

# **2016 24th Telecommunications Forum (TELFOR 2016)**

**Belgrade, Serbia  
22-23 November 2016**

**Pages 1-546**



**IEEE Catalog Number: CFP1698P-POD  
ISBN: 978-1-5090-4087-2**

**Copyright © 2016 by the Institute of Electrical and Electronics Engineers, Inc  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

**\*\*\* *This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1698P-POD
ISBN (Print-On-Demand):	978-1-5090-4087-2
ISBN (Online):	978-1-5090-4086-5

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# САДРЖАЈ CONTENTS

## SPECIAL SECTION

### ADVANCED WSNs (Wireles Sensor Networks) FOR AGRICULTULAR AND ENVIRONMENTAL APPLICATIONS (WSN)

SS.1.	Kraemer Rolf	
	Wireless Sensor Networks for Use in Agriculture: “Challenges and Potential Solutions” (Invited presentation)	
SS.2.	Stamenković Zoran, Randjić Siniša, Santamaria Ignacio, Pešović Uroš, Panić Goran, Tanasković Snežana	
	<u>Advanced Wireless Sensor Nodes and Networks for Agricultural Applications</u> <u>(Invited paper)</u>	1
SS.3.	Mendez Diego, Diaz Sergio, Kraemer Rolf	
	<u>Wireless Technologies for Pollution Monitoring in Large Cities and Rural Areas</u>	9
SS.4.	Simić Mitar, Stojanović Goran M., Manjakkal Libu, Zaraska Krzysztof	
	<u>Multi-Sensor System for Remote Environmental (Air and Water) Quality Monitoring</u>	15
SS.5.	Piotrowski Krzysztof, Sojka-Piotrowska Anna, Stamenkovic Zoran, Kraemer Rolf	
	<u>IHPNode Platform as a Base for Precision Farming and Remote Diagnosis in Agriculture</u>	19

## СЕКЦИЈА 1: ПОЛИТИКА, РЕГУЛАТИВА И УСЛУГЕ У ТЕЛЕКОМУНИКАЦИЈАМА (ПРУ)

### SECTION 1: POLICY, REGULATORY AND SERVICES IN TELECOMMUNICATIONS (PRS)

1.1.	Vasić Čedomir, Rančić Dejan	
	<u>Relocation of resources in road transportation based on the use of data from the GPS based systems (Invited paper)</u>	24
1.2.	Chernov Andrey V., Butakova Maria A., Vereskun Vladimir D., Kartashov Oleg O.	
	<u>Situation Awareness Service based on Mobile Platforms for Multilevel Intelligent Control System in Railway Transport</u>	29
1.3.	Atanasova Tatiana, Poryazov Stoyan, Saranova Emiliya	
	<u>Problems with quality enabling of information functions composition in smart buildings</u>	33
1.4.	Guclu Yildiz, Gozuacik Necip, Gul Ahmet	
	<u>Implementing Subscriber-Wide INAP Service in VoIP Switch</u>	37

1.5.	Hajdarevic Kemal, Allen Pat, Spremic Mario <u><a href="#">Proactive Security Metrics for Bring Your Own Device (BYOD) in ISO 27001 Supported Environments</a></u>	41
1.6.	Valjarević Aleksandar, Venter Hein, Petrović Ranko <u><a href="#">ISO/IEC 27043:2015 - Role and application</a></u>	45
1.7.	Radak Zlata, Radonjić Đogatović Vesna <u><a href="#">Customized charging option for business customers</a></u>	49
1.8.	Gabela Adnan <u><a href="#">Potencijal novih zona poslovanja za telekom operatore u regionu</a></u>	N/A
1.9.	Banović-Ćurguz Nataša, Ilišević Dijana <u><a href="#">Evolucija metrika u savremenom telekomunikacionom okruženju</a></u>	57
1.10.	Asanović Marko, Gospić Nataša <u><a href="#">Primjena preporuka za Green IT u lokalnim samoupravama</a></u>	61

## СЕКЦИЈА 2: ТЕЛЕКОМУНИКАЦИОНЕ МРЕЖЕ (ТМ) SECTION 2: TELECOMMUNICATIONS NETWORKS (TN)

2.1.	Krajanović Nenad <u><a href="#">Network topologies for achieving maximal all-terminal network availability (Invited paper)</a></u>	65
2.2.	Trpevski Igor, Kocarev Ljupco <u><a href="#">Greedy Reduction of Navigation Time in Random Search Processes</a></u>	70
2.3.	Veletić Mladen, Balasingham Ilangko <u><a href="#">The Neural Communication Network: A Brief Review on Neuromodeling and Neuroengineering</a></u>	74
2.4.	Sagatov Evgeny S., Samoilova Daria V., Sukhov Andrei M., Vinogradov Nikita I. <u><a href="#">Composite distribution for one-way packet delay in the global network</a></u>	78
2.5.	Redžović Hasan, Smiljanić Aleksandra, Savić Bogdan <u><a href="#">Performance Evaluation of Software Routers with VPN Features</a></u>	82
2.6.	Kitanov Stojan, Janevski Toni <u><a href="#">State of the Art: Fog Computing for 5G Networks</a></u>	86
2.7.	Poryazov Stoyan, Saranova Emiliya <u><a href="#">User-oriented, Overall Traffic and Time Efficiency Indicators in Telecommunications</a></u>	90
2.8.	Ninković Nemanja, Stojanović Mirjana <u><a href="#">Novel Approaches to Intradomain and Interdomain Quality of Service Enhancement (Invited paper)</a></u>	94
2.9.	Durković Srđan, Čiča Zoran <u><a href="#">Birkhoff-von Neumann Switch with Deflection Based Load Balancing</a></u>	102
2.10.	Vesović Mihailo, Smiljanić Aleksandra, Tomašević Milo <u><a href="#">Speeding Up IP Lookup Procedure in Software Routers by Means of Parallelization</a></u>	106

