



TECHNICAL UNIVERSITY of SOFIA



Faculty of Electronic Engineering and Technologies



XXX INTERNATIONAL SCIENTIFIC CONFERENCE

ELECTRONICS ET 2021

IEEE CONFERENCE RECORD # 52713

PROGRAMME

Sponsored by:

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Faculty of Electronic Engineering and Technologies, TU – Sofia
IEEE Bulgaria Section
IEEE CAS/SSCS Chapter Sofia
IEEE ED/CPMT/MTT/AP Chapter Sofia

Science Days of Technical University of Sofia
Hotel “Lazur”
September 15 - 17, 2021
Sozopol, Bulgaria

The conference will be held as a hybrid event. Both in [Room 1](#) and [Room 2](#) will be possible online and physical presentation. Online presentation will be through [Cisco Webex Meetings Desktop App](#). The links are embedded in the programme, no prior Webex registration is required.

The registration of the participants is possible [online](#) and on-site. It is preferred to be [online](#).

Please email elecs@ecad.tu-sofia.bg with any questions or concerns.

THE XXX INTERNATIONAL SCIENTIFIC CONFERENCE “ELECTRONICS ET 2021” IS ORGANIZED BY TECHNICAL UNIVERSITY OF SOFIA, FACULTY OF ELECTRONIC ENGINEERING AND TECHNOLOGIES, BULGARIA IN CO-OPERATION WITH DELFT UNIVERSITY OF TECHNOLOGY, THE NETHERLANDS

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Biomedical Engineering	Ivo Iliev – Bulgaria Irena Jekova – Bulgaria Vessela Krasteva – Bulgaria
Circuits and Systems	Emil Manolov – Bulgaria Tsvetana Grigorova – Bulgaria Ivaylo Pandiev – Bulgaria
Testing, Quality and Reliability	Anna Stoynova – Bulgaria Anton Georgiev – Bulgaria Ivan Evstatiev – Bulgaria
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Quantum, Nuclear and Optoelectronics	Todor Djamiykov – Bulgaria Mityo Mitev – Bulgaria Venelin Kozhuharov – Bulgaria

Wednesday, September 15, 2021	
1.00 p.m. EET	Registration of participants (Room 1 , Online registration)
4.00 p.m. EET	Official opening of the Conference (Room 1) Plenary session 1. Jivka Ovtcharova. Digital Twin - Seamless Engineering in the Industry 4.0 Era. <i>Karlsruhe Institute of Technology, Germany</i> 2. Jeroen Boydens. Why Do We Need Embedded Software Resilience? <i>KU Leuven, Belgium</i> 3. Cole Zemke. Interconnect Parasitics and Reliability – Modeling and Analysis. <i>GLOBALFOUNDRIES, USA</i>
7.30 p.m. EET	Welcome party

Thursday, September 16, 2021	
9.00 a.m. EET	Hybrid Session A (Room 1)
9.00 a.m. EET	Poster Session B (Room 2) Circuits and Systems Biomedical Engineering Education and Learning Technologies Microelectronics
1.30 p.m. EET	Hybrid Session C (Room 1)
1.30 p.m. EET	Poster Session D (Room 2) Testing, Quality and Reliability Quantum, Nuclear and Optoelectronics Nanoelectronics and Technologies in Electronics
5.00 p.m. EET	Social program

Friday, September 17, 2021	
9.00 a.m. EET	Hybrid Session E (Room 1)
9.00 a.m. EET	Poster Session F (Room 2) Embedded Systems Instrumentation and Measurement Power Electronics
1.00 p.m. EET	Closing of the Conference (Room 1)

Session A**Chairman – Jeroen Boydens**

- A.1. M. Nikseresht, J. Vankeirsbilck, D. Pissoort, J. Boydens.** A Selective Soft Error Protection Method for COTS Processor-based Systems. *KU Leuven, Belgium - 20 min*
- A.2. B. De Blaere, E. Verstappe, J. Vankeirsbilck, J. Boydens.** A Compiler Extension to Protect Embedded Systems Against Data Flow Errors. *KU Leuven, Belgium - 20 min*
- A.3. B. Pang, T. Claeys, J. Vankeirsbilck, K. T’Jonck, H. Hallez, J. Boydens.** A Probability-based Channel Selection Algorithm for Bluetooth Low Energy: A Preliminary Analysis. *KU Leuven, Belgium - 20 min*
- A.4. K. T’Jonck, C. R. Kancharla, B. Pang, J. Vankeirsbilck, H. Hallez, J. Boydens.** Real-Time Activity Tracking using TinyML to Support Elderly Care. *KU Leuven, Belgium - 20 min*
- A.5. C. R. Kancharla, L. Bekaert, J. Lannoo, J. Vankeirsbilck, D. Vanoost, J. Boydens, H. Hallez.** Augmented Reality Based Machine Monitoring for Legacy Machines: a retrofitting use case. *KU Leuven, Belgium - 20 min*

