

# 28<sup>th</sup> International Conference Radioelektronika 2018

Prague, Czech Republic, April 19-20, 2018

Thursday, April 19, 2018

08:15 – 09:00	Conference Registration
ARTEMIS 1+2	Opening, Main Partners Introduction, Partner Presentation, Invited Talk
09:00 – 10:00	<i>Chair: Miloš KLÍMA</i>
09:00 – 09:05	<b>Opening</b> <i>Miloš Klíma</i>
09:05 – 09:15	<b>Main Partners Introduction</b> <i>Tomáš Bydžovský (Rohde &amp; Schwarz), Tomáš Sedlář (SVS FEM)</i> <b>Partner Presentation</b> <i>Jan Macháč (Česká elektrotechnická společnost)</i>
09:15 – 10:00	<b>Invited Talk</b> <b>Holographic Imaging: still science fiction?</b> <i>Peter Schelkens (Vrije Universiteit Brussel – imec)</i>
ARTEMIS 1+2	Elements, Circuits and Systems I
10:00 – 10:45	<i>Chair: Josef DOBEŠ</i>
10:00 – 10:15	<b>Properties of One Type Memristor Emulator (#19)</b> <i>Milan Štork</i>
10:15 – 10:30	<b>Modeling and research of options for stabilizing systems of the output voltage of power supplies of travelling wave tubes (#27)</b> <i>Nikolai Kalistratov, Ekaterina Mirgorodskaya, Nikita Mityashin, Ivan Artyukhov, Sergei Stepanov and Yuri Tomashevsky</i>
10:30 – 10:45	<b>Adverse Effects of Digital Calibration Hardware on Low-Voltage Operational Amplifiers (#35)</b> <i>Michal Šovčík, Viera Stopjaková, Daniel Arbet, Martin Kováč and Miroslav Potočný</i>
10:45 – 11:15	Coffee Break & Exhibition
ARTEMIS 1+2	Elements, Circuits and Systems II
11:15 – 12:30	<i>Chair: Josef DOBEŠ</i>
11:15 – 11:30	<b>Numerical Simulation of Nonuniform Multiconductor Transmission Lines with HF Losses in Matlab (#84)</b> <i>Lubomír Brančík, Nawfal Al-Zubaidi R-Smith and Aslihan Kartci</i>
11:30 – 11:45	<b>Electronically Reconfigurable Universal Filter Based on VDTAs (#11)</b> <i>Lukáš Langhammer, Roman Šotner, Ondřej Domanský and Tomáš Hricko</i>
11:45 – 12:00	<b>Two-Stages Differential Amplifier for UWB Applications with Modified Cherry-Hooper Structure (#70)</b> <i>Miroslav Sokol, Pavol Galajda, Martin Pečovský and Stanislav Slovák</i>

12:00 – 12:15	<b>Low-Latency Implementation of CORDIC-Based Sorted QR Decomposition for High-Speed MIMO-OFDM System (#86)</b> <i>Hyukyeon Lee, Hanjun Kim, Minjung Cho and Jaeseok Kim</i>
12:15 – 12:30	<b>Multi-state memory cell with resonant tunnelling diodes: circuit tool for chaos generation (#53)</b> <i>Jiří Petržela</i>
12:30 – 14:00	Lunch at Hotel Artemis Restaurant & Exhibition
ARTEMIS 1+2	<b>Signal and Image Processing and Its Applications</b>
14:00 – 15:30	<i>Chair: Karel FLIEGEL</i>
14:00 – 14:15	<b>Cover Selection Steganography with Intra-Image Scanning (#85)</b> <i>Vladimír Hajduk and Dušan Levický</i>
14:15 – 14:30	<b>Design of an Active 2nd-Order Polyphase Filter for Image Rejection in Subsampling Receivers (#9)</b> <i>Daniel Maier and Hans-Georg Brachtendorf</i>
14:30 – 14:45	<b>Background estimation in difficult light conditions (#74)</b> <i>Maria Nasyrova and Stanislav Vitek</i>
14:45 – 15:00	<b>Advanced Plane Properties by Using Level Image (#76)</b> <i>Pavel Chmelař, Ladislav Beran, Natalija Chmelařová and Luboš Rejček</i>
15:00 – 15:15	<b>Advanced Point Cloud Estimation based on Multiple View Geometry (#63)</b> <i>Ján Hlubík, Patrik Kamencay, Róbert Hudec, Miroslav Benčo and Peter Sýkora</i>
15:15 – 15:30	<b>On the Sensitivity of Digital Predistortion to Impairments of Time-Interleaved A/D Converters (#93)</b> <i>Roman Maršálek, Tomáš Gotthans, Michal Harvánek and Ladislav Polák</i>
15:30 – 16:00	Coffee Break & Exhibition
ARTEMIS 1+2	<b>Tutorial</b>
17:15 – 18:00	<i>Chair: Miloš KLÍMA</i>
17:15 – 18:00	<b>Tutorial</b> <b>Mobile Communications and Internet-of-Things</b> <i>Václav Žalud (Czech Technical University in Prague)</i>
ARTEMIS 3+4	<b>Poster Session</b>
16:00 – 18:00	<b>Elements, Circuits and Systems</b>
1	<b>Applications of Novel Behavioral Implementation of a Controllable Generalized Current Conveyor (#56)</b> <i>Roman Šotner, Lukáš Langhammer, Jiří Petržela, Ondřej Domanský and Tomáš Dostál</i>
2	<b>Excess noise and deep level defects diagnostics in semiconductor barrier structures (#7)</b> <i>Tatyana Kholomina, Vladimir Litvinov, Alexander Ermachikhin and Andrey Semenov</i>
3	<b>Electromagnetic Compatibility of Pulse Rectifier with Pulse-width Modulation (#6)</b> <i>Václav Lenoč, Zdeněk Mašek, Dušan Čermák and Vladimír Schejbal</i>
4	<b>Investigation of Au/ZnO/Si MIS structures by capacitance-voltage characteristics method (#67)</b>