2.11.	Urgun Yilmaz, Kavak Adnan <a href="#"><u>SDN/NFV-based QoS Mechanism for Cellular Core Networks</u></a>	110
2.12.	Lim Seong-Jin, Chung Jaeho, Jang Jae-Seon <a href="#"><u>Uplink Scheduling Algorithm for Capacity Enhancement in LTE</u></a>	114
2.13.	Nikookar-Hamedani Pegah, Soleimani-Nasab Ehsan <a href="#"><u>Physical layer security in the presence of the Eavesdroppers in cooperative networks</u></a>	N/A
2.14.	Grčić Pukšec Dunja <a href="#"><u>Transforming telco service and resource provisioning</u></a>	122
2.15.	Veselinović Nenad, Milovanović Marijana, Vasiljević Biljana, Denić Saša <a href="#"><u>Napredne funkcionalnosti nove magistralne OTN/DWDM mreže Telekoma Srbija</u></a>	126
2.16.	Matic Vladimir <a href="#"><u>Using of post selection delay for evaluation of mixed communication network traffic properties (Invited presentation)</u></a>	130
2.17.	Al-Dahoud Ali, Fezari Mohamed, Belhouchet Fatma Zohra, Al-Rawashdeh Thamer A. <a href="#"><u>Remote Monitoring System for Solar Power Panels using Intelligent Sensors Network</u></a>	132
2.18.	Tomovic Slavica, Radusinovic Igor <a href="#"><u>Allocation algorithm for handling multiple applications in software-defined WSN</u></a>	136
2.19.	Samaras Nicholas <a href="#"><u>Using Basic MANET Routing Algorithms for Data Dissemination in Vehicular Ad Hoc Networks (VANETs)</u></a>	140
2.20.	Abbaspour-Asadollah Maryam, Soleimani-Nasab Ehsan <a href="#"><u>Performance Analysis of Dual-Hop Fixed-Gain AF Relaying Systems in Wireless Body Area Networks over Gamma Fading Channels</u></a>	144
2.21.	Alharthi Saad, Johnson Princy <a href="#"><u>Threshold Sensitive Heterogeneous LEACH Protocol for Wireless Sensor Networks</u></a>	148
2.22.	Enache Dragos, Chenaru Oana, Popescu Dan <a href="#"><u>Performance and Load Analysis for Remote Plant Connectivity Using GSM Communication</u></a>	152

**СЕКЦИЈА 3: РАДИО-КОМУНИКАЦИЈЕ (РК)**  
**SECTION 3: RADIO COMMUNICATIONS (RC)**

3.1.	Koprivica Mladen, Nešković Nataša, Nešković Aleksandar <u>IMPROVING THE EFFICIENCY OF METHODS FOR MEASUREMENT OF ELECTRIC FIELD STRENGTH IN THE VICINITY OF PUBLIC MOBILE SYSTEM BASE STATIONS</u> (Invited presentation)	156
3.2.	Ozduran Volkan, Soleimani-Nasab Ehsan, Yarman B. Siddik <u>Sum-Rate Based Opportunistic Relay Selection Method For A Dual-Hop Multiple Half/Full-Duplex Bi-directional Wireless Relaying Networks</u>	157
3.3.	Kurnaz Cetin, Korunur Engiz Begum, Albayrak Zafer Emre <u>Determination of TV White Space Spectrum Availability in Samsun Turkey</u>	161
3.4.	Domazetović Bojan, Kočan Enis, Mihovska Albena <u>Performance evaluation of IEEE 802.11ah systems</u>	165
3.5.	Fanan Anwar, Riley N. G., Mehdawi M., Ammar M. <u>Comparison of Propagation Models with Real Measurement around Hull, UK</u>	169
3.6.	Spajic Vlado, Begenisic Djordje, Savkovic Dusan <u>Intra eNB UL CoMP: Concepts, Performance and Field Trial Results</u>	173
3.7.	Djaja-Joško Vitomir, Kolakowski Jerzy <u>Application of Kalman Filter for positioning precision improvement in UWB localization system</u>	177
3.8.	Rosić Maja, Simić Mirjana, Lukić Petar <u>TDOA approach for target localization based on improved genetic algorithm</u>	181
3.9.	Suciuc George, Vochin Marius, Vulpe Alexandru, Fratu Octavian <u>Vehicular Mobile Data Collection Platform to Support the Development of Intelligent Transportation Systems</u>	185
3.10.	Mehdawi Mefath, Riley N. G., Fanan A., Ammar M. <u>Influence of Antenna Selection on Spectrum Occupancy Measurements in the Context of Cognitive Radio</u>	189
3.11.	Urošević Uglješa, Veljović Zoran <u>Distributed MIMO solutions for Peer-to-Peer Communications in Future Wireless Systems</u>	193
3.12.	Abdullin Renat R., Sokolov Rostislav I. <u>Experimental Research into Leaky-Wave Antenna Based on Layered Rectangular Waveguide with Transverse Slots</u>	197
3.13.	Saydam Nuri, Yeğin Korkut <u>Ku Band Amplifier Design for Satcom Systems</u>	201
3.14.	Gecan Dragan, Olavsbraten Morten, Gjertsen Karl Martin <u>Investigation of the Gate Bias Voltage Influence on Linearity Performance of the ET and AET 10 W GaN HEMT PAs</u>	205
3.15.	Milicevic Milenko, Milinkovic Branislava, Radic Jelena, Djuric Radivoje <u>Digitally controlled attenuator</u>	208

3.16.	Parshin Yury, Kaznacheev Pavel <a href="#"><u>Testing of Channel Coefficients of MIMO Communication System in the Presence of Interferences Complex</u></a>	211
3.17.	Parshin Yuri, Kharin Aleksei, Kudryashov Vladislav <a href="#"><u>Wiener Filtering of Channel Coefficients in MIMO Communication System with Mobile Objects</u></a>	215
3.18.	Misailović Srđan, Marković Goran <a href="#"><u>Multihop hijerarhijski protokol rutiranja za bežične senzorske mreže većih dimenzija u uslovima neidealne konektivnosti</u></a>	218
3.19.	Pajkić Tijana, Čabarkapa Milan, Nešković Nataša, Budimir Đurađ <a href="#"><u>Uporedna analiza karakteristika 4G i 5G signala na fizičkom sloju</u></a>	222
3.20.	Marković Goran <a href="#"><u>Centralizovana dvostepena klasifikacija signala po tipu modulacije primenom mreže senzora</u></a>	226
3.21.	Vukotić Selena, Vučić Desimir <a href="#"><u>Združena detekcija i klasifikacija OFDM/QAM, OFDM/OQAM i SC-FDMA signala na bazi cikličnih obeležja</u></a>	230
3.22.	Obradović Danilo, Marković Goran, Pokrajac Ivan <a href="#"><u>Analiza mogućnosti primene morfoloških operacija u procesu segmentacije spektra za potrebe radio-goniometrije</u></a>	234
3.23.	Lukić Đorđe, Koprivica Mladen, Nešković Nataša, Nešković Aleksandar <a href="#"><u>Eksperimentalna analiza performansi 2G/3G/4G javne mobilne mreže</u></a>	238
3.24.	Petrović Slavko, Marković Čedomir, Šunjevarić Milan <a href="#"><u>Upravljanje nulama dijagrama usmjerenošti zračenja antenskog niza u uslovima elektronskog ometanja</u></a>	242