Posters online**Chairman – Nikolay Hinov**

- A.P1. Y. Boneva.** Intelligent Approach to Infrastructure Changes in Urban Environment. *Bulgarian Academy of Sciences, Bulgaria - 5 min*
- A.P2. M. Ursheva, K. Ruskova.** Hybrid and Plug-in Hybrid Vehicles and Initial Emergency Response Procedures related to Hybrid Batteries. *Ministry of Interior Academy, Technical University of Sofia, Bulgaria - 5 min*
- A.P3. A. Lichev, V. Mihov.** Resonant Converter Operation at Different Frequency Ratios. *University of Food Technologies, Plovdiv, Bulgaria - 5 min*
- A.P4. A. Vuchev, T. Grigorova, S. Vuchev.** RMS Current Values in an LLC DC-DC Converter Operating above the Resonant Frequency. *University of Food Technologies, Plovdiv, Technical University of Sofia, Branch Plovdiv, V4Tech Electronics Ltd., Bulgaria - 5 min*
- A.P5. T. Grigorova, A. Vuchev, S. Vuchev.** A Design Methodology for an LLC DC-DC Converter Operating above the Resonant Frequency. *Technical University of Sofia, Branch Plovdiv, University of Food Technologies, Plovdiv, V4Tech Electronics Ltd., Bulgaria - 5 min*
- A.P6. D. Dankov, N. Madjarov, P. Prodanov.** Description of the Conversion Process and Results on the Opel Corsa with an Internal Combustion Engine into an Electric Car. *Technical University of Gabrovo, Bulgaria - 5 min*

A.P7. N. Manchev, B. Karapenev, K. Angelov. Design and Development of Smart Home Electrical Management and Switching Panel. *Technical University of Gabrovo, Bulgaria* - **5 min**

A.P8. R. Khlynov, V. Ryzhova, S. Yarishev, I. Konyakhin, T. Djamiykov, M. Marinov. Optoelectronic Methods for Noninvasive Analysis of Hematocrit Level. *ITMO University, Saint-Petersburg, Russia, Technical University of Sofia, Bulgaria* - **5 min**

[Room 2](#),

Thursday,

September 16, 2021

9:00 a.m. EET

Session B

Circuits and Systems

Chairman – Ivo Iliev

B.P1. G. Gatchev, V. Mollov. BoolHash: A New Convolutional Algorithm for Boolean Activations. *Technical University of Sofia, Bulgaria* - **5 min**

B.P2. S. Stoyanov, D. Mihaylova. Study the Possibilities for Noise Suppression of an Integrating Period Meter for Measuring Forces and Torques in the Precision Agriculture. *Technical University of Varna, Bulgaria* - **5 min**

B.P3. B. Nikov. Analysis of Continuous-Time SD-modulator With Single-Bit Quantizer Operating at Limit Cycle. *Advanced Solutions Group, On Semiconductor, Switzerland* - **5 min**

B.P4. K. Tonchev, A. Manolova, R. Petkova, V. Poulkov. Human Skeleton Motion Prediction Using Graph Convolution Optimized GRU Network. *Technical University of Sofia, Bulgaria* - **5 min**

B.P5. A. Manolova, K. Tonchev, N. Neshov, N. Christoff. Human Activity Recognition with Semantically Guided Graph-convolutional Network. *Technical University of Sofia, Bulgaria* - **5 min**

Biomedical Engineering

Chairman – Ivo Iliev

B.P6. I. Iliev, S. Tabakov, N. Tomchev. An Analogue Front-end for Paced ECG Registration by Capacitive Electrodes. *Technical University of Sofia, Bulgaria* - **5 min**

