



International conference on High Technology for Sustainable Development

HiTECH 2019

PROGRAMME

**10 – 12 October 2019
Sofia**

**National Science and Technical Centre
108 Rakovski Str.**



International conference on High Technology for Sustainable Development HiTECH 2019

Organized by:

Technical University of Sofia (TU-Sofia)

IEEE Bulgarian Section

**Federation of the Scientific and Technical Unions in Bulgaria
(FSTU)**

University of Technology of Troyes

In cooperation with:

Institut Francais Bulgarie



**The Union of Electronics, Electrical Engineering and
Communications (CEEC)**



International conference on High Technology for Sustainable Development HiTECH 2019

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Ivan YATCHEV, Bulgaria
Zahary ZARKOV, Bulgaria
Gennadiy ZINOVIEV, Russia

General Programme

Day	Hour	Event
Wednesday 9 October	16.00 – 18.00	Registration of participants
Thursday 10 October	09.00 – 10.00	Registration of participants Hall 4
	10.00 – 10.15	Opening Session Hall 4
	10.15 – 11.15	Invited Papers Hall 4
	11.15 – 13.00	Session 1, Electrical machines and apparatus Hall 4
	13.00 – 14.00	Lunch break, Cocktail-party Hall 4
	14.00 – 15.00	Session 2, Electronics Hall 4
	15.00 – 16.00	Session 3, Automation, Robotics and Control Hall 4
	16.00 – 17.30	Session 4, System Engineering, Computer Technologies, Telecommunications Engineering Hall 4
	17.30 – 19.00	Session 5, Education 4.0, Smart city and smart factory Hall 4
	19.00 – 21.00	Cocktail-party Hall 4
Friday 11 October	08.30 – 09.30	Session 6, Engineering Management, High technologies management and Industry Applications Hall 109
	09.30 – 10.45	Session 7, Renewable energy and power quality, Economic generation, transmission, distribution, conversion, measurement and control of electric energy Hall 109
	10.45 – 11.00	Coffee break
	11.00 – 13.30	Session 8, Advanced materials Hall 109
	13.30 – 14.00	Closing Session
Saturday 12 October	10.00 – 14.00	Cultural Events

Opening Session

Hall 4, Tuesday 10 October, 10.00 - 10.15

10.00 - Opening Session

Invited Papers

Hall 4, Tuesday 10 October, 10.15 - 11.15

1. TORQUE AND POWER DENSITY OF COAXIAL MAGNETIC GEAR

Valentin Mateev, Iliana Marinova

2. COMPLEXITY EVALUATION OF TENSOR DECOMPOSITION USING 3D INVERSE SPECTRUM PYRAMID IN RESPECT OF DETERMINISTIC ORTHOGONAL TRANSFORMS

Roumen Kountchev, Rumen Mironov, Roumiana Kountcheva

3. EVALUATING SOLAR ENERGY HARVESTING USING ARTIFICIAL NEURAL NETWORKS: A CASE STUDY IN TOGO

Koffi Agbeblewu Dotche, Adekunlé Akim Salami, Koffi Mawugno Kodjo Kodjo, Yawa Pamela C. D. BLU, Yao Essemu Julien DIABO