#### **СЕКЦИЈА 4: СИСТЕМИ ПРЕНОСА СИГНАЛА (СПС)**

#### **SECTION 4: COMMUNICATIONS SYSTEMS (CS)**

4.1.	Amaricai Alexandru, Boncalo Oana <a href="#"><u>Cost effective FPGA implementation for Hard Decision LDPC decoders</u></a>	246
4.2.	Broulim Jan, Davarzani Sima, Georgiev Vjaceslav, Zich Jan <a href="#"><u>Genetic Optimization of a Short Block Length LDPC Code Accelerated by Distributed Algorithms</u></a>	250
4.3.	Likhobabin Evgeny, Vityazev Vladimir <a href="#"><u>Error Floor Reduction for LDPC Codes Using Self-Correction Technique</u></a>	254
4.4.	Dudáček Luděk, Veřtát Ivo <a href="#"><u>Multidimensional Parity Check codes with short block lengths</u></a>	258
4.5.	Solar-Nikolić Dino, Trifunović Marija, Milićević Predrag, Milosav Predrag, Perić Miroslav <a href="#"><u>Methodology for Used Cryptographic Key Verification in Multi Gbit/s Encryption Systems</u></a>	262

4.6.	Prokhorov Mikhail D., Kulminskiy Danil D., Ponomarenko Vladimir I. <a href="#"><u>Secure Communication Schemes using Chaotic Synchronization of Time-Delay Systems</u></a>	266
4.7.	Gecan Dragan, Olavsbraten Morten, Gjertsen Karl Martin <a href="#"><u>Comprehensive Investigation of a Dynamic Gate Biasing Technique for Linearity Improvement Based on Measurement of a 10 W GaN HEMT Power Amplifier</u></a>	270
4.8.	Matlak Stefan, Bogdan Razvan <a href="#"><u>Reducing Energy Consumption in Home Automation based on STM32F407 Microcontroller</u></a>	273
4.9.	Prlinčević Bojan, Spalević Petar <a href="#"><u>Performances of the image transmission over FSO channel in the last-mile connection (Invited paper)</u></a>	277
4.10.	Babaei Mohammadreza, Basar Ertugrul, Aygölü Ümit <a href="#"><u>A Cooperative Spectrum Sharing Protocol Using STBC-SM at Secondary User</u></a>	284
4.11.	Eslami Amir, Karamzadeh Saeid <a href="#"><u>Double Threshold Maximum to Minimum Eigen-value Spectrum Sensing Proposal and Performance Analysis</u></a>	N/A
4.12.	Javadi Sepideh, Soleimani-Nasab Ehsan <a href="#"><u>Two-Way Interference-Limited AF Relaying with Wireless Power Transfer</u></a>	292
4.13.	Khan Rida, Altunbas Ibrahim, Karabulut Kurt Gunes <a href="#"><u>Enhanced XOR Network Coding Scheme with OFDM for Two-Way Relay Networks</u></a>	296
4.14.	Karataş Azad, Özbek Berna, Sönmez İlker, Bengür Sıdika <a href="#"><u>Load Based Cell Selection Algorithm for Tetra based Professional Mobile Radio</u></a>	300
4.15.	Mihajlović Živorad, Milankov Aleksandar, Živković Lazar, Tolić Miloš <a href="#"><u>Implementation of Wireless M-Bus Concentrator/Gateway for Remote Reading of Smart Gas Meters</u></a>	304
4.16.	Petković Milica, Đorđević Goran, Ivaniš Predrag <a href="#"><u>Partial relay selection with variable gain relays and outdated CSI in mixed RF/FSO system</u></a>	308
4.17.	Čiča Zoran <a href="#"><u>Pipelined Implementation of Camellia Encryption Algorithm</u></a>	312
4.18.	Vojvodić Hrvoje, Mandžuka Sadko, Vujić Miroslav <a href="#"><u>The Use of Cooperative Intelligent Transport Systems for Vehicle Emission Charging</u></a>	316
4.19.	Kljaić Zdenko, Lučić Andrea, Vidović Krešimir <a href="#"><u>Benefits of Utilisation of GPS Error Mitigation Models for Intelligent Transport Systems</u></a>	N/A
4.20.	Perra Cristian <a href="#"><u>A framework for the development of sustainable urban mobility applications</u></a>	324
4.21.	Burian Petr <a href="#"><u>Communication Stack for Generic Embedded Modular Control System</u></a>	328

4.22.	Sarb Daniel, Bogdan Razvan <a href="#"><u>Wireless Motor Control in Automotive Industry</u></a>	332
4.23.	Peraković Dragan, Periša Marko, Cvitić Ivan, Husnjak Siniša <a href="#"><u>Artificial Neuron Network Implementation in Detection and Classification of DDoS Traffic</u></a>	336
4.24.	Sandić Miladin, Bilbija Aleksandar, Velikić Ivan <a href="#"><u>Analiza integracije različitih klasa saobraćaja u mixed-critical mrežama</u></a>	340