B.P7. D. Badarov, G. Mihov, I. Iliev. Development of Analog Front-end for Capacitive ECG Signal Acquisition. *Technical University of Sofia, Bulgaria* - **5 min**

B.P8. G. Mihov, D. Badarov. Combined Filter for Rejection of 1st and 3rd Power-line Interference Harmonic from ECG Signals. *Technical University of Sofia, Bulgaria* - **5 min**

B.P9. G. Petrova, G. Spasov, I. Iliev. A Review on Applications of Low-resolution IR Array Sensors in Ambient-Assisted Living. *Technical University of Sofia, Bulgaria* - **5 min**

B.P10. F. Feradov. EEG Image Features for Classification of Emotional States. *Technical University of Varna, Bulgaria* - **5 min**

B.P11. E. Nikolova, B. Ganev, E. Gieva. Wearable Intelligent Textile Suits for Telemetry Monitoring in Pediatrics. *Technical University of Sofia, Bulgaria - 5 min*

Education and Learning Technologies

Chairman – George Angelov

B.P12. M. Parcheva. Formation and Development of Entrepreneurial Competences a Challenge to Digital Environmental Training Programmes. *Technical University of Varna, Bulgaria - 5 min*

B.P13. B. Ujkani, D. Minkovska, L. Stoyanova. A Machine Learning Approach for Predicting Student Enrollment in the University. *Technical University of Sofia, Bulgaria - 5 min*

B.P14. A. Borodzhieva, I. Tsvetkova. An Approach for Synthesis of Magnitude Comparators. *University of Ruse “Angel Kanchev”, Bulgaria - 5 min*

B.P15. V. Rankovska. Review of Open-source Microcontroller and Programmable Logic Development Boards. *Technical University of Gabrovo, Bulgaria - 5 min*

B.P16. A. Chekichev, D. Shehova, S. Asenov, K. Asparuhova. Research and Teaching of Amplitude Modulation Using Matlab and Emona Instrument Trainer in Engineering Education. *Plovdiv University “Paisii Hilendarski”, Technical University of Sofia, Bulgaria - 5 min*

Microelectronics

Chairman – George Angelov

B.P17. S. Lozanova, M. Ralchev, A. Ivanov, C. Roumenin. Sensor with Subsequent Measurement of X, Y and Z Magnetic-field Components. *Bulgarian Academy of Sciences, Bulgaria - 5 min*

B.P18. G. Angelov, R. Rusev, D. Nikolov, R. Rusev. Identifying Delamination in Integrated Circuits using Surface Acoustic Microscopy. *Technical University of Sofia, Bulgaria - 5 min*

B.P19. D. Sami, D. Levski, G. Meynants, M. Waeny, N. Dimitrov, G. Bochev, R. Kandilarov. A Flexible CMOS Test-Pixel Readout System. *Photolithics OOD, Ruse, University of Ruse “Angel Kanchev”, Bulgaria, KU Leuven, Belgium - 5 min*

B.P20. G. Angelov, D. Nikolov, B. Dobrichkov, M. Spasova. Characterization of 64-bit DRAM based on FinFETs and CNTFETs. *Technical University of Sofia, Bulgaria - 5 min*

Session C

Chairman – Stoyan Nihtianov

- C.1. D. Ugrenovic, J. Vankeirsbilck, D. Vanoost, C. R. Kancharla, T. Holvoet, J. Boydens.** Towards Classification Trustworthiness: One-class Classifier Ensemble. *KU Leuven, Belgium* - **20 min**
- C.2. A. G. Gheorghe, M. E. Marin, C. G. Bortosu.** Approximate Symbolic Pole/Zero Expressions of a Band-stop Filter. *Politehnica University of Bucharest, Romania* - **20 min**
- C.3. R. Taherkhani, S. Nihtianov.** Experimental Study of the Applicability of Wireless Communication in Vacuum Environments. *Delft University of Technology, the Netherlands* - **20 min**
- C.4. R. Taherkhani, S. Nihtianov.** Power Consumption Characteristic of Wireless Transceivers. *Delft University of Technology, the Netherlands* - **20 min**
- C.5. M. Al Disi, A. M. Zaki, Q. Fan, S. Nihtianov.** High-Count Rate, Low Power and Low Noise Single Electron Readout ASIC in 65nm CMOS Technology. *Delft University of Technology, the Netherlands* - **20 min**

