EEICT 2013

Obsah

Předmluva

Středoškolské projekty

Elektronika a komunikace

Benda, D.
Regulated Power Supply BD85/20S 4
Doležal, L.
Universal PIC Development Board 7
Kudlička, M.
Laser Shooting Simulator 10
Lelek, M.
Desktop MP3 Player 13
Matějka, T.
Bench Power Supply 16
Matoušek, M.
Clock with Wireless Sensor 19
Pařízek, T., Pavlík, R.
SDR Receiver Falcon 22
Raszka, D.
Digitally Controlled Preamplifier with DSP Processor and Graphics LCD Display 25
Rokos, L.
Electronic Controlled Ignition for a Two-stroke Motorcycle Engine 28
Šoukal, P.
Microprocessor-based Control Module for Four-channel Audio Amplifier 31

Zpracování signálů, obrazu a dat

Zedka, R.
Experimental Device for Displaying Transient and Periodic Signals 36

Kybernetika a automatizace

Benda, D., Pernikář, A.
Automatic Conveyor Belt with Manipulator and Sorting System 40
Benda, D., Pernikář, A.
Automatic Ludo Player 43
Doležel, J.
Universal Desktop CNC Drill 46

Chalupa, P.
Control of Industrial Machines with Programable Logic Controlers 49
Karásek, M.
CNC Driver 52
Kostrhun, J.
Device with Single-Board Computer Arduino and its Remote Control via Bluetooth ... 55

Mikroelektronika a technologie

Konzal, J.
Code Lock 60

Biomedicínské inženýrství a bioinformatika

Vondráček, M.
Tri-band LED Light Source for Biological Purposes 64

Bakalářské projekty

Elektronika a komunikace

Dluhý, V.
Audio Switch-Matrix 70
Ligocki, A., Opioł, Z.
Autonomous Robot with Image Processing 73
Procházka, P.
Circularly Polarized SIW Cavity-Backed Microstrip Patch Antenna 76

Zpracování signálů, obrazu a dat

Blažek, P.
Charakterization of Acoustic Emission Signal for Cluster Analysis 80
Martinů, L.
Speed Measurement Using Radar 83
Polášková, L.
Semiautomatic Classification of Jawbone Cysts in RTG Images Using RapidMiner ... 86
Rajnoch, Z.
Motion-Blurred Image Restoration 89
Sekera, T.
Range Measurement Using Radar 92
Skácel, J.
Human Detection Using Radar 95
Šimon, M.
Support of acquisition of recognition of mushroom images 98

Vaverka, F.
Digital Filter Design on GPU 101

Kybernetika a automatizace

Čechmánek, M.
Robotic Rover Controlled with Using the Arduino Platform 106
Kočík, K.
Intelligent Photo Printed Circuits 109
Navrátil, L.
Robotic Manipulator 112
Nováček P.
Coupling of Images 115

Silnoproudá elektrotechnika a elektroenergetika

Gallo, M.
Biogas Production and Utilization for Energy Requirements of Agricultural Buildings 120
Prokop, J.
Generators for Renewable Energy Sources 123
Svoboda, J.
Radioisotope Thermoelectric Generators 126
Števček, T.
Small Hydroelectric Power Plant Design 129

Teoretická elektrotechnika, fyzika a matematika

Grohol, S.
Electrical Controlled Measuring System for Detection of Defects Regions in Photovoltaic Solar Cells Structure 134

Mikroelektronika a technologie

Ambrož, J.
Flush Controller Tester 138
Holas, J.
Memristor with PWL-Type Characteristic 141
Juřica, L.
DVI Interface Implementation into FPGA Chip 144
Kováč, M.
Stereometric LED Display 147
Malý, M.
Characteristic Features of Luminescence Radiation Solar Cells 150

Biomedicínské inženýrství a bioinformatika

Hon, J.
Triplex: an R/Bioconductor Package for Identification and Visualization of Potential Intramolecular Triplex Patterns in DNA Sequences 154
Jančová, I.
Automated Detection of Graphic Elements in EEG Signal 157
Kadlec, M.
Prediction of the Effect of Amino Acid Mutations on the Secondary Structure of Proteins 160
Malý, L.
Neural Data Toolbox (NDTb) 163
Smíšek, R.
Heart Beats Classification Using Artificial Neural Network 166
Svánovská, Z.
Detection of Ventricular Extrasystoles 169
Trlica, J.
Analysis of the Tools for Detecting Similarities between Tertiary Protein Structures ... 172

Informační systémy

Hrubý, J.
Jumping Finite Automata: Determinism 176
Huňka, J.
Detecting DoS and DDoS Attacks Using NetFlow Data 179
Chlápek, T.
Tajmlajn - Mobile/Web Service for Planning of Goal Achievement 182
Kollár, J.
Optimizations in a Retargetable Decompiler 185
Kollát, S.
Generic Obfuscation on Bytecode Level 188
Martiško, J.
Optimization of Logical Expressions in Compilers 191
Paulík, M.
Parallel State Grammar Parsing 194
Pokorný, F.
Reconstruction of Instruction Idioms in the Retargetable Decompiler 197
Poncová, V.
Deep Pushdown Automata of Finite Index 200
Střálka, J.
Web Service for Analysis of Measurement Results of Semiconductor Circuit Elements 203
Surovič, M.
Non-returning Turing Machines 206

Škvařilová, R.
Modified Deep Pushdown Automata 209
Trefilík, J.
Managing Writings of Law Company with Connections to Public Databese 212

Grafika a multimédia

Buno, P.
Autonomous Crossword Puzzless for Android Platform 216
Kavan, T.
Embedded Terminal for Orienteering Events 219
Mátl, R.
Shadow Rendering Through Translucent Materials 222
Mészáros, T.
Simulation of Guitar Sound Effects on Mobile Device with Android 225
Podmolík, L.
Android Interface for Robot Remote Control 228

Počítačové systémy

Holkovič, M.
Identity Detection in TCP/IP Architecture 232

Inteligentní systémy

Bílek, J.
Model and Controlling of Robotic Arm 236
Hruška, M.
Efficient Algorithms for Finite Automata 239
Veřmiřovský, J.
Planning Optimal Path in 2D Space With Obstacles 242
Žák, M.
Design and Construction of a Hexapod Robot 245