**СЕКЦИЈА 5: ОБРАДА СИГНАЛА (ОС)**  
**SECTION 5: SIGNAL PROCESSING (SP)**

5.1.	Krmar Jelena, Papić Veljko <a href="#"><u>Adaptation of integrodifferential operator using statistical characteristics of the iris texture</u></a>	344
5.2.	Brajović Miloš, Orovčić Irena, Stanković Srdjan <a href="#"><u>The Optimization of the Hermite transform: Application Perspectives and 2D Generalization</u></a>	348
5.3.	Sokolov Rostislav I., Abdullin Renat R. <a href="#"><u>Nonlinear JPEG Image Filtering at Stage of Preprocessing</u></a>	352
5.4.	Murgia Francesca, Giusto Daniele <a href="#"><u>A Comparison of Raw Light Field Lossless Data Compression Algorithms</u></a>	356
5.5.	Živić Nataša, Ur-Rehman Obaid <a href="#"><u>Soft Authentication Techniques for Images</u></a>	360
5.6.	Sumalan Andrada, Popescu Dan, Ichim Loretta <a href="#"><u>Flooded area detection using UAV images</u></a>	364
5.8.	Stojanovic Branka, Marques Oge, Nešković Aleksandar, Puzović Snezana <a href="#"><u>Fingerprint ROI Segmentation Based on Deep Learning</u></a>	368
5.9.	Bobić Vladislava, Graovac Stevica <a href="#"><u>Development, implementation and evaluation of new eye tracking methodology</u></a>	372
5.10.	Starčević Đorđe, Ostojić Vladimir, Petrović Vladimir <a href="#"><u>Automatic Evaluation of Collimation Field Rotation Angle in Digital Radiographic Images</u></a>	376
5.11.	Starčević Đorđe, Ostojić Vladimir, Petrović Vladimir <a href="#"><u>An Open-source Digital Diagnostic Radiography Image Annotation Software</u></a>	380
5.12.	Ostojić Vladimir, Starčević Đorđe, Petrović Vladimir <a href="#"><u>Low-value Laplacian Pyramid Coefficient Prediction for Faster Radiography Image Processing</u></a>	384
5.13.	Vujković Milorad, Rajović Vladimir, Jovičić Nenad <a href="#"><u>Ten axis MEMS as a position sensor</u></a>	388
5.14.	Škobić Velibor, Marić Uroš, Tomić Stefan, Rešetar Ivan <a href="#"><u>Real Time Video Freezing Detection Implementation on FPGA</u></a>	392

5.15.	Bilibajkić Ružica <a href="#"><u>Recognition of articulatory-acoustic deviations in pathological speech (Invited paper)</u></a>	395
5.16.	Delić Tijana, Sečujski Milan <a href="#"><u>Sinteza govora na srpskom jeziku zasnovana na veštačkim neuralnim mrežama</u></a>	403
5.17.	Gusev Marjan, Ristovski Aleksandar, Guseva Ana <a href="#"><u>Distribution of premature heartbeats</u></a>	407
5.18.	Tzallas Alexandros, Tsoulos Ioannis, Tsipouras Markos, Giannakeas Nikolaos, Androulidakis Iosif, Zaitseva Elena <a href="#"><u>Classification of EEG signals using feature creation produced by grammatical evolution</u></a>	411
5.19.	Kaprocki Nives, Kovačević Jelena, Pečkai Kovač Robert, Miroslav <a href="#"><u>DSP implementation of the surround speaker virtualizer for sound bar systems</u></a>	415
5.20.	Jakovljević Nikša, Mišković Dragiša, Trpovski Željen <a href="#"><u>Evaluation of Noise Estimation Algorithms Based on Minimum Statistics and Signal to Noise Ratio</u></a>	419
5.21.	Radosavljević Zvonko, Kovačević Branko <a href="#"><u>Integrated Track Splitting-Component Merging History for Efficient Target Tracking (Invited presentation)</u></a>	423
5.22.	Deiaa Ahmed, Abdelhamid Bassant, El-Keyi Amr, Elramly Salwa <a href="#"><u>Mitigation of Both Doubly Selective Channels and Phase Noise Effects in OFDM Systems</u></a>	N/A
5.23.	Samano Robles Ramiro, Tovar Eduardo, Lara Mauricio, Orozco Aldo, McLernon Desmond C., Ghogho Mounir <a href="#"><u>Network Diversity Multiple Access in Rayleigh Fading Correlated Channels with Imperfect Channel and Collision Multiplicity Estimation</u></a>	431
5.24.	Refan Mohammad Hossein, Dameshghi Adel, Kamarzarrin Mehrnoosh <a href="#"><u>GDOP Factor Classification by Implementation of CMACNN Method for Low Cost GPS Receivers</u></a>	N/A
5.25.	Stanciu Cristian, Udrea Mihnea, Anghel Cristian, Dobre Robert Alexandru <a href="#"><u>Improved Regularization for a Low-Complexity RLS Algorithm</u></a>	439
5.26.	Al-Zubaidi R-Smith Nawfal, Brancik Lubomir <a href="#"><u>Convergence Acceleration Techniques for Proposed Numerical Inverse Laplace Transform Method</u></a>	443
5.27.	Nikishkin Paul B., Vityazev Sergey V., Subbotin Igor V., Kharin Aleksei V., Vityazev Vladimir V. <a href="#"><u>Sub-band OFDM Implementation on Multicore DSP</u></a>	447
5.28.	Bujaković Dimitrije, Đurović Željko, Andrić Milenko, Bondžulić Boban, Simić Slobodan <a href="#"><u>Expert System Based on Hidden Markov Models for Recognition of Radar Targets (Invited paper)</u></a>	451

5.29.	Stojković Nikola, Nikolić Dejan, Džolić Bojan, Tošić Nikola, Orlić Vladimir, Lekić Nikola, Todorović Branislav <a href="#"><u>An Implementation of Tracking Algorithm for Over-The-Horizon Surface Wave Radar</u></a>	459
5.30.	Nikolić Veljko, Marković Vera V. <a href="#"><u>Determining the DOA of Received Signal Using RBFNN Trained with Simulated Data</u></a>	463
5.31.	Tomic Slavisa, Beko Marko, Dinis Rui, Tuba Milan, Bacanin Nebojsa <a href="#"><u>An Efficient WLS Estimator for Target Localization in Wireless Sensor Networks</u></a>	467
5.32.	Brajović Miloš, Draganić Andjela, Orović Irena, Stanković Srdjan <a href="#"><u>FHSS signal sparsification in the Hermite transform domain</u></a>	471
5.33.	Djukanović Slobodan, Popović Tomo, Mitrović Andrija <a href="#"><u>Precise sinusoid frequency estimation based on parabolic interpolation</u></a>	475
5.34.	Daković Miloš, Stanković Isidora, Ender Joachim, Stanković Ljubiša <a href="#"><u>Sample Selection Strategy in DFT based Compressive Sensing</u></a>	479