Posters online

Chairman – Georgy Mihov

- C.P1. D. Dobrev, E. Alnasser, T. Neycheva.** Analysis of AC Amplifiers with Ultra-low Corner Frequency by Using Bootstrapping. *Bulgarian Academy of Sciences, Bulgaria, NouTronics R&D group, Karaj, Iran* - **5 min**
- C.P2. N. Shopov, A. Bosakova-Ardenska, I. Topalov.** Classification of Bulgarian white brined cheese by manufacturer. *University of Food Technologies, Plovdiv, Bulgaria* - **5 min**
- C.P3. M. Mateva, M. Angelova.** Speech Recognition with Transformers – Creating and Testing Datasets for Bulgarian Language. *Technical University of Sofia, Bulgaria* - **5 min**
- C.P4. S. Sadinov, K. Angelov.** Design of Transmission Channel Simulator for Communication with Artificial Pico- and Nanosatellites. *Technical University of Gabrovo, Bulgaria* - **5 min**
- C.P5. H. Hristov, T. Penev, K. Dimitrov.** Use of Infrared Thermography to Detect Heat Stress in Dairy Cows. *Technical University of Sofia, Trakia University, Stara Zagora, Bulgaria* - **5 min**
- C.P6. K. Dimitrov, D. Saliev, I. Damyanov, L. Laskov, T. Valkovski.** Infrared Thermal Monitoring of Intelligent Grassland via Drone. *Technical University of Sofia, Bulgaria* - **5 min**
- C.P7. D. Dobrev, E. Alnasser, T. Neycheva.** Application of Active Biased Integrators for Biosignal Processing. *Bulgarian Academy of Sciences, Bulgaria, NouTronics R&D group, Karaj, Iran* - **5 min**

- C.P8. D. Chikurtev, P. Stoev, I. Andonov, A. Chikurteva.** Research and Design of a Wearable Robot for Wrist Rehabilitation. *Bulgarian Academy of Sciences, South-West University "Neofit Rilski", Blagoevgrad, Bulgaria - 5 min*
- C.P9. P. Nikovski, N. Doychinov.** A Prediction Model of Humidity Sensor Response. *University of Food Technologies, Plovdiv, Bulgaria - 5 min*
- C.P10. N. Nikolov, M. Alexandrova.** On-Off Control Adaptive to System Disturbances. *Technical University of Varna, Bulgaria - 5 min*
- C.P11. S. Asenov, D. Tokmakov.** Low Current Measurement System for Wireless Sensor Nodes. *Plovdiv University "Paisii Hilendarski", Bulgaria - 5 min*

[Room 2](#),

Thursday,

September 16, 2021

1:30 p.m. EET

Session D

Testing, Quality and Reliability

Chairman – Anna Stoyanova

- D.P1. R. Trifonov, D. Gotseva, P. Stoynov.** Brute Force Network Attack Detection through Neural Networks. *Technical University of Sofia, Bulgaria - 5 min*
- D.P2. M. Ivanova, V. Tsenev, B. Dimitrov.** Manufacturing Process Improvement through FMEA Analysis and Fuzzy Logic. *Technical University of Sofia, Bulgaria - 5 min*
- D.P3. A. Stoyanova.** Smart System with Infrared Thermography for Diagnostics of Batteries' Technical Condition. *Technical University of Sofia, Bulgaria - 5 min*

Quantum, Nuclear and Optoelectronics

Chairman – Anna Stoyanova

- D.P4. P. Pavlova, B. Pachedjieva.** Investigation on the Possibilities of Tracking Dynamic Visibility Changes in Images. *Technical University of Sofia, Branch Plovdiv, Bulgaria - 5 min*
- D.P5. M. Nenchev, M. Deneva.** Development of Interference Wedged Structures for Direct Registration and Quantitative Evaluation of Hg in Gas Discharge in Lamps and in Air. *Technical University of Sofia, Branch Plovdiv, Bulgaria - 5 min*
- D.P6. M. Deneva, M. Nenchev, M. Marinova.** Light Beam Splitters Based on Complex MultiInterference Wedged Structures that Use Only Components with Fresnel's Reflection. *Technical University of Sofia, Branch Plovdiv, Bulgaria - 5 min*