Session 1

Hall 4, Tuesday 10 October, 11.15 - 13.00

Chairpersons: Iliana MARINOVA

Electrical machines and apparatus

1. VIBRATION AND NOISE ANALYSIS OF COAXIAL MAGNETIC GEAR

Valentin Mateev, Georgi Ivanov, Iliana Marinova

2. CURRENT SENSOR TIME RESPONSE INFLUENCE ON HARMONIC SPECTRUM ANALYSIS

Valentin Mateev, Martin Ralchev, Iliana Marinova

3. 3D CONJUGATE ELECTROMAGNETIC-THERMAL-FLUID ANALYSIS OF A LOW VOLTAGE SWITCHBOARD

Ivan Hadzhiev

4. ANALYSIS OF THE INFLUENCE OF SOME FACTORS ON BOTH THE ELECTRIC AND THERMAL FIELD OF A POWER DISTRIBUTION BLOCK

Ivan Hadzhiev

5. ANALYSIS OF HIGHER HARMONICS DURING REACTIVE POWER COMPENSATION BY AN AUTOMATIC CAPACITOR BANK

Ivan HADZHIEV, Dian MALAMOV, Iosko Balabozov, Ivan YATCHEV

6. EXPERIMENTAL ANALYSIS OF TRANSIENT PROCESSES DURING SWITCHING IN A MEDIUM VOLTAGE VACUUM CIRCUIT BREAKER

Ivan HADZHIEV, Dian MALAMOV, Iosko Balabozov, Ivan YATCHEV

7. SHORT-CIRCUIT CURRENTS MODELING FOR A WIND FARM, WORKING IN PARALLEL TO THE ELECTRIC POWER GRID

Ivan Hadzhiev, Dian MALAMOV

Session 2
Hall 4, Tuesday 10 October, 14.00 - 15.00

Chairpersons: Nikolay HINOV

Electronics

1. EVALUATION OF ENERGY PARAMETERS OF MULTIPLE EVS

Gergana Vacheva, Nikolay Hinov, Dimitar Penev

2. MICROPROCESSOR SYSTEM FOR STUDYING THE PARAMETERS OF DUAL-COLLECTOR BIPOLAR MAGNETIC TRANSISTOR

Goran Goranov, Anatolii Aleksandrov, Kazolis Dimitrios, Gergana Mironova

3. MATHEMATICAL MODEL OF INDUCTION HEATING WITH HEAT TRANSFER OF CYLINDRICAL BODY FOR PRESSING TREATMENT

Bogdan Gilev, Hristo Ibrishimov

4. REPRESENTATION WITH INDEX MATRICES OF SINGLE ENDED PRIMARY INDUCTOR CONVERTER FUNCTIONING

Valeri Gochev, Polya Gocheva

5. MODEL-BASED OPTIMIZATION OF A BOOST DC-DC CONVERTER

Nikolay Hinov, Tsveti Hranov

6. ALL DIGITAL PLL FOR WIRELESS POWER TRANSMIT

Goran Goranov

Session 3
Hall 4, Tuesday 10 October, 15.00 - 16.00

Chairpersons: Pancho TOMOV

Automation, Robotics and Control

1. AI APPLICATIONS FOR IMPROVING ADDITIVE MANUFACTURING PROCESS

Roumiana Ilieva, Mario Nikolov

2. ARTIFICIAL NEURAL NETWORKS WITH JAVA IMPLEMENTATION

Roumiana Ilieva, Yoto Nikolov

3. APPLICATION OF RECURSIVE ESTIMATION AND CONTROL OF THE REAL DC MOTOR PARAMETERS IN ADAPTIVE SYSTEM WITH SELF-TUNING REGULATOR WITH MINIMUM VARIANCE

Ivan Grigorov, Nasko Atanasov

4. APPLICATION OF RECURSIVE ESTIMATION AND CONTROL OF THE REAL DC MOTOR PARAMETERS IN ADAPTIVE POLE PLACEMENT CONTROL SYSTEM

Ivan Grigorov, Nasko Atanasov

5. INFLUENCE OF THE SAMPLING PERIOD IN THE IDENTIFICATION OF A DUAL-MASS DC ELECTROMECHANICAL SYSTEM USING SYMLET WAVELETS

Mariyana Todorova, Reneta Parvanova

6. OPTIMIZING THE SELECTION OF THE WEIGHTING MATRICES Q AND R IN LINEAR QUADRATIC REGULATOR

Martin Kambushev, Stefan Bilyderov, Reneta Dimitrova, Stiliyan Nikolov

7. NEW APPROACH AT MECHANICAL ENGRAVING OF DETAILS WITH LARGE SIZES

Stiliyan Nikolov, Reneta Dimitrova, Ivan Topov

8. OPTIMIZATION OF THE WAGONS SORTING PROCESS FOR NEEDS OF REAL-TIME MARSHALLING YARD MANAGEMENT SYSTEM

Pancho Tomov, Lubomir Dimitrov, Sanel Purgich, Mirena Todorova

9. DIGITALIZATION IN INFORMATION ACTIVITIES RELATED TO SYSTEMS FOR MANAGING DISCRETE PRODUCTION PROCESSES FOR MANAGING DISCRETE PRODUCTION PROCESSES