	<i>Vladimir Litvinov, Tatiana Kholomina, Alexander Ermachikhin, Andrey Semenov, Nikolay Rybin, Dmitry Gromov and Sergey Oleinik</i>
<b>5</b>	<b>Modular Evaluation Platform for Evaluation and Testing of Physically Unclonable Functions (#15)</b> <i>Marek Laban, Miloš Drutarovský, Viktor Fischer and Michal Varchola</i>
<b>6</b>	<b>Modeling and Simulation of a Low Power Magnetron as an Element of Electrical System (#44)</b> <i>Artem Zemtsov, Ivan Artyukhov, Sergei Stepanov, Ekaterina Mirgorodskaya, Nikita Mityashin and Nikolai Kalistratov</i>
<b>7</b>	<b>Primary Surveillance Radar of RSP-10M System (#20)</b> <i>Vadim Závodný, Vladimír Schejbal and Pavel Bezoušek</i>
<b>8</b>	<b>Anomalous Phenomena in Ultra High Voltage JFET Channel Pinching (#82)</b> <i>Stanislav Banáš, Josef Dobeš and Václav Paňko</i>
<b>9</b>	<b>Coexistence of Multiple Chaotic Attractors (#87)</b> <i>Milan Štork</i>
<b>16:00 – 18:00</b>	<b>Signal and Image Processing and Its Applications</b>
<b>10</b>	<b>Gunshot Recognition using Low Level Features in the Time Domain (#41)</b> <i>Martin Hrabina and Milan Sigmund</i>
<b>11</b>	<b>Beamforming With Small Diameter Microphone Array (#16)</b> <i>Imrich Andráš, Pavol Dolinský, Linus Michaeli and Ján Šaliga</i>
<b>12</b>	<b>Cooperative Clustering Algorithm Based on Brain Storm Optimization and K-Means (#57)</b> <i>Eva Tuba, Ivana Strumberger, Nebojsa Bacanin, Dejan Zivkovic and Milan Tuba</i>
<b>13</b>	<b>Reverberator's late reflections parameters calculation (#81)</b> <i>Peter Kubinec, Oldřich Ondráček, Miroslav Hagara, Adam Fibich and Tomáš Bagala</i>
<b>14</b>	<b>Linear Phase Design of Lattice Wave Digital Filters (#29)</b> <i>Christian Zeintl and Hans-Georg Brachtendorf</i>
<b>15</b>	<b>Textures classification based on DWT (#8)</b> <i>Ondrej Kováč, Peter Lukács and Iveta Gladišová</i>
<b>16</b>	<b>Image Encryption Technique with Key Diffused by Coupled Map Lattice (#14)</b> <i>Jakub Oravec, Ján Turán and Ľuboš Ovseník</i>
<b>17</b>	<b>High Sensitivity Experimental QRS Detector (#17)</b> <i>Pavol Dolinský, Imrich Andráš, Ján Šaliga and Linus Michaeli</i>
<b>18</b>	<b>Interpolation methods for the improvement of the point spread function estimation (#59)</b> <i>Petr Janout, Jakub Pospíšil, Karel Fliegel, Miloš Klíma and Petr Páta</i>
<b>16:00 – 18:00</b>	<b>Wireless RF and Microwave Systems</b>
<b>19</b>	<b>Instrumentation Amplifier for Ultra-Wideband Applications (#55)</b> <i>Martin Pečovský, Miroslav Repko, Stanislav Slovák, Miroslav Sokol and Pavol Galajda</i>
<b>20</b>	<b>Sensor network proposal based on IoT for a prediction system of the power output from photovoltaic panels (#36)</b>