## **СЕКЦИЈА 6: ПРИМЕЊЕНА ЕЛЕКТРОМАГНЕТИКА (ПЕМ)** **SECTION 6: APPLIED ELECTROMAGNETICS (AEM)**

6.1.	Aşci Yavuz, Pehlivan Mustafa, Yeğin Korkut <a href="#"><u>Wideband, High Gain Aperture Coupled Ku-Band Antenna for SatCom</u></a>	483
6.3.	Ahmadfar Farnaz, Razavi Seyed Ali <a href="#"><u>Backlobe Suppressed H-plane Ridge Gap Waveguide (RGW) Horn Antenna</u></a>	N/A
6.4.	Subotic Milos, Palfi Laszlo, Pjevalica Nebojsa <a href="#"><u>Efficient Antenna Modeling Method for Microwave Tomography</u></a>	490
6.5.	Yiğit Olcay, Şişman İsmail, Aşci Yavuz, Yeğin Korkut <a href="#"><u>Beam Switched Antenna Design for Jamming Mitigation of GPS Receivers</u></a>	494
6.6.	Lazović Luka, Jovanović Ana, Lutovac Budimir, Rubežić Vesna <a href="#"><u>Primjena teorije grafova za dizajniranje rekonfigurabilnih fraktalnih antena</u></a>	497
6.7.	Milošević Vojislav, Jokanović Branka, Boric-Lubecke Olga, Lubecke Victor <a href="#"><u>Key Millimeter Wave Technologies for 5G (Invited presentation)</u></a>	501
6.9.	Artner Gerald, Langwieser Robert, Mecklenbräuker Christoph <a href="#"><u>A MID Dipole Antenna in LDS Technology</u></a>	502
6.10.	Pehlivan Mustafa, Yeğin Korkut, Aşci Yavuz <a href="#"><u>Design of 1-18 GHz Parabolic Reflector Antenna with LPDA Feed</u></a>	506
6.11.	Sarbazi Golazari Samineh, Amiri Nasrin, Hojjat Kashani Farrok <a href="#"><u>Design, Simulation and Measurement of Loop Plasma Antenna in UHF Band</u></a>	509
6.13.	Zouros Grigoris <a href="#"><u>Alternative Orthogonal Vector Basis Functions for Solving Volume Integral Equations in Electromagnetic Theory (Invited paper)</u></a>	513
6.14.	Perovic Jovana, Olcan Dragan <a href="#"><u>The Excess Attenuation of Electric Field in the Presence of Deciduous Trees</u></a>	519

6.15.	Kolezas Georgios, Zouros Grigoris <a href="#"><u>Electromagnetic Scattering by a Conducting Sphere with Anisotropic Coating</u></a>	523
6.16.	Pjevalica Velibor, Pjevalica Nebojsa, Petrovic Nenad, Teslic Nikola <a href="#"><u>A Novel Simulation Approach for Measuring of DC Voltage Offset Influence on Magnetizing Current Even Harmonics in the Power Transformer by Using Dither</u></a>	527
6.17.	Plavec Eduard, Vidović Mladen <a href="#"><u>Genetic Algorithm Based Plunger Shape Optimization of DC Solenoid Electromagnetic Actuator</u></a>	531
6.18.	Savić Slobodan, Ilić Milan <a href="#"><u>Curved Continuously Inhomogeneous and Anisotropic Higher Order Finite Elements for Accurate Large-Domain Electromagnetic Modeling (Invited paper)</u></a>	535
6.19.	Miletić Milivoje F. <a href="#"><u>Comparison of Four MoM Formulations When Solving Electrostatic Problems Where Rotational Symmetry Is Exploited</u></a>	543
6.20.	Ozturk Hulya, Yegin Korkut <a href="#"><u>Electromagnetic Scattering from PEC Wedge in Lossy Medium due to Point Current Source</u></a>	547
6.21.	Antić Danka, Mijatović Gorana, Djuric Nikola, Mazzarella Giuseppe <a href="#"><u>The COMSOL Support for Analysis of Inductors with Variable Geometry</u></a>	550
6.22.	Kozhevnikov Vasily Yu., Kozyrev Andrey V., Semeniuk Natalia S. <a href="#"><u>Kinetic Modelling of the One-dimensional Planar Virtual Cathode Oscillator</u></a>	554
6.23.	Bjelić Slobodan, Marković Nenad, Bjelić Igor, Bogićević Zorica, Jakšić Uroš, Jovanović Bojan <a href="#"><u>Detektovanje inverzne komponente struje pomoću projektovanog filtra struje</u></a>	558
6.24.	Semenikhina Diana V., Chikov Nikolay I., Semenikhin Andrey I., Gorbatenko Nikolay N. <a href="#"><u>Experimental Studies of Nonlinear Metasurface with Metamaterial Substrate</u></a>	562
6.25.	Crnadak Veljko, Tasić Siniša <a href="#"><u>Improved VHF Quadrature Hybrid Coupler</u></a>	566
6.26.	Yukhanov Yury V., Privalova Tatiana Yu. <a href="#"><u>Synthesis of Impedance Reflection Type Polarizer</u></a>	570
6.27.	Djuric Nikola, Kljajic Dragan <a href="#"><u>An Approach for the Design of Chemical Reactors under Microwave Irradiation</u></a>	574
6.28.	Letavin Denis A., Mitelman Yuriy E., Chechetkin Victor A. <a href="#"><u>The Substrate Factor in the Miniaturization Efficiency of the Microstrip Branch-Line Couplers</u></a>	577
6.29.	Djuric Nikola, Bjelica Jelena <a href="#"><u>Resonant Cavity as Microwave Exposure System for Biological Materials</u></a>	581
6.30.	Blagojevic Marjan, Mancic Dragan <a href="#"><u>The system for magnetic field mapping based on the integrated 3D Hall sensor (Invited paper)</u></a>	585

6.31.	Kundacina Ognjen, Vincan Vladimir, Antic Danka, Kljajic Dragan, Kasas-Lazetic Karolina <a href="#"><u>The ABM 8057 Utilization for SEMONT's EMF Monitoring in a Closed Room</u></a>	593
6.32.	Bjelica Jelena, Mijatovic Gorana, Kljajic Dragan, Fanti Alessandro <a href="#"><u>The Inductors with Adjustable Surface Area for Energy Harvesting Utilization</u></a>	597
6.33.	Nešić Nataša, Dončov Nebojša, Russer Johannes, Milovanović Bratislav <a href="#"><u>Electromagnetic Field Coupling with Two Monopole Antennas inside a Protective Enclosure with Apertures</u></a>	601
6.34.	Prucevs Andrejs, Semenjako Janis, Solovjova Tatjana <a href="#"><u>New Shape Induction Loop for Small and Medium-Size Rooms</u></a>	605
6.35.	Nedic Goran, Djuric Nikola, Kljajic Dragan, Milutinov Miodrag, Josic Slobodan <a href="#"><u>The Exposure Assessment to Communication Equipment of High-power Substation</u></a>	609