Pancho Tomov, Emil Entchev

10. APPLICATION OF CAD SYSTEMS IN DISCRETE PRODUCTION

Pancho Tomov

11. MODEL OF DATA BASES OF VETERINARY MEDICAL JOURNAL OF APIARY

Boris Grasiani

Session 4

Hall 4, Tuesday 10 October, 16.00 - 17.30

Chairpersons: Daniela GOTSEVA, Snezhana PLESHKOVA

System Engineering, Computer Technologies, Telecommunications Engineering

1. NEURAL NETWORKS FOR INTRUSION DETECTION

Daniela Gotseva, Roumen Trifonov, Pavel Stoyanov

2. A DISCRETE MODEL OF MULTI-AGENT INTRUSION DETECTION SYSTEM

George Popov

3. INFORMATION SECURITY OF PHP APPLICATIONS

Georgi Georgiev

4. AN APPROACH FOR INTEGRATING JOOMLA WITH LDAP

Goran Goranov, Radoslava Hristova

5. METHOD AND ALGORITHM FOR CALIBRATION ACCURACY EVALUATION OF UNCOOLED THERMO-VISUAL INFRARED SENSORS

Snezhana Pleshkova

6. ALGORITHM FOR MOTION MANAGEMENT BY INTERACTION BETWEEN MOBILE ROBOT AND HUMAN

Snezhana Pleshkova

7. PERFORMANCE COMPARISON OF IP NETWORK USING MPLS AND MPLS TE

Ivan Nedyalkov, Alexey Stefanov, Gerogi Georgiev

Session 5

Hall 4, Tuesday 10 October, 17.30 - 19.00

Chairpersons: Siyka DEMIROVA

Education 4.0

1. STUDYING ENTREPRENEURIAL ATTITUDES OF STUDENTS - CASE STUDY OF TU-VARNA

Siyka Demirova, Sibel Ahmedova

2. GENDER-COMPARATIVE STUDY THE BEHAVIORAL FACTORS IMPACT ON ENTREPRENEURSHIP INTENTIONS OF BUSINESS STUDENTS

Ivan Dimitrov, Adile Dimitrova

3. GENDER-COMPARATIVE STUDY THE ENVIRONMENTAL FACTORS IMPACT ON ENTREPRENEURSHIP INTENTIONS OF BUSINESS STUDENTS

Ivan Dimitrov, Adile Dimitrova

4. STUDY OF PWM SOLAR CHARGE CONTROLLER OPERATION MODES IN AUTONOMOUS DC SYSTEM

Hristiyan Kanchev, Nikolay Hinov, Ivomir Antonov

5. AN ANALYSIS OF INTEGRATING E-LEARNING AND OPEN EDUCATIONAL RESOURCES INTO CLASSROOM

Daniela Minkovska, Lyudmila Stoyanova, Adelina Aleksieva

6. LEARNING ANALYTICS FOR BETTER ACADEMIC PERFORMANCE

Galina Ilieva, Tania Yankova

7. THE TRAINING SYSTEM FOR THE STUDY OF COMPUTER CLUSTERS

Stoyanka Mollova, Kamen Seymenliyski, Silviya Letskovska, Radoslav Simionov, Eldar Zaerov

8. LABORATORY SYSTEM FOR MONITORING AND FORECASTING THE PARAMETERS OF SEA WAVES

Kamen Seymenliyski, Silviya Letskovska, Eldar Zaerov, Radoslav Simionov, Stoyanka Mollova