	<i>Martin Vestenický, Slavomír Matúška, Róbert Hudec and Patrik Kamencay</i>
<b>21</b>	<b>Telemetry System of FIK III. Stratospheric Balloon (#43)</b> <i>Pavel Puričér, Jaroslav Laifr, Pavel Kovář and Jan Mikeš</i>
<b>22</b>	<b>Secondary Surveillance Radar for RSP-10M System (#83)</b> <i>Vadim Závodný, Pavel Bezoušek and Vladimír Schejbal</i>
<b>23</b>	<b>Single Plane V-Band Directional Coupler for Predistortion Compensation (#48)</b> <i>Tomáš Urbanec and Roman Maršálek</i>
<b>24</b>	<b>Fuzzy logic Based Channel Ranking for CR-MANET (#73)</b> <i>Dominik Nezník and Ľubomír Doboš</i>
<b>25</b>	<b>Effective Constitutive Parameters of Lossy Metamaterials with Mirror Cells (#34)</b> <i>Ouail Ouchetto, Said Jai Andaloussi and Saad Zaamoun</i> (TBC)
<b>16:00 – 18:00</b>	<b>Multimedia and Biomedical Systems</b>
<b>26</b>	<b>Numerical Analysis of Microwave Tomography System For Brain Stroke Detection (#88)</b> <i>Ilja Merunka, Ondřej Fišer, David Vrba and Jan Vrba</i>
<b>27</b>	<b>Drum Kit Sound Localization Tests on Binaural Hearing Model with ANN (#75)</b> <i>Jan Melechovský, Jaroslav Bouše, František Rund and Ekaterina Koshkina</i>
<b>28</b>	<b>Comparison of Two Objective Methods of Quality Assessment for Digital Audio Broadcasting (#1)</b> <i>František Rund and Karel Ulovec</i>
<b>16:00 – 18:00</b>	<b>Applications of Information Technologies</b>
<b>29</b>	<b>Webalyt: Implemetation of Architecture for Capturing Web User Behaviours With Feedback Propagation (#42)</b> <i>Petr Filip and Lukáš Čegan</i>
<b>30</b>	<b>Semantic Petri-Markov Nets for Automotive Algorithms Transformations (#60)</b> <i>Alexey Ivutin and Anna Troshina</i>
<b>31</b>	<b>Development of Architecture of Visual Program System for Distributed Data Processing in Software Defined Networks (#62)</b> <i>Dmitry Perepelkin, Maria Ivanchikova, Vladimir Byshov and Ilya Tsyganov</i>
<b>32</b>	<b>Algorithm and Software of Virtual Slices Formation in Software Defined Networks (#61)</b> <i>Dmitry Perepelkin, Maria Ivanchikova, Vladimir Byshov and Ilya Tsyganov</i>
<b>33</b>	<b>An Approach to Reducing Complexity of Neuromorphic Fault Dictionary Construction for Analogue Integrated Circuits (#72)</b> <i>Sergey Mosin</i>
<b>19:00 (meeting point 18:30)</b>	<b>Welcome Dinner at Lod' Pivovar</b> ( <a href="http://www.pivolod.cz/">http://www.pivolod.cz/</a> ) Dvořákovo nábřeží, Štefánikův most Kotviště číslo 19, 110 00 Prague 1