Nanoelectronics and Technologies in Electronics

Chairman – Ivaylo Zhivkov

- D.P7. B. Blagoev, P. Terziyska, P. Tzvetkov, D. Kovacheva, P. Ivanov, V. Mehandzhiev, D. Dimitrov.** Low Temperature ALD Films on Transparent and Flexible Substrates. *Bulgarian Academy of Sciences, Bulgaria - 5 min*
- D.P8. B. Tzaneva, M. Georgieva, D. Lazarova, M. Petrova.** Uniformity of Electrochemical Deposition on Thin Copper Layers. *Technical University of Sofia, Bulgarian Academy of Sciences, Bulgaria - 5 min*
- D.P9. N. Minev, K. Buchkov, C. Dikov, V. Videva, I. Avramova, P. Rafailov, D. Dimitrov, V. Marinova.** Properties Analysis of 2D PtSe₂ Layers Grown by Thermally Assisted Conversion of Chemical Vapor Deposition. *Bulgarian Academy of Sciences, Sofia University "St. Kl. Ohridski", Bulgaria - 5 min*
- D.P10. I. Dionisiev, N. Minev, D. Dimitrov, V. Videva, K. Buchkov, H. Dikov, P. Rafailov, V. Marinova.** 2D WSe₂ Films Synthesized by Thermally Assisted Conversion Method. *Bulgarian Academy of Sciences, Sofia University "St. Kl. Ohridski", Bulgaria - 5 min*

[Room 1](#),

Friday,

September 17, 2021

9:00 a.m. EET

Session E

Chairman – Rossen Radonov

- E.1. R. Aepuru, L. Saavedra, R. V. Mangalaraja, H.S. Panda.** Polyaniline Modified Zinc Oxide Based Flexible Polymer Nanocomposite for Electomechanical Applications. *Universidad Tecnológica Metropolitana, Santiago, University of Concepción, Chile, Defence Institute of Advanced Technology, Pune-25, India - 20 min*
- E.2. R. Aepuru, V. Kumar, P. Verma, P.K. Sahoo, H.S. Panda.** Polarization Induced Multiferroic Bismuth Ferrite Nanostructures: Investigation of Dielectric and Magnetic Properties. *Universidad Tecnológica Metropolitana, Santiago, Chile, Defence Institute of Advanced Technology, Pune-25, Siksha 'O' Anusandhan, Deemed to Be University, Bhubaneswar, India - 20 min*
- E.3. T. Stoilova, K. Stoilova, M. Vladimirov.** Entrepreneurship and Management in Real Estate Trades. *Bulgarian Academy of Sciences, Varna University of Economics, Bulgaria - 20 min*
- E.4. L. Buysse, Q. Van den Broucke, S. Verslype, J. Peuteman, J. Boydens, D. Pissoort.** FPGA-based Digital Twins of Microcontroller Peripherals for Verification of Embedded Software in a Distance Learning Environment. *KU Leuven, Belgium - 20 min*
- E.5. M. Grether, J. Ovtcharova, M. Marinov.** Research on Fault Diagnosis Expert System of CNC Machine Tool. *Karlsruhe Institute of Technology, Germany, Technical University of Sofia, Bulgaria - 20 min*

E.6. N. Gowthaman, V. Srivastava. InP/AlGaAs Based CSDG MOSFET With Au/Pt Gate Materials for High Frequency/Hybrid Applications. *University of KwaZulu-Natal, Durban, South Africa - 20 min*

Posters online

Chairman – Mariya Aleksandrova-Pandieva

E.P1. T. Vlahov, Y. Marinov, G. Hadjichristov, G. Ivanov. Electrical Impedance Spectroscopy-Based Detection and Quantification of Methanol Vapors by Use of Phospholipid Langmuir-Blodgett Film. *Bulgarian Academy of Sciences, University of Architecture, Civil Engineering and Geodesy (UACEG), Sofia, Bulgaria - 5 min*

E.P2. T. Vlahov, G. Exner, Y. Marinov, G. Hadjichristov. Glassy-State Discotic Liquid Crystals and Their Nanocomposites with Single-Walled Carbon Nanotubes: DSC and Optical Absorption. *Bulgarian Academy of Sciences, University of Plovdiv "Paisii Hilendarski", Bulgaria - 5 min*

E.P3. K. Ruskova, V. Toteva, L. Gonsalvesh-Musakova. Production of Activated Carbon Based on Oak Sawdust by Chemical Activation. *Technical University of Sofia, University of Chemical Technology and Metallurgy, Sofia, Burgas University "Prof. Dr Assen Zlatarov", Bulgaria - 5 min*