## **СЕКЦИЈА 7: ПРИМЕЊЕНА ЕЛЕКТРОНИКА (ПЕЛ)**

### **SECTION 7: APPLIED ELECTRONICS (AEL)**

7.1.	Stenin Vladimir Ya., Antonyuk Artem V. <a href="#"><u>Design of the 65-nm CMOS Comparison Element for a Content-Addressable Memory and Simulation of Single-Event Transients</u></a>	613
7.2.	Katunin Yuri V., Stenin Vladimir Ya., Antonyuk Artem V. <a href="#"><u>Design of Logical Elements with Single-Event Compensation for the 28-nm CMOS Decoders</u></a>	617
7.3.	Rakanović Damjan, Struharik Rastislav <a href="#"><u>IP Core for AES256 and TDES algorithms with AXI Interface</u></a>	621
7.4.	Ćatić Vladimir, Lukić Natalija, Salom Iva, Ristić Vukasin, Kabović Milenko, Nenadić Nikola <a href="#"><u>An Automated Environment for Hardware Testing Using PXI Instrumentation and LabVIEW Software</u></a>	625
7.5.	Moldaschl Jan, Darwish Mohamed <a href="#"><u>An Ultra Flat Profile Natural Interleaved Power Factor Corrector with Advanced Power Management</u></a>	629
7.6.	Shetty Darshan, Pasupureddi Vijaya, Sturm Johannes <a href="#"><u>A 2.4 GHz, 1 dB Noise Figure Common-Gate LNA for WLAN Frontend</u></a>	633
7.7.	Olyaei Saeed, Sherafat Masood <a href="#"><u>Investigation of target speed effect on nonlinearity error caused by non-ideal PBS in DTLMI</u></a>	637
7.9.	Rajs Vladimir, Mihajlović Živorad, Milosavljević Vladimir, Tomić Josif, Živanov Miloš <a href="#"><u>Methods of environmental monitoring parameters based on smart measurement systems (Invited presentation)</u></a>	641
7.10.	Zich Jan, Broulim Jan <a href="#"><u>Wireless Unit for Environmental Monitoring</u></a>	643

7.11.	Savić Trifun, Radonjić Milutin <a href="#">Proposal of Solution for Automated Irrigation System</a>	647
7.12.	Lufinka Ondřej <a href="#">Multiple-Point Ultrasonic Distance Measurement and Communication with Simulations</a>	651
7.13.	Milovanović Marko, Popović Ivan T., Rakić Aleksandar Ž. <a href="#">Run-Time Reconfigurable Middleware in Device Network Architecture</a>	655
7.14.	Bundalo Zlatko, Ramakić Adnan, Bundalo Dušanka <a href="#">Increasing Desktop Application and User Data Protection Using Smartphone</a>	659
7.15.	Mandzuka Sadko, Gregurić Martin, Kljaić Zdenko <a href="#">Kooperativno okruženje za infrastrukturu e-mobilnosti</a>	663

## **СЕКЦИЈА 8: МУЛТИМЕДИЈА (ММ)**

### **SECTION 8: MULTIMEDIA (MM)**

8.1.	Şekertekin Yeter, Atan Özkan <a href="#">An Image Encryption Algorithm Using Ikeda and Henon Chaotic Maps</a>	667
8.2.	Perra Cristian <a href="#">On the Quality Evaluation of Lossy Compressed Light Fields</a>	671
8.3.	Murgia Francesca, Giusto Daniele <a href="#">Low Cost Plenoptic Camera for 3D Modelling</a>	675
8.4.	Tuba Ira, Tuba Eva, Beko Marko <a href="#">Digital Image Forgery Detection Based on Shadow Texture Features</a>	679
8.5.	Ahmadvand Pouya, Ebrahimpour Reza, Ahmadvand Payam <a href="#">How popular CNNs Perform in Real Applications of Face Recognition</a>	683
8.6.	Stojak Aleksandar, Tuba Eva, Tuba Milan <a href="#">Framework for Abnormality Detection in Magnetic Resonance Brain Images</a>	687
8.7.	Nikolic Marina, Tuba Eva, Tuba Milan <a href="#">Edge Detection in Medical Ultrasound Images Using Adjusted Canny Edge Detection Algorithm</a>	691
8.8.	Mašović Draško <a href="#">Towards the Improved Prediction of Airborne Sound Insulation in Buildings (Invited paper)</a>	695
8.9.	Ristić Dragan <a href="#">Karakterizacija teksture impulsnog odziva prostorija primenom multifraktalne analize (Invited paper)</a>	703
8.10.	Salom Iva <a href="#">Analiza akustičkih karakteristika zvuka zvona (Invited paper)</a>	711
8.11.	Petrović Nikola, Bjelić Miloš, Ćertić Jelena, Stanojević Miodrag, Šumarac Pavlović Dragana <a href="#">Analyses of decimation filter stopband attenuation influence on subjective quality of audio signals</a>	719

8.12.	Dinić Miodrag, Rikalo Aleksandar, Marković Aleksandar, Jovanović Petar <a href="#"><u>Optimizacija održavanja asocijativnog bafera jedinice za upravljanje memorijom u Android emulatoru za arhitekturu MIPS</u></a>	723
8.13.	Zekovic Amela <a href="#"><u>Multifractal and Inverse Multifractal Characterization of 3D Video Formats (Invited paper)</u></a>	727
8.14.	Marković Dejan R., Gavrovska Ana, Reljin Irini <a href="#"><u>4K Video Traffic Analysis using Seasonal Autoregressive Model for Traffic Prediction</u></a>	735
8.15.	Popadić Ilija, Todorović Branislav <a href="#"><u>Image fusion based on the multi-exposed images</u></a>	739
8.16.	Fimic Nemanja, Basicevic Ilija <a href="#"><u>Software architecture for supporting FCC in DVB-S/C/T set top boxes</u></a>	743
8.17.	Srejić Tijana, Ilić Miloš, Milošević Milena <a href="#"><u>Realizacija mehanizma za isporuku događaja u aplikativnom okruženju vozila</u></a>	747
8.18.	Šoškić Nenad, Benarik Laslo, Bašičević Ilija <a href="#"><u>Jedno rešenje propagiranja EPG podataka na digitalnom televizijskom prijemniku</u></a>	751
8.19.	Đekić Nemanja, Janković Miloš, Pjevalica Nebojša <a href="#"><u>USB-om kontrolisan relejni prekidač</u></a>	754

