical Engineering and Electronics Technical University of Gabrovo, Bulgaria</i>	
<b>DEVELOPMENT OF A MATHEMATICAL MODEL OF A TRIAXIAL INTERPOLATION FOR A CNC MACHINE IMPLEMENTED IN CONTROL SOFTWARE.....</b>	146
<b>Petar Panayotov, Goran Goranov</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>CONVERTERS WITH ENERGY DOSING BY INDUCTANCE.....</b>	151
<b>Desislav Iliev, Nikolay Madzharov</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>ENERGY STORAGE CHARGING MODULE WITH DIGITAL CONTROL.....</b>	155
<b>Ivan Stefanov, Dimitar Arnaudov</b>	
<i>Technical University of Sofia, Bulgaria</i>	
<b>MOBILE CONTACTLESS AMMETER.....</b>	160
<b>G.N. Velichkov, S.V. Lozanova</b>	
<i>Institute of Robotics at Bulgarian Academy of Sciences “Acad. G. Bonchev” Str., Bl.2, Sofia 1113, Bulgaria</i>	

<b>SENSOR SYSTEM FOR DETERMINING THE DEFORMATION STATE OF ROCK MASSIVES .....</b>	<b>165</b>
<b>M. L. Ralchev, S. V. Lozanova</b>	
<i>Institute of Robotics at Bulgarian Academy of Sciences “Acad. G. Bonchev” Str., Bl.2, Sofia 1113, Bulgaria</i>	

## COMMUNICATION ENGINEERING AND TECHNOLOGIES

<b>TRAFFIC INFORMATION ANALYSIS USING DEEP LEARNING ARTIFICIAL NEURAL NETWORKS .....</b>	<b>173</b>
<b>Ivelina Stefanova Balabanova, Teodora Valentinova Zhorova</b>	
<i>Department of Communications Equipment and Technologies Technical University of Gabrovo</i>	

<b>TESTING THE EFFECTIVENESS OF THE CANNY ALGORITHM FOR EDGE.....</b>	<b>179</b>
<b>Bojan Prlincevic<sup>1</sup>, Zoran Milivojevic<sup>2</sup>, Dijana Kostic<sup>2</sup></b>	
<sup>1</sup> <i>Kosovo and metohy academy of Applied studies, Leposavic, Serbia</i>	
<sup>2</sup> <i>Academy of Applied Technical and Preschool Studies Nis, Serbia</i>	

<b>THE EVALUATION QUALITY OF THE SPEECH INTELLIGIBILITY IN THE ORTHODOX CHURCH "HOLI GREAT MARTYR PROCOPIUS" IN KATUN.....</b>	<b>184</b>
<b>Zoran Milivojević<sup>1</sup>, Violeta Stojanović<sup>2</sup></b>	
<sup>1,2</sup> <i>The Academy of Applied Technical and Preschool Studies - Department Niš, Serbia</i>	

<b>STATE AND DEVELOPMENT OF TELECOMMUNICATION SERVICES IN BULGARIA .....</b>	<b>190</b>
<b>Aysun Ahmed<sup>1</sup>, Stanimir Sadinov<sup>1</sup></b>	
<sup>1</sup> <i>Technical University of Gabrovo, Bulgaria</i>	

<b>FILTER SIMULATION FOR MULTI-PHASE CURRENT SENSOR WITH INTEGRATED NOISE COMPENSATION FOR ELECTRIC VEHICLES.....</b>	<b>196</b>
<b>Ivaylo Stoyanov<sup>1</sup>, Teodor Iliev<sup>2</sup>, Grigor Mihaylov<sup>3</sup></b>	
<sup>1</sup> <i>University of Ruse, Department of Electrical Power Engineering, Ruse, Bulgaria</i>	
<sup>2</sup> <i>University of Ruse, Department of Telecommunication, Ruse, Bulgaria</i>	
<sup>3</sup> <i>University of Telecommunications and Post, Department of Telecommunication, Sofia, Bulgaria</i>	

<b>EXAMPLE DESIGN, CONSTRUCTION AND OPERATIONAL MEASUREMENTS OF A PASSIVE OPTICAL NETWORK USING LOG TECHNOLOGY.....</b>	<b>200</b>
<b>Stanimir Sadinov</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	

<b>SURVEY AND ASSESSMENT OF THE RANGE AND QUALITY OF WIRELESS RADIO COVERAGE IN A LORAWAN COMMUNICATION NETWORK .....</b>	<b>206</b>
<b>Nikolay Manchev</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	

