

# **2012 IEEE Control and System Graduate Research Colloquium (ICSGRC 2012)**

**Shah Alam, Selangor, Malaysia  
16 – 17 July 2012**



**IEEE Catalog Number: CFP1205K-PRT  
ISBN: 978-1-4673-2035-1**

# Table of Contents

|   | Page |
|---|------|
| <i>Organizing Committee</i>   | iii  |
| <i>Technical Reviewers</i>  | iv   |
| <i>Table of Contents</i>  | v    |
| <i>Paper Title &amp; Authors</i>  |      |
| <b>Research for Security Strategy of Cloud Service Based On System Survivability</b><br><i>Huanan Liu and Shiqing Wang</i>  | 1    |
| <b>The Analysis and Design of Trusted Computing Applied into Cloud</b><br><i>Huanan Liu and Shiqing Wang</i>  | 5    |
| <b>Feed-Forward Control of Non-Minimum Phase XY Table System Using Trajectory Fuzzy-RLS Hybrid ZPETC</b><br><i>Ramli Adnan, Michael Jackson Patrick and Norlela Ishak</i>   | 10   |
| <b>Real-Time Control of Non-Minimum Phase XY Table System using Trajectory-Adaptive ZPETC</b><br><i>Ramli Adnan, Michael Jackson Patrick and Norlela Ishak</i>  | 16   |
| <b>Flood Water Level Modelling and Prediction Using Artificial Neural Network : Case Study of Sungai Batu Pahat in Johor</b><br><i>Ramli Adnan , Fazlina Ahmat Ruslan , Abd Manan Samad and Zainazlan Md Zain</i> | 22   |
| <b>Implementation of ODFC for Angular Position Control of Cart-Pendulum Dynamic Model</b><br><i>Rajeeb Dey, Abhijit Rajkumar and Aditi Bandyopadhyay</i>  | 26   |
| <b>Heading Direction Anticipation Using Visual Feedback System</b><br><i>Zairulazha Zainal, Rizauddin Ramli and Mohd Marzuki Mustafa</i>  | 32   |
| <b>Customized Instruction Set Simulation for Soft-Core RISC Processor</b><br><i>Ahmad Jamal Salim, Sani Irwan Md Salim, Nur Raihana Samsudin and Yewguan Soo</i>  | 38   |
| <b>GMT Feature Extraction for Representation of BIM Sign Language</b><br><i>Noor Saliza Mohd Salleh and Suzaimah Ramli</i>  | 43   |
| <b>New Hybrid Model Reference Adaptive Supervisory Fuzzy Logic Controller for Shell-and-Tube Heat Exchanger Temperature System</b><br><i>M. A. Ahmad, A. A. Ishak and N. K. Ismail</i>                            | 49   |
| <b>GUI System for Enhancing Blood Vessels Segmentation in Digital Fundus Images</b><br><i>Ahmad Zikri Rozlan, Nor Syazwani Mohd Ali and Hadzli Hashim</i>   | 55   |