## **СЕКЦИЈА 9: СОФТВЕРСКИ АЛАТИ И АПЛИКАЦИЈЕ (CAA) SECTION 9: SOFTWARE TOOLS AND APPLICATIONS (STA)**

9.1.	Simonović Mirela, Živojnović Vojin, Saranovac Lazar <a href="#"><u>An Approach to Modeling Clock Tree of a Complex System-on-Chip</u></a>	758
9.2.	Budyakov Petr S., Chernov Nikolay I., Yugai Vladislav Ya., Prokopenko Nikolay N. <a href="#"><u>Logic Functions Representation and Synthesis of k-valued Digital Circuits in Linear Algebra</u></a>	762
9.3.	Petrosyants Konstantin, Kharitonov Igor, Batarueva Ekaterina <a href="#"><u>Simulation of CMOS IC's Waveforms Distortions in PCB Traces with Account for Radiation Effects</u></a>	766
9.4.	Živković Miodrag, Jovanović Nemanja <a href="#"><u>NFC TraceCase</u></a>	770
9.5.	Pesic Djordje, Djordjević Borislav, Timcenko Valentina <a href="#"><u>Competition of Virtualized Ext4, Xfs and Btrfs Filesystems Under Type-2 Hypervisor</u></a>	774
9.6.	Janković Novica, Barjaktarović Marko, Janković Milica, Čantrak Djordje <a href="#"><u>First steps in new affordable PIV measurements</u></a>	778
9.7.	Marković Ivo, Nešović Marko, Davidović Mile <a href="#"><u>Jedno rešenje testiranja set-top boks hardvera na fabričkoj liniji</u></a>	782

9.8.	Murgia Francesca, Giusto Daniele <a href="#"><u>A Database for Evaluating the Quality of Experience in Light Field Applications</u></a>	786
9.9.	Hadžić Đulaga, Sarajlić Nermin, Malkić Jasmin <a href="#"><u>Different Similarity Measures to Identify Duplicate Records in Relational Databases</u></a>	790
9.10.	Spalević Petar, Pećanin Emir, Ilić Siniša, Veinović Mladen, Panić Stefan <a href="#"><u>Automatization of the ETL process on the isolated small scale database systems</u></a>	794
9.11.	Nenadić Kosa, Gavrić Milan <a href="#"><u>Enhancing CIM with Linked Data Capability</u></a>	798
9.12.	Lakshen Guma, Vraneš Sanja, Janev Valentina <a href="#"><u>Big Data and Quality: A Literature Review</u></a>	802
9.13.	Petkovski Aleksandar, Risteska Stojkoska Biljana, Trivodaliev Kire, Kalajdziski Slobodan <a href="#"><u>Analysis of Churn Prediction: A Case Study on Telecommunication Services in Macedonia</u></a>	806
9.14.	Guseva Ana, Gusev Marjan, Chorbev Ivan <a href="#"><u>iKnow Usability: A Case Study</u></a>	810
9.15.	Skorput Pero, Vujić M., Bokulic D. <a href="#"><u>Upravljanje znanjem u domeni inteligentnih transportnih sustava</u></a>	814
9.16.	Szabo Roland, Gontean Aurel <a href="#"><u>Lynxmotion AL5 Type Robotic Arm Control with Color Detection on FPGA Running Linux OS</u></a>	818
9.17.	Simion Catalin Eugen, Geampalia Giorgiana, Chenaru Oana Gabriela, Florea Gheorghe <a href="#"><u>Solutions for the Implementation of Remote Plant Supervision</u></a>	N/A
9.18.	Simić Aleksandra, Kocić Ognjen, Bjelica Milan Z., Milošević Milena <a href="#"><u>Driver monitoring algorithm for Advanced Driver Assistance Systems</u></a>	826
9.19.	Todorovici Lucian, Bogdan Razvan <a href="#"><u>Studying Thermal Behavior of Buildings and Vehicles by Means of a Mobile Thermographic System</u></a>	830
9.20.	Kocić Ognjen, Simić Aleksandra, Bjelica Milan Z., Maruna Tomislav <a href="#"><u>Optimization of driver monitoring ADAS algorithm for heterogeneous platform</u></a>	834
9.21.	Tuponja Boris, Šuković Goran <a href="#"><u>Evolving Neural Network to Play Game 2048</u></a>	838
9.22.	Tsoulos Ioannis, Tzallas Alexandros, Tsalikakis Dimitrios, Giannakeas Nikolaos, Tsipouras Markos, Androulidakis Iosif, Zaitseva Elena <a href="#"><u>NeuralGenesis: a software for distributed neural network training</u></a>	841
9.23.	Punt Marija <a href="#"><u>Human-computer interaction in an integrated environment combining digital TV, mobile devices and Internet (Invited paper)</u></a>	845
9.24.	Krnjetin Marko, Četić Nenad <a href="#"><u>Scripting framework for graphical configuration tool for embedded devices</u></a>	853

9.25.	Žitnik Slavko, Janković Marko, Petrovčič Klemen, Bajec Marko <a href="#"><u>Architecture of Standard-based, Interoperable and Extensible IoT Platform</u></a>	857
9.26.	Šandi Stevan, Krstajić Božo, Popović Tomo <a href="#"><u>pyPMU – Open Source Python Package for Synchrophasor Data Transfer</u></a>	861
9.27.	Rajinac Marko, Krunić Momčilo, Považan Ivan, Kovačević Jelena <a href="#"><u>An Eclipse plugin for preserving and reloading debug session, in domain of DSP application development</u></a>	865
9.28.	Žica Petar, Vranić Nikola <a href="#"><u>Jedno rešenje programske sprege ulaznih uređaja i Android platforme sa primerom integracije Nunchuk uređaja</u></a>	869
9.29.	Bosnic Stefan, Papp Istvan, Novak Sebastian <a href="#"><u>The development of hybrid mobile applications with Apache Cordova</u></a>	873
9.30.	Vukov Goran, Kovačević Marko, Kovačević Branimir, Maruna Tomislav <a href="#"><u>Jedna realizacija čuvanja podataka o događajima u vozilu u Androidu operativnom sistemu</u></a>	877
9.31.	Drašković Dražen, Gencel Vidor, Žitnik Slavko, Bajec Marko, Nikolic Bosko <a href="#"><u>A software agent for social networks using natural language processing techniques</u></a>	881
9.32.	Delčev Sanja, Vukasović Maja, Drašković Dražen, Radojević Dimitrije, Janković Marko, Bajec Marko, Nikolić Boško <a href="#"><u>Veb sistem za polaganje testova znanja iz Inteligentnih sistema</u></a>	885
9.34.	Batanović Vuk, Nikolić Boško <a href="#"><u>Sentiment Classification of Documents in Serbian: The Effects of Morphological Normalization</u></a>	889
9.35.	Pijetlović Stefan, Jovanović Petar, Teslić Nikola, Prljević Slobodan <a href="#"><u>An Approach to Software Development Tools Unification</u></a>	893
9.36.	Šimić Goran, Pantić Stefan, Jevremović Aleksandar <a href="#"><u>Framework for Improving Web Based e-Learning Interactivity</u></a>	897
9.37.	Vukovic Dijana, Dujlovic Igor <a href="#"><u>Facebook Messenger bots and their application for business</u></a>	901
9.38.	Nešić Zoran, Ljubić Leon, Radojičić Miroslav, Vesić Vasović Jasmina <a href="#"><u>Some Considerations on Improvement of Parking Service Information System</u></a>	905
9.39.	Lutovac Miroslav, Mladenović Vladimir, Lutovac-Banduka Maja <a href="#"><u>Graphical User Interface for Electrical Engineering Systems using Wolfram Language</u></a>	909
9.40.	Velkoski Goran, Gusev Marjan, Ristov Sasko <a href="#"><u>Analysis of Interactive Image Technologies</u></a>	913
9.41.	Perra Cristian <a href="#"><u>Light Field Image Compression Based on Preprocessing and High Efficiency Coding</u></a>	917
9.42.	Mišić Marko, Nikolov Dušan, Protić Jelica, Tomašević Milo <a href="#"><u>Paralelizacija GST algoritama za detekciju sličnosti u programskom kodu</u></a>	921

