

# Table of Contents

Rymus J.	Simulating ADAS Sensors, their Placement and Environment (Invited Lecture – Abstract)	<b>1</b>
Barri D., Jakovenko J.	Design and Optimization of an Active OTA-C Filter Based on STOHE Algorithm	<b>3</b>
Belik M.	Calculation of Solid Particle Trajectory Inside Electrical Separator Based on Measured Values	<b>9</b>
Bhajana V., Drabek P.	A Novel ZCS/ZVS Bidirectional DC-DC Converter for Energy Storage Applications	<b>15</b>
Brtnik B., Matousek D.	Active-RC Filters Suitable as Antialiasing and/or Reconstruction Filters	<b>21</b>
De S., Niklas M., Rooney B., Mottok J., Brada P.	Towards Translation of Semantics of Automotive Interface Description Models from Franca to AUTOSAR Frameworks	<b>25</b>
Doskocil R., Krivanek V., Bergeon Y., Kornelly T.	Mobile Phone as a Sensor for Robot Navigation System	<b>31</b>
Dragoun J., Talla J., Kosan T.	Converter Power Losses Computation by FPGA-Based HIL Simulator	<b>39</b>
Draxler K., Hlavacek J., Styblikova R.	Calibration of Instrument Current Transformer Test Sets	<b>43</b>
Eroglu H.	Design and Implementation of a High Voltage Source for Biphasic Electrical Stimulators	<b>47</b>
Freitas L., Nogueira A., Melgar M.	Data Validation System Using QR Code and Meaningless Reversible Degradation	<b>51</b>
Gheltu S.	Correlations of the Vowel Formants in Romanian and Emotional Effects on Formants	<b>55</b>
Glasberger T., Kosan T., Molnar J.	Rack Mounted Low-Profile Indirect Frequency Converter	<b>59</b>
He Y., Chiang H., Chen J., Chang P.	The Inaccuracy of Compensation System of Spindle Thermal Growth in Machine Tool Application and its Solution	<b>63</b>
Holota R., Koucky V., Krist P., Valenta P., Masek B.	Electronic System for Controlled Modification of Temperature Field in Sheet Metal Blanks	<b>67</b>
Hrbcek J., Bubenikova E., Janota A.	Development of the Short Time Signals Processing Unit Using an Embedded System	<b>71</b>
Jicinsky M., Mares J., Verespejova L., Chovanec M.	Speech Processing in Diagnosis of Vocal Chords Diseases	<b>75</b>
Jilek J., Stork M.	Assessment of Three Multiple Cuff Blood Pressure Devices	<b>79</b>

Kenyeres M., Kenyeres J.	Distributed Network Size Estimation Executed by Average Consensus Bounded by Stopping Criterion for Wireless Sensor Networks	<b>83</b>
Kenyeres M., Kenyeres J.	On Comparative Study of Deterministic Linear Consensus-Based Algorithms for Distributed Summing	<b>89</b>
Kovar P., Puricer P., Morong T., Sturc F.	Digital Up and Down Converter for High Performance VHF and UHF Transceiver	<b>95</b>
Kubik Z., Skala J.	Electromagnetic Interference from DC/DC Converter of Photovoltaic System	<b>99</b>
Matousek D., Brtnik B.	Rationalisation of the Fibonacci Charge Pump	<b>103</b>
Mischie S., Pazsitka R.	Designing a MSP430 Bootloader	<b>107</b>
Niedermaier M., Fischer F., Merli D., Sigl G.	Network Scanning and Mapping for IIoT Edge Node Device Security	<b>111</b>
Peniak P., Bubenikova E.	Validation of IoT Secure Communication Gateway for Constrained Devices	<b>117</b>
Petrzela J.	Circuit Equivalent to Rucklidge System	<b>123</b>
Pichlik P.	Evaluation of Phase Shift in Electric Drive by Kalman Filter for Wheel Slip Control	<b>127</b>
Ponomarenko S., Zaleshin A.	About One Pseudolinear Approximation of Exponent	<b>131</b>
Ponomarenko S., Zaleshin A.	Sample and Hold Passive Mixer	<b>135</b>
Scharfenberg G., Elis L., Hofmann G.	New Design Methodology – Using VHDL-AMS Models to Consider Aging Effects in Automotive Mechatronic Circuits for Safety Relevant Functions	<b>141</b>
Sido J., Konopík M., Reismüllerová J.	Deep Learning for Text Data on Mobile Devices	<b>147</b>
Skarolek P., Lettl J.	Tracking Deadtime Algorithm for GaN DC/DC Converter	<b>151</b>
Stork M., Mayer D.	Modified Tellegen Principle Used for Power and Energy Systems Modeling	<b>155</b>
Stork M., Novak J., Broz P.	Cardiac Mathematical Models for Exercise Testing on Treadmill Ergometer	<b>161</b>
Stork M., Pinker J., Weissar P.	Adaptive Control System for Autonomous Vehicle Path Following	<b>165</b>
Teodorescu H.	Chirps for Radar Based on Reciprocal Time, Essential Discontinuities and Chaotic Generators	<b>169</b>
Teodorescu H., Cojocaru V., Katashev A.	Multi-Criterial Assessment of the Uniformity of the Electrical Potential of Micro-Films	<b>173</b>
Vertat I., Dudacek L.	Multidimensional Cross Parity Check Codes as a Promising Solution to CubeSat Low Data Rate Downlink	<b>177</b>

Wagner P., Wilhelm T., Sailer A.	Analyzing Multi-Core Timing Effects on Control Systems via Co-Simulation	<b>183</b>
Zdansky J., Medvedik M.	Performing Safety Functions to Monitor the Protected Area Using a Light Curtain	<b>187</b>
Zdansky J., Valigursky J.	Influence of Distributed SRCS Architectures on Dependability and Safety of Realised Safety Functions	<b>193</b>