<b>ANALYSIS OF SC, EGC AND MRC MACRO DIVERSITY SYSTEMS .....</b>	<b>212</b>
<b>Borivoje Milosevic<sup>1</sup>, Dusan Regodic<sup>1</sup>, Slobodan Obradovic<sup>2</sup></b>	
<i><sup>1</sup>University MB, Belgrade, Serbia</i>	
<i><sup>2</sup>ITS, Belgrade, Serbia</i>	
<b>RECOGNITION OF FINGERPRINTS BY DISCRETE COSINE TRANSFORM AND ARTIFICIAL INTELLIGENCE .....</b>	<b>217</b>
<b>Ivelina Stefanova Balabanova, Kristina Maksimova Sidorova</b>	
<i>Department of Communications Equipment and Technologies</i>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>MODELING AND RELIABILITY ASSESSMENT OF LORAWAN NETWORKS .....</b>	<b>222</b>
<b>Krasen Angelov<sup>1</sup>, Plamen Tashev<sup>1</sup>, Panagiotis Kogias<sup>2</sup></b>	
<i><sup>1</sup>Technical University of Gabrovo, Bulgaria</i>	
<i><sup>2</sup>International Hellenic University - Kavala Campus, Greece</i>	
<b>APPLICATION OF LORA IN IOT HOME AUTOMATION PLATFORM .....</b>	<b>228</b>
<b>Krasen Angelov, Nikolay Manchev, Stanimir Sadinov, Michail Angelakis</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>COMPARATIVE ANALYSIS OF PRECISION OF SINE SIGNALS INTERPOLATION USING OF THE FIFTH AND SEVENTH ORDER POLYNOMIAL INTERPOLATION KERNELS .....</b>	<b>234</b>
<b>Nataša Savić<sup>1</sup>, Zoran Milivojević<sup>1</sup>, Bojan Prlinčević<sup>2</sup></b>	
<i><sup>1</sup>Academy of Applied Technical and Preschool Studies, Niš, Serbia</i>	
<i><sup>2</sup>Kosovo and Metohija Academy of Applied Studies, Leposavić, Serbia</i>	
<b>SIMULATION MODEL OF A RADIO FREQUENCY AMPLIFIER FOR OPERATING FREQUENCIES OVER 1 GHz.....</b>	<b>239</b>
<b>Miroslav Tomov<sup>1</sup>, Panagiotis Kogias<sup>2</sup>, Michail Malamatoudis<sup>2</sup></b>	
<i><sup>1</sup>Technical University of Gabrovo, Bulgaria</i>	
<i><sup>2</sup>Department of Physics International Hellenic University, Kavala, Greece</i>	
<b>USING GEOSERVER AND POSTGRESFOR CHANGE DETECTION OF SATELITE IMAGES .....</b>	<b>244</b>
<b>Denis Byalev<sup>1</sup>, Egnar Özdikililer<sup>1,2</sup></b>	
<i><sup>1</sup>University of Telecommunications and Post, Sofia, Bulgaria</i>	
<i><sup>2</sup>Istanbul Technical University, Faculty of Aeronautics and Astronautics, Istanbul, Turkey</i>	
<b>DEVELOPMENT A TAG TEMPLATE ENGINE EXTENTION WITH PHP .....</b>	<b>249</b>
<b>Egnar Ozdikililer</b>	
<i>Istanbul Technical University, Faculty of Aeronautics and Astronautics, Istanbul, Turkey</i>	

**COMPUTER SYSTEMS, COMPUTER TECHNOLOGIES  
AND INFORMATION SECURITY**

<b>GENETIC ALGORITHMS PERFORMANCE IMPROVEMENT IN SLOWLY- CALCULATED FITNESS FUNCTIONS.....</b>	<b>255</b>
<b>Todor Balabanov</b>	
<i>Institute of Information and Communication Technologies</i>	
<i>Bulgarian Academy of Sciences</i>	

<b>LIBRE CALC PERFORMANCE IN OPTIMIZATION OF MULTIDIMENSIONAL NON-LINEAR FUNCTIONS .....</b>	<b>260</b>
<b>Todor Balabanov</b> <i>Institute of Information and Communication Technologies Bulgarian Academy of Sciences</i>	
<b>EVALUATION OF ELECTRIC VEHICLES USING THE SIMPLIFIED WISP METHOD .....</b>	<b>265</b>
<b>Branislav Ivanov, Dragisa Stanujkic</b> <i>University of Belgrade, Technical Faculty in Bor, Vojske Jugoslavije 12, 19210 Bor, Serbia</i>	
<b>COMPARATIVE ANALYSIS OF THE QUALITY OF DATA OBTAINED FROM INTERNET SEARCH ENGINES .....</b>	<b>271</b>
<b>Živković Miloš<sup>1</sup>, Blagojević Marija<sup>2</sup>, Stanišević Ilja<sup>1</sup></b> <i><sup>1</sup>Western Serbia Academy of Applied Studies, department Valjevo, Serbia <sup>2</sup>Faculty of Technical Science Čačak, Serbia</i>	
<b>MEASUREMENT OF THE INTERNET IMPACT ON DBMS RESPONSE SPEED .....</b>	<b>277</b>
<b>Živković Miloš<sup>1</sup>, Stanišević Ilja<sup>1</sup>, Obradović Slobodan<sup>2</sup>, Petrović Đorđe<sup>1</sup></b> <i><sup>1</sup>Western Serbia Academy of Applied Studies, department Valjevo, Serbia <sup>2</sup>Information Technology School Belgrade, Serbia</i>	
<b>A WEB-BASED SYSTEM FOR REMOTE ACCESS TO FPGA DEVELOPMENT HARDWARE .....</b>	<b>284</b>
<b>Ivan Panayotov, Petar Minev</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>MICROSERVICE FOR CREATING GEOFENCES .....</b>	<b>290</b>
<b>Victoria Velkova, Rosen Ivanov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>MODELING DIALOGUE IN AUTOMATED DESIGN SYSTEMS .....</b>	<b>295</b>
<b>V. Kukenska, P. Minev, I. Varbov, M. Dinev</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>CONTROLLER FOR ULTRASONIC MEASUREMENT OF WIND SPEED AND DIRECTION .....</b>	<b>300</b>
<b>Hristo Kilifarev</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>COMPARATIVE ANALYSIS OF VIDEO EFFECTS IN AUDIO-VISUAL PRODUCTION.....</b>	<b>306</b>
<b>Ivanka Valova</b> <i>Faculty of Journalism and Mass Communication Educational Television Studio Sofia University “St. Kliment Ohridski”, Bulgaria</i>	
<b>LORA AND ZIGBEE SENSOR NETWORK DATA STORING SYSTEM .....</b>	<b>312</b>
<b>Diyan Dinev, Aydan Haka</b> <i>Technical University of Varna, Bulgaria</i>	
<b>USING THE PRINCIPLE OF DECOMPOSITION IN FUNCTIONAL AND STRUCTURAL DESIGN .....</b>	<b>318</b>
<b>V. Kukenska, M. Dinev, P. Minev, I. Varbov</b> <i>Technical University of Gabrovo, Bulgaria</i>	