9.43.	Ristovski Aleksandar, Gusev Marjan, Ristov Sasko <u><a href="#">Nested Parallelism Concepts of Ray Tracing Algorithms and Multithreading API Performance Analysis</a></u>	925
9.44.	Boštančić Rakas Slavica, Stojanović Mirjana <u><a href="#">A Policy-Based Approach to E2E Service Negotiation via Third Party Agent</a></u>	929
9.45.	Bjelić Igor S., Bogićević Zorica S., Bjelić Slobodan N., Marković Nenad A., Jovanović Bojan L. <u><a href="#">Simulation of daylight in order to protect the sustainability of the old architectural structures cultural heritage in the environment</a></u>	933
9.46.	Dorđević Nebojša D., Rančić Dejan D., Spalević Petar <u><a href="#">Development of a Methodology for Evaluating the Quality in Use of WebGIS applications (Invited presentation)</a></u>	937

**СЕКЦИЈА 10: ОПТИЧКЕ ТЕЛЕКОМУНИКАЦИЈЕ (ОТ)  
SECTION 10: OPTICAL COMMUNICATIONS (OC)**

10.1.	Krstić Marko, Crnjanski Jasna, Totović Angelina, Gvozdić Dejan <u><a href="#">Injection-Locked Fabry-Pérot Laser Diodes for All-Optical Flip-Flops (Invited paper)</a></u>	939
10.2.	Stojanovic Nebojsa, Karinou Fotini, Prodaniuc Cristian, Qiang Zhang <u><a href="#">Timing Recovery in High-Speed PAM-4 Transmission Systems</a></u>	947
10.3.	Uzunidis Dimitris, Matrakidis Chris, Stavdas Alexandros <u><a href="#">Simplified FWM Model for Flexible-Grid Optical Systems</a></u>	951
10.4.	Uzunidis Dimitris, Matrakidis Chris, Stavdas Alexandros <u><a href="#">Application of a Simplified FWM Expression in Mixed-Fiber Links</a></u>	955
10.5.	Ashrafzadeh Behnam, Soleimani-Nasab Ehsan, Kamandar Mehdi <u><a href="#">Outage Analysis of Mixed RF/FSO Cooperative Systems with Multiple Antennas and Apertures</a></u>	959
10.6.	Ashrafzadeh Behnam, Soleimani-Nasab Ehsan, Kamandar Mehdi <u><a href="#">Performance Analysis of Mixed DGG and Generalized Nakagami-m Dual-Hop FSO/RF Transmission Systems</a></u>	963
10.7.	Ratkoceri Jakup, Samir Ahmed, Batagelj Boštjan <u><a href="#">Seven-Core Optical Fiber in a Passive Optical Access Network</a></u>	967
10.8.	Miljković Nemanja, Stojanović Aleksandar, Matavulj Petar <u><a href="#">Physical model for B92-QKD authentication based on analogy with optical chaotic systems</a></u>	971

**СЕКЦИЈА 11: СТУДЕНТСКА СЕКЦИЈА (С)**  
**SECTION 11: STUDENT PAPERS (S)**

11.1.	Bogdanović Ana, Gajić Andrija <a href="#"><u>Labview aplikacija za upravljanje Lego Mindstorms robotom pomoću Microsoft Kinecta</u></a>	N/A
11.2.	Gligorovski Vojislav, Mitrović Božidar, Milovanović Marta <a href="#"><u>Upravljanje Lego Mindstorms robotom pomoću Leap motion senzora</u></a>	N/A
11.3.	Stojanović Nenad <a href="#"><u>Uticaj Rajsovog fedinga na kvalitet slike pri prenosu u okviru WMSN</u></a>	N/A
11.4.	Lazić Aleksandar <a href="#"><u>Modelovanje RPO-OFDM modulatora u VLC sistemima</u></a>	N/A
11.5.	Janković Nada <a href="#"><u>Razvoj sistema za elektronsko glasanje i implementacija korišćenjem Laravel tehnologije</u></a>	N/A
11.6.	Cakarevic Magdalena <a href="#"><u>Analysis and calculation of user's location in indoor and outdoor environment</u></a>	N/A
11.7.	Matic Milena <a href="#"><u>Practical implementation of location services in Bluetooth Low Energy systems</u></a>	N/A
11.8.	Letavin Denis A. <a href="#"><u>Compact double-frequency microstrip coupler</u></a>	N/A
11.9.	Letavin Denis A. <a href="#"><u>Miniature band-pass filter on microstrip resonators</u></a>	N/A
11.10.	Ćapin Miloš <a href="#"><u>Mikrotalasni rekonfigurabilni filter propusnik niskih učestanosti ili opsega učestanosti</u></a>	N/A
11.11.	Marković Ivo <a href="#"><u>Implementacija rekonfigurabilnog filtra propusnika – nepropusnika opsega učestanosti korišćenjem memristora</u></a>	N/A