E.P4. V. Videkov, B. Tzaneva. Topological structure of thick anodic aluminum oxide. *Technical University of Sofia, Bulgaria - 5 min*

E.P5. M. Aleksandrova, G. Kolev, G. Dobrikov, K. Denishev. Theoretical Design and Fabrication Process for Perovskite LiTaO₃-based Infrared Detectors. *Technical University of Sofia, Bulgaria - 5 min*

E.P6. I. Vrublevsky, K. Chernyakova, N. Lushpa, A. Tuchkovsky, B. Tzaneva, V. Videkov. Obtaining, Properties and Application of Nanoscale Films of Anodic Titanium Dioxide on Ti-Al Films for Perovskite Solar Cells. *Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus, State research institute Center for Physical Sciences and Technology, Vilnius, Lithuania, Technical University of Sofia, Bulgaria - 5 min*

E.P7. S. Dimitrov, E. Trichkova-Kashamova. Formal Modeling of Optimal Inventorying in Animal Husbandry. *Bulgarian Academy of Sciences, Bulgaria - 5 min*

E.P8. N. Vakrilov, N. Kafadarova, D. Zlatanski. Application of Infrared Imaging in the Field of Electrical Engineering. *University of Plovdiv "Paisii Hilendarski", Bulgaria - 5 min*

E.P9. R. Ilieva, M. Angelov. Template for Building Manageable Data Mining Autonomous Process with RapidMiner Studio. *Technical University of Sofia, Bulgaria - 5 min*

Chairman – Katya Asparuhova

E.P10. R. Petkov. Digital Media Literacy, Artificial Intelligence and Modernization of Youth Career Services. *Technical University of Sofia, Bulgaria - 5 min*

- E.P11. S. Filipova-Petrakieva, S. Shopov.** Educational Application for Information Protection with the use of Cryptographic Methods – part I. *Technical University of Sofia, Bulgaria - 5 min*
- E.P12. E. Trichkova-Kashamova.** Portfolio Approach for Optimization the Usage of E-resources. *Bulgarian Academy of Sciences, Bulgaria - 5 min*
- E.P13. I. Pandiev.** Design and Testing of Laboratory System for Study of Programmable Waveform Generator Based on Direct Digital Synthesis. *Technical University of Sofia, Bulgaria - 5 min*
- E.P14. D. Stoyanova, D. Zlatanski, N. Mileva.** Enhancing Teaching - Learning in Electrical Engineering Course during COVID-19 Pandemic. *University of Plovdiv "Paisii Hilendarski", Bulgaria - 5 min*
- E.P15. A. Chikurteva, N. Spasova, S. Bogdanov.** Interactive Platform for Project-Based Learning based on Web Technologies. *Bulgarian Academy of Sciences, Technical University of Sofia, Bulgaria - 5 min*
- E.P16. S. Asenov, D. Tokmakov.** Dual MCU Wireless Sensor Node for Engineering Education. *Plovdiv University "Paisii Hilendarski", Bulgaria - 5 min*
- E.P17. P. Linova, N. Kalcheva, N. Nikolov.** Use of Deductive and/or Inductive Approach in the Study of Nonlinear Programming Problems. *Technical University of Varna, Bulgaria - 5 min*
- E.P18. G. Popov, A. Popova.** J-curve of the Innovation Process: How the Organization's Financial Assets Changes over Time? *Technical University of Sofia, Bulgaria - 5 min*
- E.P19. G. Popov.** Analysis of Education in Bulgaria: Should Everyone be Able to Complete Higher Education and How Does This Affect Society? *Technical University of Sofia, Bulgaria - 5 min*

Room 2,	Friday,	September 17, 2021	9:00 a.m. EET
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Session F

Embedded Systems

Chairman – Grisha Spasov

- F.P1. N. Nikolov, D. Gotseva.** Design and Research of IoT Room Monitoring System. *Technical University of Sofia, Bulgaria - 5 min*
- F.P2. L. Bogdanov, E. Yankov, N. Iliev.** Bluetooth-controlled Programmable Power Supply for Experimental Studies in Hazardous Environments. *Technical University of Sofia, University of Ruse "Angel Kanchev", Nextlab Ltd, Sofia, Bulgaria - 5 min*
- F.P3. L. Bogdanov, R. Ivanov.** Linker Energy Optimizations in Microcontrollers Using the GCC Toolchain: A Case Study. *Technical University of Sofia, Bulgaria - 5 min*
- F.P4. S. Rizanov, P. Yakimov.** Cattle Disease Detecting IoT Thermographic System. *Technical University of Sofia, Bulgaria - 5 min*