<b>PROGRAMMING FOR TOUCH-SCREEN DISPLAYS USING RASPBERRY PI AND KIVY LIBRARY .....</b>	<b>324</b>
<b>Delyan Genkov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>CREATING A VIRTUAL PRIVATE NETWORK USING WIREGUARD.....</b>	<b>329</b>
<b>Delyan Genkov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>DETERMINING AN EFFECTIVE SET OF TIME SERIES DATA PARAMETERS SUITABLE FOR IDENTIFYING SECURITY INCIDENTS.....</b>	<b>334</b>
<b>Vasyl Komarov, Dmitrii Chernov, Vladimir Krizhanovski</b> <i>Vasyl’ Stus Donetsk National University</i>	



<b>A SYSTEM FOR GATHERING AND VISUALIZATION OF AIR QUALITY DATA FROM A GEO-REFERENCED MULTI-SENSOR GAS-SENSING HEAD.....</b>	<b>341</b>
<b>Kamen Boyadzhiev, Stefan Ivanov</b> <i>Department of Automation, Information and Control Systems</i> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>INVESTIGATION OF THE TEMPERATURE INFLUENCE ON THE CHARACTERISTICS OF HUMIDITY SENSOR ELEMENTS BASED ON Ti-Si-O-Ce-Zn-Cu THIN FILMS .....</b>	<b>346</b>
<b>Nedyu Nedev<sup>1</sup>, Zvezditzia Nenova<sup>1</sup>, Stephan Kozhukharov<sup>2</sup>, Toshko Nenov<sup>1</sup></b> <sup>1</sup> <i>Technical University of Gabrovo, Bulgaria</i> <sup>2</sup> <i>University of Chemical Technology and Metallurgy, Bulgaria</i>	
<b>ACQUIRING DATA FOR CHEESE AGING USING GAS SENSORS.....</b>	<b>350</b>
<b>Stefan Ivanov, Todor Todorov, Elena Monova</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>DEVELOPMENT OF ARTIFICIAL NEURAL NETWORK FOR CLASSIFICATION OF CHEESE .....</b>	<b>354</b>
<b>Stefan Ivanov, Todor Todorov, Elena Monova</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>ANALYSIS OF PID CONTROL SYSTEM USING EXPERIMENT SET FOR UNDERGRADUATE ENGINEERING STUDENTS.....</b>	<b>359</b>
<b>Ozgun Mercanlı, Hilmi Kuscü</b> <i>Trakya University, Department of Mechanical Engineering, Engineering Faculty,</i> <i>Edirne/Turkey</i>	
<b>DEVELOPMENT OF A PLC BASED EXPERIMENTAL SETUP FOR UNDERSTANDING CONTROL AND AUTOMATION APPLICATIONS .....</b>	<b>364</b>
<b>Fıgan DALMIŞ</b> <i>Namik Kemal University, Vocational School of Technical Sciences, Turkey</i>	

<b>DESIGN OF SYNCHRONIZATION SCHEME FOR TWO NON-IDENTICAL CHAOTIC SYSTEMS</b> .....	368
<b>Dragomir Chantov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>SYNCHRONIZATION OF WANG CHAOTIC MODEL BY MEANS OF ONE-VARIABLE COUPLING</b> .....	374
<b>Dragomir Chantov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>LABORATORY MULTI-AGENT TRAFFIC MANAGEMENT SYSTEM</b> .....	380
<b>Stanimir Yordanov, Georgi Mihalev, Hristina Stoycheva, Valentin Vladimirov</b> <i>Technical University of Gabrovo, Bulgaria</i>	

## VOLUME II



### TECHNOLOGIES IN MECHANICAL ENGINEERING AND DESIGN OF MACHINES AND INSTRUMENTS

<b>CURRENT STATUS AND DEVELOPMENT PROSPECTS OF MOTOR-SPINDLES FOR MACHINE TOOLS</b> .....	31
<b>Yurii Kuznietsov<sup>1</sup>, Ľubomír Šooš<sup>2</sup>, Vasyl Shynkarenko<sup>1</sup>, Oleksandr Shevchenko<sup>1</sup>, Oksana Yurchyshyn<sup>1</sup>, Anna Shymanska<sup>1</sup>, Viktoriia Kotliarova<sup>1</sup></b> <sup>1</sup> <i>Igor Sikorsky Kyiv Polytechnic Institute (Ukraine)</i> <sup>2</sup> <i>Slovak University of Technology in Bratislava (Slovak Republic)</i>	
<b>SOFT PVC COMPOUNDING EXTRUDER DESIGN</b> .....	37
<b>Beyza AVCI<sup>1</sup>, Ibrahim Savas DALMIS<sup>2</sup>, Serdar Osman YILMAZ<sup>2</sup></b> <sup>1</sup> <i>DOMEKS Machinery Ltd. Design Center, Turkey</i> <sup>2</sup> <i>Tekirdag Namik Kemal University, Corlu Engineering Faculty, Mechanical Engineering Department, Turkey</i>	
<b>A PROTOTYPE CHARPY AND IZOD IMPACT TESTER DESIGN AND IMPACT TEST ANALYSIS OF DIFFERENT ALUMINUM ALLOYS</b> .....	44
<b>Mustafa UNAL<sup>1</sup>, Ibrahim Savas DALMIS<sup>2</sup></b> <sup>1</sup> <i>YKK Metal and Plastic Products Industry and Trade Inc., Turkey</i> <sup>2</sup> <i>Tekirdağ Namik Kemal University, Çorlu Engineering Faculty, Mechanical Engineering Department, Turkey</i>	
<b>CURRENT STATUS AND DEVELOPMENT PROSPECTS OF MOTOR-SPINDLES FOR MACHINE TOOLS</b> .....	49
<b>Yurii Kuznietsov<sup>1</sup>, Ľubomír Šooš<sup>2</sup>, Vasyl Shynkarenko<sup>1</sup>, Oleksandr Shevchenko<sup>1</sup>, Oksana Yurchyshyn<sup>1</sup>, Anna Shymanska<sup>1</sup>, Viktoriia Kotliarova<sup>1</sup></b> <sup>1</sup> <i>Igor Sikorsky Kyiv Polytechnic Institute (Ukraine)</i> <sup>2</sup> <i>Slovak University of Technology in Bratislava (Slovak Republic)</i>	