9. SOFTWARE PLATFORMS FOR MODELING OF TELECOMMUNICATION NETWORKS

Ivan Nedyalkov, Alexey Stefanov, Gerogi Georgiev

10. BLENDED LEARNING AS A FORM OF TRANSITION FROM TRADITIONAL LEARNING TO DIGITAL LEARNING

Sergey Krasnov, Svetlana Kalmykova, Aleks Krasnov

11. AN EXPERIMENT ON THE JOINT USE OF THE HEURISTIC AND PROJECT METHODS AT THE UNIVERSITY

Svitlana Ivanova, Lubomir Dimitrov, Viktor Ivanov, Galyna Naleva

12. CREATIVITY ENHANCEMENT METHOD FOR STEM EDUCATION

Viktor Ivanov, Lubomir Dimitrov, Svitlana Ivanova, Olena Olefir

Smart city and smart factory

1. KEY PERFORMANCE INDICATORS THE PROVIDERS OF LOGISTIC SERVICES: EXPERIENCE OF SELECTED COMPANIES

Siyka Demirova, Ekaterina Chytilova, Marie Jurova

2. TRANSFORMATION OF CONSUMER'S DIGITAL SHADOW IN A SMART CITY

Sergey Krasnov, Svetlana Bozhuk, Aleks Krasnov

3. ALGORITHMS OF ECONOMICALLY REASONABLE REGULATION FOR EXTERNAL ACCOUNTING

Sergey Krasnov, Svetlana Bozhuk, Aleks Krasnov

Session 6

Hall 109, Friday 11 October, 08.30 – 09.30

Chairpersons: Kiril ANGUELOV

Engineering Management, High technologies management and Industry Applications

1. INFLUENTIAL FACTORS ON THE PROCESS OF TECHNOLOGICAL DEVELOPMENT THROUGH INNOVATIVE AND PLANNED AGING

Dimitar Damianov

2. APPLICATION OF INNOVATIONS IN SMES FROM WINE INDUSTRY IN BULGARIA: THE CASE OF PLOVDIV REGION

Mina Angelova, Daniela Pastarmadzhieva

4. EXPLORING OPERATIONS MANAGEMENT SYSTEM OF BULGARIAN INDUSTRIAL ENTERPRISES AND ANALYSING OPORTUNITIES FOR IMPLEMENTING INDUSTRY 4.0

Nataliya Koleva, Gabriela Peneva, Ognyan Andreev

5. IMPLEMENTATION OF BLOCK CHAIN TECHNOLOGIES IN THE CULTURAL AND CREATIVE INDUSTRIES

Miglena Angelova

6. POSSIBILITIES FOR INNOVATIONS IN SPECIFIC SPHERES OF CULTURAL AND CREATIVE INDUSTRIES

Miglena Angelova

7. IMPLEMENTATION OF BLOCK CHAIN TECHNOLOGIES IN THE ENGINEERING MANAGEMENT

Kiril Anguelov

8. ANALYSIS OF THE POTENTIAL FOR DEVELOPMENT OF THE BIO-ECONOMY IN BULGARIA

Valentina Nikolova –Alexieva, Ana Yaneva, Georgi Toskov

9. MARKETING RESEARCH AS A MAIN FACTOR IN THE STRATEGIC MANAGEMENT OF BIO-BASED INDUSTRIES IN BULGARIA

Ivelina Kulova, Valentina Nikolova-Alexieva

Session 7

Hall 109, Friday 11 October, 09.30 – 10.45

Chairpersons: Dimo STOILOV

Renewable energy and power quality

1. WIND ELECTRIC MACHINE WITHOUT STATORS

Dimo Stoilov, Luben Stoilov, Georgi Stoilov

2. EVOLUTION OF THE ADVANCEMENTS IN CROSS AXIS WIND ELECTRIC MACHINES

Dimo Stoilov, Luben Stoilov, Georgi Stoilov

3. EVALUATING SOLAR ENERGY HARVESTING USING ARTIFICIAL NEURAL NETWORKS: A CASE STUDY IN TOGO

Koffi Agbeblewu Dotche, Adekunlé Akim Salami, Koffi Mawugno Kodjo Kodjo, Yawa Pamela C. D. BLU, Yao Essemu Julien DIABO

4. SYNTHESIS AND STUDY ON WASTE HEAT THERMOELECTRIC GENERATOR

Kaloyan Ivanov, Anatoliy Aleksandrov, Ivaylo Belovski

Economic generation, transmission, distribution, conversion, measurement and control of electric energy

1. FEASIBILITY STUDY FOR BATTERY ENERGY STORAGE APPLICATIONS IN BULGARIA'S ELECTRICITY SYSTEM

Viktor Garbev, Dimo Stoilov

2. OVERVIEW OF MODERN APPLICATIONS OF ENERGY STORAGE SYSTEMS

Ventsislav Mihaylov, Dimo Stoilov, Valentin Kolev

3. IMPACT OF THE FOREST FIRE ON THE POWER SUPPLY NETWORKS

Svetlin Antonov

4. STATISTICAL CHARACTERIZATION OF ELECTRIC POWER PRODUCTION AND IMPORTATION: CASE STUDY OF BENIN ELECTRICITY COMMUNITY (CEB)