## Friday, April 20, 2018

<b>ARTEMIS 1+2</b>	<b>Main Partner Presentation, Invited Talk</b>
<b>09:00 – 10:00</b>	<i>Chair: Miloš KLÍMA</i>
<b>09:00 – 09:15</b>	<b>Main Partner Presentation</b> <i>Václav Haasz (H TEST)</i>
<b>09:15 – 10:00</b>	<b>Invited Talk</b> <b>Combination of Optical- and RF-Wave Propagation for Wireless Communications, Sensing and Detection Technologies for Increasing Safety and Reliability in Autonomous Driving Scenarios</b> <i>Erich Leitgeb (Graz University of Technology)</i>
<b>ARTEMIS 1+2</b>	<b>Wireless RF and Microwave Systems I</b>
<b>10:00 – 10:45</b>	<i>Chair: Pavel KOVÁŘ</i>
<b>10:00 – 10:15</b>	<b>Coplanar Flexible Antenna Design Using Conductive Silver Nano Ink on Paper Substrate for Wearable Antenna Applications (#28)</b> <i>Cem Baytöre, Emine Yeşim Zoral, Cem Göçen, Merih Palandöken and Adnan Kaya</i>
<b>10:15 – 10:30</b>	<b>Quality evaluation of isotropic electromagnetic field probes using classification trees (#32)</b> <i>Bartłomiej Zubrzak, Paweł Bieńkowski and Urszula Libal</i>
<b>10:30 – 10:45</b>	<b>Analog Direct Path Interference Suppression for FM Based Passive Radars (#52)</b> <i>Tamás Pető, Levente Dudas and Rudolf Seller</i>
<b>10:45 – 11:15</b>	<b>Coffee Break</b>
<b>ARTEMIS 1+2</b>	<b>Wireless RF and Microwave Systems II</b>
<b>11:15 – 12:30</b>	<i>Chair: Pavel HAZDRA</i>
<b>11:15 – 11:30</b>	<b>SIMO RSS Measurement in Bluetooth Low Power Indoor Positioning System (#69)</b> <i>Stanislav Rozum and Jiří Šebesta</i>
<b>11:30 – 11:45</b>	<b>Small Satellite Ground Station in Pilsen – Experiences with VZLUSAT-1 Commanding and Future Modifications Toward Open Reference Ground Station Solution (#95)</b> <i>Ivo Veřtát, Richard Linhart, Michal Pokorný, Jiří Masopust, Pavel Fiala and Jan Mráz</i>
<b>11:45 – 12:00</b>	<b>Monarch Butterfly Optimization Algorithm for Localization in Wireless Sensor Networks (#58)</b> <i>Ivana Strumberger, Eva Tuba, Nebojsa Bacanin, Marko Beko and Milan Tuba</i>
<b>12:00 – 12:15</b>	<b>Adaptive Routing in Cognitive Radio Mobile Ad-Hoc Network (#66)</b> <i>Dávid Hrabčák, Martin Matis and Lubomír Doboš</i>
<b>12:15 – 12:30</b>	<b>LTE and DVB-T2 Networks in the First Digital Dividend Band in Europe: A Coexistence Study (#13)</b> <i>Ladislav Polák, Jiří Miloš, Daniel Kresta, Tomáš Kratochvíl and Roman Maršálek</i>
<b>12:30 – 14:00</b>	<b>Lunch at Hotel Artemis Restaurant</b>

<b>ARTEMIS 1+2</b>	<b>Wireless RF and Microwave Systems III</b>
<b>14:00 – 14:30</b>	<i>Chair: Pavel KOVÁŘ</i>
<b>14:00 – 14:15</b>	<b>Integrated SoC UWB Radar with Built-In 15-bit M-Sequence Generator (#71)</b> <i>Stanislav Slovák, Pavol Galajda, Martin Pečovský and Miroslav Sokol</i>
<b>14:15 – 14:30</b>	<b>Ultrathin Wideband Polarization Independent Compact Metamaterial Microwave Absorber (#4)</b> <i>Kanwar Preet Kaur, Trushit Upadhyaya and Merih Palandöken</i>
<b>ARTEMIS 1+2</b>	<b>Applications of Information Technologies</b>
<b>14:30 – 15:15</b>	<i>Chair: Stanislav VÍTEK</i>
<b>14:30 – 14:45</b>	<b>Real-time spectrum secondary markets: Agent-based model of investment activities of heterogeneous operators (#80)</b> <i>Jana Zausinová, Juraj Gazda and Taras Maksymyuk</i>
<b>14:45 – 15:00</b>	<b>Method of Self-Similar Load Balancing in Network Intrusion Detection System (#46)</b> <i>Dmytro Ageyev, Lyudmyla Kirichenko, Tamara Radivilova, Maksym Tawalbeh and Oleksii Baranovskyi</i>
<b>15:00 – 15:15</b>	<b>An Algorithm Network Design on Core Network for Supporting Multi-Service Edge (#10)</b> <i>Annop Monsakul</i>
<b>ARTEMIS 1+2</b>	<b>Optical and Photonic Systems</b>
<b>15:15 – 15:45</b>	<i>Chair: Stanislav VÍTEK</i>
<b>15:15 – 15:30</b>	<b>Experimental setup for the quality evaluation of optical materials (#2)</b> <i>Miloš Klíma, Petr Páta, Jan Bednář, Petr Janout, Čestmír Bárta and Radek Hasal</i>
<b>15:30 – 15:45</b>	<b>Quantification of the Atmospheric Turbulence by the Method of the Equivalent Temperature Gradient (#38)</b> <i>Lucie Hudcová and Otakar Wilfert</i>
<b>ARTEMIS 1+2</b>	<b>Multimedia and Biomedical Systems</b>
<b>15:45 – 16:00</b>	<i>Chair: Stanislav VÍTEK</i>
<b>15:45 – 16:00</b>	<b>Perspective Applications of Microwaves in Medicine (#79)</b> <i>David Vrba, Jan Vrba Jr, Ondřej Fišer, Ilja Merunka, Jesus Cumana and Jan Vrba</i>
<b>ARTEMIS 1+2</b>	<b>Best Paper Award, Closing</b>
<b>16:00 – 16:30</b>	<i>Chair: Miloš KLÍMA</i>