<b>PROCESSING EFFICIENCY RESEARCH ON CNC LATHES.....</b>	<b>55</b>
<b>Kalin Krumov</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>PROCESSING OF COMPLEX DETAILS WITH VARIABLE CUTTING MODES IN THE CONDITION OF PARTIAL AUTOMATION.....</b>	<b>60</b>
<b>Kalin Krumov</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>3D SIMULATION AND RESIDUAL STRESS ANALYSIS OF JOINING AA7075 ALLOY SHEET WITH LASER WELDING METHODS .....</b>	<b>67</b>
<b>Cenk MISIRLI, Isik CETINTAV</b>	
<i>Trakya University, Turkey</i>	
<b>ANALYSIS OF THE POSSIBILITIES FOR REDUCING ENVIRONMENTAL POLLUTION THROUGH THE USE OF BIOPLASTICS.....</b>	<b>72</b>
<b>Emil Velev</b>	
<i>Paisii Hilendarski University of Plovdiv, Bulgaria</i>	
<b>ANALYSIS OF TAPPING TORQUE STUDIES WITH DIFFERENT TYPES OF TAPS.....</b>	<b>78</b>
<b>Hristo Radev, Hristian Mitev, Hristo Yakimov</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>APPLICATION OF FRACTIONAL FACTORIAL DESIGN FOR ANALYSIS OF CUTTING ENERGY IN TURNING.....</b>	<b>83</b>
<b>Milan Trifunović, Miloš Madić</b>	
<i>University of Niš, Faculty of Mechanical Engineering in Niš, Niš, Serbia</i>	
<b>EFFECTS OF MACHINING PARAMETERS ON TOOL LIFE .....</b>	<b>89</b>
<b>Önder AYER<sup>1</sup>, Burak ÇOLAKOĞLU<sup>1,2</sup></b>	
<sup>1</sup> <i>Trakya University, Department of Mechanical Engineering, Turkey</i>	
<sup>2</sup> <i>Eksal Aluminum Extrusion Dies&amp;Tooling</i>	
<b>EFFECT OF HEAT-TREATMENT TEMPERATURE ON THE MECHANICAL AND MICROSTRUCTURAL PROPERTIES OF AISI 4140 STEEL.....</b>	<b>93</b>
<b>Gürkan İRSEL<sup>1</sup>, Betül Nur GÜZEY<sup>1</sup>, Bilgin KARA<sup>2</sup></b>	
<sup>1</sup> <i>Trakya University, Faculty of Engineering, Mechanical Engineering Department, Edirne / Turkey</i>	
<sup>2</sup> <i>İnan Makina Industry and Trade Inc., Tekirdağ / Turkey</i>	
<b>VECTOR-MATRIX APPROACH IN ANALYSIS OF RAPIER LOOM.....</b>	<b>101</b>
<b>Marin Jordanov Marinov</b>	
<i>Department of Industrial Design and Textile Engineering Technical University of Gabrovo, Bulgaria</i>	