Agbassou Guenoupkati, Adekunlé Akim Salami, Koffi Mawugno Kodjo, Kossi Napo

Session 8

Hall 109, Friday 11 October, 11.00 – 12.45

Chairpersons: Boriana TZANEVA

Advanced materials

1. CONTINUOUS CONSTRAINED BENDING WITH ACTIVE FRICTION FORCES BASED ON DOUBLE CONFORM PROCESS

Valentin Kamburov

2. ULTRASONIC ELECTROLESS METALLIZATION OF CARBON NANOTUBES AND ALUMINIUM SINTERING COMPONENTS

Valentin Kamburov, Rayna Dimitrova, Serjoga Valkanov

3. OPTIMIZATION OF THE TURNING PROCESS WITH EXPERIMENTAL ALUMINA-BASED CERAMIC CUTTING TOOLS USING A GENERALIZED UTILITY FUNCTION

Irina Aleksandrova, Trayan Hristov

4. CUTTING PERFORMANCE OF EXPERIMENTAL ALUMINA-BASED CERAMIC CUTTING TOOLS IN TURNING OF C45, 42CR4 AND 100CR6 STEELS

Irina Aleksandrova, Trayan Hristov

5. OBTAINING OF NANOCOMPOSITE MATERIAL WITH METAL MATRIX AND CARBIDE REINFORCING PARTICLES BY ELECTROMAGNETIC STIRRING

Rangel RANGELOV, Nikolay Hinov, Krum PETROV, Lidya VASILEVA

6. CONDUCTIVE SILVER LAYERS ON ANODIC ALUMINUM OXIDE

Boriana Tzaneva, Tobiya Karagyozev, Ekaterina Dobрева, Nadejda Koteva, Valentin Videkov

7. METAL OXIDES INFLUENCE ON THE MORPHOLOGY AND STRUCTURE OF THE POLYCHLOROPRENE ADHESIVE COMPOSITION

Kamelia Ruskova

8. OBTAINING OF ACTIVATED CARBON USING CHEMICAL ACTIVATION WITH KOH

Kamelia Ruskova

9. DEVELOPMENT AND EXPERIMENTATION OF TECHNOLOGY FOR PRODUCTION OF ALUMINUM ALLOY FOAMS USING CaCO₃

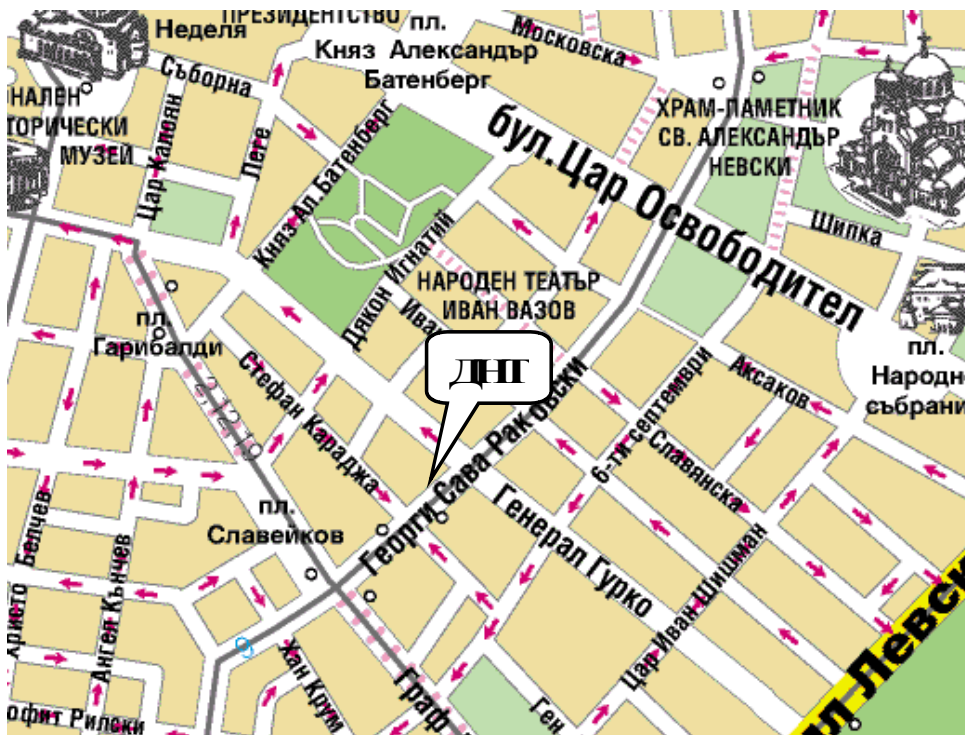
Rangel Rangelov, Krum Petrov

INFORMATION

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