F.P5. V. Stefanova-Stoyanova, K. Stoyanov, P. Danov. Comparison of Architectural Models of IoT Systems - Advantages and Disadvantages. *Technical University of Sofia, Bulgaria - 5 min*

F.P6. T. Mecheva, N. Kakanakov. Traffic Flow Model Based on Real Data. *Technical University of Sofia, Branch Plovdiv, Bulgaria - 5 min*

Instrumentation and Measurement

Chairman – Marin Marinov

F.P7. R. Miletiev, R. Yordanov, E. Iontchev. Design of NDIR Thermopile-Based Digital Board. *Technical University of Sofia, Higher School of Transport “T. Kableshkov”, Bulgaria - 5 min*

F.P8. V. Tsenev, V. Videkov, N. Spasova. Measurement of PCB Deformation during Parametric Testing and Evaluation of the Impact on the Installed Components. *Technical University of Sofia, Bulgaria - 5 min*

F.P9. V. Tsenev, V. Videkov, N. Spasova. Comparative Analysis of the Measured Deformation of PCBA (Printed circuit board assembly) in the Production of Electronic Modules. *Technical University of Sofia, Bulgaria - 5 min*

F.P10. L. Miteva, K. Yovchev, I. Chavdarov. Point-to-point Motion Planning with Obstacle Avoidance for Hard Constrained Redundant Robotic Manipulators. *Sofia University “St. Kliment Ohridski”, Bulgarian Academy of Sciences, Bulgaria - 5 min*

F.P11. V. Mateev, M. Ralchev, I. Marinova. Hall Effect Current Sensor with 3D Printed Magnetic Core. *Technical University of Sofia, Bulgaria - 5 min*

F.P12. V. Mateev, I. Marinova. Directional Sensing of CO₂ with Catalytic Sensors. *Technical University of Sofia, Bulgaria - 5 min*

F.P13. G. Nikolov, B. Ganev, M. Marinov, V. Galabov. Comparative Analysis of Sensors for Soil Moisture Measurement. *Technical University of Sofia, Bulgaria - 5 min*

F.P14. B. Ganev, A. Ivanov, M. Marinov, N. Nikolov, L. Kochev. Pendulum Experimental Study and Analysis with MEMS Accelerometer. *Technical University of Sofia, Higher School of Transport “T. Kableshkov”, Bulgaria - 5 min*

F.P15. S. Hensel, M. Marinov, A. Seigel, B. Ganev. Experimental Setup for Neural Networks and Camera-Based Navigation of Mobile Systems. *University of Applied Sciences Offenburg, Germany, Technical University of Sofia, Bulgaria - 5 min*

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F.P16. T. Brusev, B. Ganev. High-Current Buck-Boost DC-DC Converter Implemented on PCB. *Technical University of Sofia, Bulgaria - 5 min*

F.P17. K. Kishkin, B. Ganev, D. Arnaudov, M. Marinov. LabVIEW Based System for Determining Energy Flows in Energy Storage System. *Technical University of Sofia, Bulgaria - 5 min*

- F.P18. F. Stoimenov, V. Dimitrov, D. Arnaudov.** Electronic Load Modeling for VRM. *Technical University of Sofia, Bulgaria - 5 min*
- F.P19. T. Hranov, N. Hinov, A. Lilova.** Comparison of Boost Converter Topologies for charging single cell Li-ION. *Technical University of Sofia, Bulgaria - 5 min*
- F.P20. N. Hinov, T. Hranov, F. Nikolov.** LABVIEW Based Control System of Induction Heating Power Converter for Ferromagnetic Materials Melting. *Technical University of Sofia, Bulgaria - 5 min*
- F.P21. G. Zashev, V. Dimitrov, D. Arnaudov.** Modeling and Frequency-Domain Characterizations of PWM Regulators. *Technical University of Sofia, Bulgaria - 5 min*

Presentation preparation

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