# HYDRAULICS, PNEUMATICS AND HEAT ENGINEERING AND MECHATRONICS, METROLOGY AND QUALITY MANAGEMENT

<b>CHANGING THE GEOMETRIC PARAMETERS OF FIRE HOSES WHEN THEY TRANSPORT WATER .....</b>	<b>107</b>
<b>Stas S. V., Kolesnikov D. V., Bychenko A. O., Horenko L. M.</b> <i>Cherkasy Institute of Fire Safety named after Chernobyl Heroes of National University of Civil Defence of Ukraine</i>	
<b>EVALUATION OF FACTORS AFFECTING THE UNSTABILIZED FLOW OF ELECTRICALLY CONDUCTIVE LIQUIDS .....</b>	<b>113</b>
<b>Mamedov A. N., Murashchenko A. M., Yakhno O. M.</b> <i>National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”</i>	
<b>FEATURES OF DETERMINING THE CONVERSION OF ENERGY IN HYDRAULIC SYSTEMS .....</b>	<b>118</b>
<b>Dmytro Kostiuk, Igor Nochnichenko, Alona Murashchenko, Oleg Jakhno</b> <i>National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”</i>	
<b>EXPERIMENTAL EQUIPMENT FOR RESEARCHING THE EFFICIENCY OF THE COMPRESSED AIR ENERGY STORAGE SYSTEM .....</b>	<b>121</b>
<b>Oleksandr Haletskyi</b> <i>National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”</i>	
<b>GEROTOR PUMP OF VARIABLE PERFORMANCE.....</b>	<b>124</b>
<b>Oleksandr Haletskyi, Oleksandr Yukhymchuk</b> <i>National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”</i>	
<b>EFFECTS OF THE PROJECTILE POSITION INSIDE THE CARTRIDGE AND CARTRIDGE THICKNESS ON THE COOK-OFF .....</b>	<b>127</b>
<b>Çiğdem Susantez, Kamil Kahveci, Oktay Hacıhafızoğlu, Hilmi Kuşçu</b> <i>Trakya University Engineering Faculty Mechanical Engineering Department, Turkey</i>	
<b>VALVES AND DRIVE METHODS OF VALVES USED IN THE HYDRAULIC INDUSTRY.....</b>	<b>132</b>
<b>Hilmi KUSCU, Umut EREN</b> <i>Trakya University, Faculty of Engineering, Department of Mechanical Engineering, Edirne, Turkey</i>	
<b>FULLY AUTOMATIC SAMPLING AND DATA MONITORING AUTOMATION FOR WASTEWATER TREATMENT PLANTS .....</b>	<b>137</b>
<b>Aydin GULLU<sup>1</sup>, Emir OZTURK<sup>2</sup>, Mustafa ARDA<sup>2</sup></b> <i><sup>1</sup>Ipsala Vocatonal School Trakya University Edirne, Turkey</i> <i><sup>2</sup>Engineering Faculty Trakya University Edirne, Turkey</i>	
<b>INVESTIGATION OF SWARM ROBOT APPLICATIONS AND SWARM ROBOT EXPERIMENT PLATFORMS .....</b>	<b>141</b>
<b>Aydin GULLU<sup>1</sup>, Gurkan TUNA<sup>2</sup>, M. Ozan AKI<sup>1</sup>, Ozcan CETINKAYA<sup>3</sup>, Hilmi KUSCU<sup>4</sup></b> <i><sup>1</sup>Ipsala Vocatonal College Trakya University Edirne, Turkey</i> <i><sup>2</sup>Edirne Vocational School of Technical Sciences Trakya University Edirne, Turkey</i> <i><sup>3</sup>Kesan Vocatonal College Trakya University Edirne, Turkey</i> <i><sup>4</sup>Engineering Faculty Trakya University Edirne, Turkey</i>	

<b>IMPROVED RELIABILITY OF PSEUDORANDOM OPTICAL ROTARY ENCODER</b> .....	145
<b>Goran Miljković, Ivana Randelović, Dragan Denić, Milan Simić</b>	
<i>University of Niš, Faculty of Electronic Engineering, Aleksandra Medvedeva 14, 18000 Niš, Serbia</i>	

**SOCIAL SCIENCES AND HUMANITIES, ORGANIZATION AND MANAGEMENT, ENTREPRENEURSHIP AND ECONOMY, MATHEMATICS**

<b>EVALUATION OF THE INTELLECTUAL CAPITAL IMPACT ON THE COMPANY'S ATTRACTIVENESS</b> .....	151
<b>Rima Tamošiūnienė<sup>1</sup>, Monika Sajavičiūtė<sup>2</sup></b>	
<i><sup>1,2</sup> Vilnius Gediminas Technical University, Financial Engineering Department, Saulėtekio ave. 11, LT-10223, Vilnius, Lithuania</i>	

<b>ENTREPRENEURSHIP – AN IMPORTANT FACTOR FOR THE ECONOMIC DEVELOPMENT OF THE COUNTRY</b> .....	157
<b>Dobrin Ganchev, Milena Racheva</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	

<b>FINANCING OF HEALTHCARE INSTITUTIONS AS A SOCIAL NECESSITY AND CURRENT PRACTICE</b> .....	163
<b>Bojan Kocić<sup>1</sup>, Oliver Popović<sup>2</sup>, Nikola Vasić<sup>3</sup></b>	
<i><sup>1</sup>Toplica Academy of Applied Studies, Prokuplje, Serbia</i>	
<i><sup>2</sup>Toplica Academy of Applied Studies, Prokuplje, Serbia</i>	
<i><sup>3</sup>Belgrade Business and Arts Academy of Applied Studies, Belgrade, Serbia</i>	

<b>HEALTHCARE FINANCING THROUGH THE DEVELOPMENT OF MODERN INFORMATION SYSTEMS</b> .....	169
<b>Bojan Kocić<sup>1</sup>, Oliver Popović<sup>2</sup>, Nikola Vasić<sup>3</sup></b>	
<i><sup>1</sup>Toplica Academy of Applied Studies, Prokuplje, Serbia</i>	
<i><sup>2</sup>Toplica Academy of Applied Studies, Prokuplje, Serbia</i>	
<i><sup>3</sup>Belgrade Business and Arts Academy of Applied Studies, Belgrade, Serbia</i>	

<b>DIGITAL MARKETING CAMPAIGN AS A LEARNING TOOL ON CUSTOMER REQUIREMENTS IN PRODUCT DEVELOPMENT</b> .....	172
<b>Lidija Paunović, Sandra Milunović Koprivica</b>	
<i>University of Kragujevac, Faculty of Technical Sciences Čačak, Serbia</i>	

<b>PATENTS FOR ENVIRONMENTALLY SOUND TECHNOLOGIES IN THE FIELD OF USING WASTE HEAT</b> .....	178
<b>Ventsislava Aleksandrova Nikolova-Minkova</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	

<b>ENVIRONMENTAL TECHNOLOGY PATENTS IN EU FOR THE PERIOD 2010-2020</b> .....	184
<b>Ventsislava Aleksandrova Nikolova-Minkova</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	

<b>DIGITAL TRANSFORMATION OF SMALL AND MEDIUM-SIZED ENTERPRISES IN THE CONTEXT OF THE GREEN TRANSITION – A CONCEPTUAL FRAMEWORK</b> .....	190
<b>Veryana Boeva, Anton Antonov</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>STANDARDS FOR DIGITALIZATION AND DATA ARCHIVING</b> .....	195
<b>Sandra Milunovic Koprivica, Olga Ristic, Lidija Paunovic</b> <i>Faculty of Technical Sciences in Cacak, University of Kragujevac, Svetog Save 65, 32000 Cacak</i>	
<b>ANALYSIS OF LEADING CONCEPTS IN THE FIELD OF SOCIAL SERVICES AND BULGARIAN PRACTICE</b> .....	201
<b>Lilyana Rusanova</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>DYNAMICS OF DEMOGRAPHIC INDICATORS AND MORBIDITY OF SOCIALLY SIGNIFICANT DISEASES IN GABROVO REGION</b> .....	206
<b>Ivanka Stoyanova - Todorova</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>EMPIRICAL STUDY ON UNIVERSITY CURRICULUM SATISFACTION OF UNIVERSITY GRADUATES</b> .....	215
<b>Irina Todorova Todorova</b> <i>Technical University of Varna, Bulgaria</i>	
<b>THE PROBLEM OF RECOGNITION: MODERN SOCIO-PHILOSOPHICAL CONTEXT</b> .....	221
<b>Usov Dmytro</b> <i>Cherkasy Institute of Fire Safety named after Chornobyl Heroes of the National University of Civil Protection of Ukraine</i>	
<b>FAMILY FUNCTIONING, RISK AND PROTECTIVE FACTORS</b> .....	227
<b>Zhaneta Tsoneva</b> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>APPLICATION OF WOLFRAM MATHEMATICA IN THE TEACHING PROCESS CONCERNING THE TOPIC “EXTREMA OF FUNCTIONS IN TWO VARIABLES”</b> ....	232
<b>Valentina Todorova-Lazarova, Penka Ivanova</b> <i>Technical University of Gabrovo, Bulgaria</i>	



**EDUCATION TECHNOLOGIES**

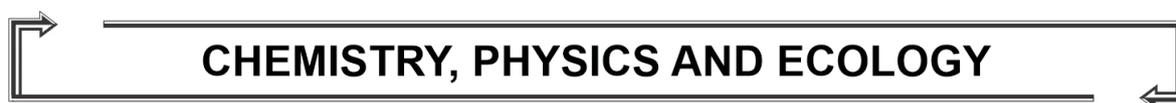
<b>INNOVATION METHODS IN PREVENTING OF EARLY SCHOOL LEAVING</b> .....	239
<b>Petar Rosenov Dimitrov</b>	
<b>EDUCATION THROUGH BETTER COMMUNICATION</b> .....	245
<b>Petar Rosenov Dimitrov</b>	

<b>IMPROVING THE STUDENTS' LEARNING OF OPTICS AND ATOMIC AND MOLECULAR PHYSICS BY COMPUTER-ASSISTED SCHOOL EXPERIMENTS .....</b>	<b>256</b>
<b>Fabien Kunis<sup>1</sup>, Konstantin Ilchev<sup>2</sup>, Milena Stoyanova<sup>3</sup>, Vesela Dimova<sup>3</sup>, Tsanislava Genova<sup>4</sup>, Stefan Valkov<sup>4,5</sup>, Christina Andreeva<sup>3,4</sup></b>	
<sup>1</sup> <i>High School 125 Prof. Boyan Penev, Sofia, Bulgaria</i>	
<sup>2</sup> <i>Private English Language School "Prof. Ivan Apostolov", Sofia, Bulgaria</i>	
<sup>3</sup> <i>Faculty of Physics, Sofia University "St. Kliment Ohridski", Sofia, Bulgaria</i>	
<sup>4</sup> <i>Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria</i>	
<sup>5</sup> <i>Technical University of Gabrovo, 4 H. Dimitar Str., 5300 Gabrovo, Bulgaria</i>	

<b>PECULIARITIES OF TEACHING SOCIAL-ECONOMIC DISCIPLINES IN VOCATIONAL COLLEGES OF UKRAINE DURING THE PERIOD OF MARTIAL STATUS.....</b>	<b>261</b>
<b>Yuliia Lastovets<sup>1</sup>, Valentina Ovod<sup>1</sup>, Natalia Zagorulko<sup>2</sup></b>	
<sup>1</sup> <i>Kyiv Electromechanical Professional College</i>	
<sup>2</sup> <i>Optical-Mechanical Professional College of Taras Shevchenko Kyiv National University</i>	

<b>ON MAKING USE OF MOODLE IN TEACHING ENGLISH TO FUTURE ENGINEERS .....</b>	<b>266</b>
<b>Nadezhda Slavova</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	

<b>THE IMPORTANCE OF VISUALIZATION IN THE PROCESS OF TRANSLATION OR TRANSLATION THROUGH VISUALIZATION .....</b>	<b>269</b>
<b>Nadezhda Slavova</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	



## CHEMISTRY, PHYSICS AND ECOLOGY

<b>TRACE – TOXIC ELEMENT ACCUMULATIONS IN WATER OF ATIKHISAR DAM LAKE (ÇANAKKALE, TÜRKİYE) .....</b>	<b>275</b>
<b>Cem Tokatlı</b>	
<i>Trakya University, Evrenos Gazi Campus, Laboratory Technology Program, İpsala, Edirne, Turkey</i>	

<b>MACRO – MICRO ELEMENT CONCENTRATIONS IN WATER OF SAZLIDERE DAM LAKE (İSTANBUL, TÜRKİYE) .....</b>	<b>280</b>
<b>Cem Tokatlı</b>	
<i>Trakya University, Evrenos Gazi Campus, Laboratory Technology Program, İpsala, Edirne, Turkey</i>	

<b>APPLICATION OF SONOCHEMISTRY FOR THE SYNTHESIS OF CAPRIC ALIPHATIC ESTERS.....</b>	<b>285</b>
<b>Dragomir Vasilev<sup>1</sup>, Nadezhda Petkova<sup>2</sup>, Panteley Denev<sup>2</sup></b>	
<sup>1</sup> <i>Technical University of Gabrovo, Bulgaria</i>	
<sup>2</sup> <i>University of Food Technologies, Plovdiv, Bulgaria</i>	

<b>APPLICATION OF CAPRATE ALIPHATIC ESTER AS BIO-PLASTICIZER AND BIO-ADDITIVE IN PLASTICS .....</b>	<b>289</b>
<b>Dragomir Vasilev<sup>1</sup>, Nadezhda Petkova<sup>2</sup>, Milka Atanasova<sup>1</sup>, Panteley Denev<sup>2</sup></b>	
<sup>1</sup> <i>Technical University of Gabrovo, Bulgaria</i>	
<sup>2</sup> <i>University of Food Technologies, Plovdiv, Bulgaria</i>	
<b>ENVIRONMENTAL MANAGEMENT SYSTEMS' EFFECTIVENESS OF ENTERPRISES IN DEVNYA MUNICIPALITY .....</b>	<b>292</b>
<b>Elena Valkova</b>	
<i>Technical University of Varna, Bulgaria</i>	
<b>ENVIRONMENTAL PERFORMANCE OF PADINA SETTLING BASIN.....</b>	<b>299</b>
<b>Elena Valkova</b>	
<i>Technical University of Varna, Bulgaria</i>	
<b>THE EFFECT ON INCOMPRESSIBLE STRIPS OF THE DISTANCE BETWEEN THE METALLIC GATES AND THE TWO-DIMENSIONAL ELECTRON SYSTEM.....</b>	<b>306</b>
<b>Deniz Eksi</b>	
<i>Vacational School of Health, Yeni Yuzyil University, Istanbul, 34010, Turkey</i>	
<b>A RESONANT TUNNELLING STRUCTURE OF GaAs ALLOYS.....</b>	<b>311</b>
<b>Sevket Erol OKAN<sup>1</sup>, Abdullah BILEKKAYA<sup>2</sup>, Saban AKTAS<sup>1</sup></b>	
<sup>1</sup> <i>Department of Physics, Trakya University, Edirne-Turkey</i>	
<sup>2</sup> <i>Department of Electronics, Edirne Vocational College of Technical Sciences, Trakya University, Edirne-Turkey</i>	
<b>SIZE EFFECT ON THE MECHANICAL PROPERTIES OF BCC TANTALUM NANOWIRES BY MOLECULAR DYNAMICS SIMULATIONS .....</b>	<b>315</b>
<b>Vildan GUDER</b>	
<i>Department of Physics, Faculty of Science, Trakya University, 22030 Edirne, Turkey</i>	
<b>THE OPTICAL ABSORPTION CHANGES IN TWO-STEP INFINITE SPHERICAL QUANTUM DOT .....</b>	<b>321</b>
<b>Sevket Erol Okan<sup>1,2</sup>, Hande Temel<sup>2</sup>, Abdullah Bilekkaya<sup>2,3</sup>, Figen Karaca Boz<sup>1,2</sup></b>	
<sup>1</sup> <i>Trakya University, Faculty of Science, Department of Physics, 22030 Edirne, Turkey</i>	
<sup>2</sup> <i>Trakya University, Institute of Science, 22030 Edirne, Turkey</i>	
<sup>3</sup> <i>Trakya University, Edirne Vocational College of Technical Sciences, 22100 Edirne, Turkey</i>	
<b>STRONTIUM UNDER HIGH PRESSURE AND DIFFERENT TEMPERATURE CONDITIONS: A MOLECULAR DYNAMICS SIMULATION STUDY .....</b>	<b>327</b>
<b>Murat Celtek<sup>1</sup>, Unal Domekeli<sup>2</sup>, Sedat Sengul<sup>2</sup></b>	
<sup>1</sup> <i>Faculty of Education, Trakya University, 22030, Edirne – Turkey</i>	
<sup>2</sup> <i>Dept. of Physics, Trakya University, 22030, Edirne – Turkey</i>	
<b>INVESTIGATION OF THE EFFECT OF COOLING RATE ON ATOMIC STRUCTURE OF LIQUID CALCIUM: A MOLECULAR DYNAMICS SIMULATION STUDY.....</b>	<b>333</b>
<b>Murat Celtek<sup>1</sup>, Sedat Sengul<sup>2</sup>, Unal Domekeli<sup>2</sup></b>	
<sup>1</sup> <i>Faculty of Education, Trakya University, 22030, Edirne – Turkey</i>	
<sup>2</sup> <i>Dept. of Physics, Trakya University, 22030, Edirne – Turkey</i>	

<b>THERMAL PROPERTIES OF ZINC NANOCRYSTALS: A COMPARISON STUDY USING THEORETICAL MODELS .....</b>	<b>339</b>
<b>Unal Domekeli<sup>1</sup>, Murat Celtek<sup>2</sup>, Sedat Sengul<sup>1</sup></b>	
<sup>1</sup> <i>Dept. of Physics, Trakya University, 22030, Edirne – Turkey</i>	
<sup>2</sup> <i>Faculty of Education, Trakya University, 22030, Edirne – Turkey</i>	
<b>A MOLECULAR DYNAMICS STUDY OF STRUCTURAL AND DYNAMIC PROPERTIES OF GOLD NANOPARTICLES WITH PALLADIUM COATING.....</b>	<b>345</b>
<b>Unal Domekeli<sup>1</sup>, Sedat Sengul<sup>1</sup>, Murat Celtek<sup>2</sup></b>	
<sup>1</sup> <i>Dept. of Physics, Trakya University, 22030, Edirne – Turkey</i>	
<sup>2</sup> <i>Faculty of Education, Trakya University, 22030, Edirne – Turkey</i>	
<b>INVESTIGATION OF THE MELTING PROCESS OF BCC IRON USING DIFFERENT INTERATOMIC POTENTIALS .....</b>	<b>351</b>
<b>Sedat Sengul<sup>1</sup>, Unal Domekeli<sup>1</sup>, Murat Celtek<sup>2</sup></b>	
<sup>1</sup> <i>Dept. of Physics, Trakya University, 22030, Edirne – Turkey</i>	
<sup>2</sup> <i>Faculty of Education, Trakya University, 22030, Edirne – Turkey</i>	
<b>EVOLUTION OF THE ATOMIC STRUCTURE OF CADMIUM IN THE HEATING AND COOLING PROCESS.....</b>	<b>357</b>
<b>Sedat Sengul<sup>1</sup>, Murat Celtek<sup>2</sup>, Unal Domekeli<sup>1</sup></b>	
<sup>1</sup> <i>Dept. of Physics, Trakya University, 22030, Edirne – Turkey</i>	
<sup>2</sup> <i>Faculty of Education, Trakya University, 22030, Edirne – Turkey</i>	
<b>VERIFYING THE REPEATABILITY OF AUTO MACH RESULTS WITH THE XVI SYSTEM.....</b>	<b>363</b>
<b>Nikolay Mutkurov<sup>1</sup>, Stanimir Radushev<sup>1</sup>, Virginia Payakova<sup>2</sup></b>	
<sup>1</sup> <i>Complex Oncology Center – Burgas, Radiation oncology department, Bulgaria</i>	
<sup>2</sup> <i>UMHAT" Dr. Georgi Stranski", Radiation oncology department, Bulgaria</i>	
<b>ELECTRON BEAM WELDING OF DISSIMILAR METALS AND ALLOYS.....</b>	<b>367</b>
<b>Darina Kaisheva<sup>1,2</sup>, Georgi Kotlarski<sup>1</sup>, Borislav Stoyanov<sup>3</sup>, Vladimir Dunchev<sup>3</sup>, Maria Ormanova<sup>1</sup>, Stefan Valkov<sup>1,3</sup></b>	
<sup>1</sup> <i>Academician Emil Djakov Institute of Electronics, Bulgarian Academy of Sciences, 72 Tzarigradsko Chausse Blvd, 1784 Sofia, Bulgaria</i>	
<sup>2</sup> <i>South-West University „Neofit Rilski“, 66 Ivan Michailov Str., 2700 Blagoevgrad, Bulgaria</i>	
<sup>3</sup> <i>Technical University of Gabrovo, 4 H. Dimitar Str., 5300 Gabrovo, Bulgaria</i>	
<b>USE OF INTERPOLATION AND EXTRAPOLATION METHODS IN THE LABORATORY PRACTICUM IN PHYSICS.....</b>	<b>373</b>
<b>Fatme Padikova, Daniela Nedeva, Nikolay Angelov</b>	
<i>Technical University of Gabrovo, Bulgaria</i>	
<b>RADIOACTIVITY IN ACHILLEA MILLEFOLIUM L. COLLECTED FROM TWO REGIONS IN BULGARIA.....</b>	<b>377</b>
<b>Nina Arhangelova<sup>1</sup>, Seniha Salim<sup>1</sup>, Daniela Nedeva<sup>2</sup>, Zheni Dimitrova<sup>1</sup></b>	
<sup>1</sup> <i>Konstantin Preslavsky University of Shumen, Bulgaria</i>	
<sup>2</sup> <i>Technical University of Gabrovo, Bulgaria</i>	
<b>RADIOACTIVITY IN THREE HERBS COLLECTED FROM REGION IN SHUMEN, BULGARIA.....</b>	<b>382</b>
<b>Nina Arhangelova<sup>1</sup>, Seniha Salim<sup>1</sup>, Daniela Nedeva<sup>2</sup>, Zheni Dimitrova<sup>1</sup></b>	
<sup>1</sup> <i>Konstantin Preslavsky University of Shumen, Bulgaria</i>	
<sup>2</sup> <i>Technical University of Gabrovo, Bulgaria</i>	

<b>LARGE HYDROPOWER PLANTS IN THE VLASINA MICROREGION .....</b>	<b>387</b>
<b>Andelina V. Marić Stanković<sup>1</sup>, Tomislav M. Pavlović<sup>1</sup>, Ivana S. Radonjić<sup>1</sup></b>	
<i><sup>1</sup>University of Niš, Faculty of Sciences and Mathematics, Višegradska 33, 18000 Niš, Serbia</i>	