|  |     |
|--|-----|
| <b>Designing Cavity-Enclosed Microstrip Antenna for Gain Enhancement</b>   | 60  |
| <i>N. H. Khairul Anuar, M. T. Ali, S. H. Anuar, S. Subahri and N. Ya'acob</i>  |     |
| <b>Computer Security Self-Efficacy Effect: An Extention of Technology-to-Performance Chain Model</b>                                       | 64  |
| <i>Mahmoud Al-Shawabkeh, Madihah Mohd Saudi and Najwa Hayaati Mohd Alwi</i>  |     |
| <b>Design and Analysis of a Log Periodic Antenna by Using Proximity Fed Network</b>  | 70  |
| <i>S. H. Anuar, M. T. Ali, N. H. Khairul Anuar, A. L. Yusof and M. N. Md Tan</i>   |     |
| <b>Analyzing Large Dynamic Set-point Change Tracking of MRAC by Exploiting Fuzzy Logic Based Automatic Gain Tuning</b>                     | 76  |
| <i>R. Karthikeyan, Rahul Kumar Yadav, Shikha Tripathi and Hemanth Kumar G.</i>   |     |
| <b>A Rainfall Prediction Model Using Artificial Neural Network</b>   | 82  |
| <i>Kumar Abhishek, Abhay Kumar, Rajeev Ranjan and Sarthak Kumar</i>  |     |
| <b>Sizing Ratio of Inverter and PV Array for a-Si FS GCPV System in Malaysia's Perspectives</b>  | 88  |
| <i>M. Z. Hussin, A. M. Omar, Z. M. Zain and S. Shaari</i>  |     |
| <b>Femtocell Interference Mitigation</b>   | 94  |
| <i>Al-Hareth Zyoud, Mohamed Hadi Habaebi, Jalel Chebil and Md. Rafiqul Islam</i>   |     |
| <b>Statistical Analysis on Human Body Radiation Points</b>   | 100 |
| <i>Mohamad Hushnie Haron, Mohd Nasir Taib, Megat Syahirul Amin Megat Ali, Megawati Mohd Yunus and Siti Zura A. Jalil</i>                   |     |
| <b>BER Performance of LBC Coded OFDM in Different Channels</b>   | 106 |
| <i>Vandana B. Malode and Bhagwat P. Patil</i>  |     |
| <b>Position Tracking of Automatic Rack and Pinion Steering Linkage System Through Hardware in the Loop Testing</b>                         | 111 |
| <i>Mohd Zakaria Mohammad Nasir, Abdurahman Dwijotomo, Mohd Zubir Amir, Mohd Azman Abdullah, Muhammad Zahir Hassan and Khisbullah Hudha</i> |     |
| <b>Implementation Model Predictive Control (MPC) Algorithm-3 for Inverted Pendulum</b>   | 116 |
| <i>Cahyantari Ekaputri and Arief Syaichu-Rohman</i>  |     |
| <b>Challenges in High Accuracy of Malware Detection</b>  | 123 |
| <i>Muhammad Najmi Ahmad Zabidi, Mohd Aizaini Maarof and Anazida Zainal</i>   |     |
| <b>Data Mining Development in "Actual Mobile guide for Tourist" Application</b>  | 126 |
| <i>Rifki Wijaya, Ary Setijadi Prihatmanto and Mochamad Vicky Ghani Aziz</i>  |     |
| <b>Modified Nevanlinna – Pick Interpolation Theory for Control System Design</b>   | 130 |
| <i>Aruna B. and Devanathan R.</i>  |     |
| <b>Implementation of Interval Type-2 Fuzzy Systems with Analog Modules</b>   | 136 |
| <i>Mamta Khosla, R. K. Sarin and Moin Uddin</i>  |     |
| <b>Development of MATLAB GUI for Multivariable Frequency Sampling Filters Model</b>  | 142 |
| <i>Muhammad Hilmi R. A. Aziz, Lee Kim Huat and Rosmiwati Mohd-Mokhtar</i>  |     |

|   |     |
|---|-----|
| <b>Transient Response Characteristics and Deflection Analysis of Microactuator</b>  | 148 |
| <i>Sarah Addyani Shamsuddin, Nurul Akmal Zakaria and Nina Korlina Madzhi</i>  |     |
| <b>Carrier Aggregation in Long Term Evolution - Advanced</b>  | 154 |
| <i>Mohammed Abduljawad M. Al-Shibly, Mohamed Hadi Habaebi and Jalel Chebil</i>  |     |
| <b>Multiobjective Quantum-Inspired Evolutionary Programming for Optimal Load Shedding</b>   | 160 |
| <i>Zuhaila Mat Yasin, Titik Khawa Abdul Rahman and Zuhaina Zakaria</i>  |     |
| <b>Power Consumption Saving During Charging Period for Thermal Energy Storage System</b>  | 166 |
| <i>A. H. Kassim, M. Z. Hussin, M. B. A. Aziz and Z. M. Zain</i>   |     |
| <b>Extended Kalman Filter (EKF) Prediction of Flood Water Level</b>   | 171 |
| <i>Ramli Adnan, Fazlina Ahmat Ruslan, Abd Manan Samad and Zainazlan Md Zain</i>   |     |
| <b>Air-Conditioning Energy Consumption of an Education Building and it's Building Energy Index: A Case Study in Engineering Complex, UiTM Shah Alam, Selangor</b> | 175 |
| <i>M. B. A. Aziz, Z. M. Zain, S. R. M. S. Baki and R. A. Hadi</i>   |     |
| <b>Rectangular Spiral Microstrip Antenna for WLAN Application</b>   | 181 |
| <i>Aiza Mahyuni Mozi, Dayang Suhaida Awang Damit and Zafirah Faiza</i>  |     |
| <b>Index on Fabric Wrinkle Using Image Processing Technique</b>   | 186 |
| <i>Anis Diyana Rosli, Hadzli Hashim, Noor Ezan Abdullah, Nadiah Ismail and Zuraidah Halil</i>   |     |
| <b>A Development and Challenges of Grid-Connected Photovoltaic System in Malaysia</b>   | 191 |
| <i>M. Z. Hussin, N. Hasliza, A. Yaacob, Z. M. Zain, A. M. Omar and S. Shaari</i>  |     |
| <b>Hybrid Approach using Correlation and Morphological Approaches for GFDD of Plain Weave Fabric</b>  | 197 |
| <i>V. Jayashree and S. Subbaram</i>   |     |
| <b>GIS Multi-Criteria for Power Plant Site Selection</b>  | 203 |
| <i>Rosniza Idris and Zulkiflee Abd Latif</i>  |     |
| <b>Profiling System for Depressive Disorder Patient Using Web Based Approaches</b>  | 207 |
| <i>Lucyantie Mazalan, Nurul Hidayah Mohamed Halim, Hasmila Akmar Omar and Norliza Mohamad Zaini</i>   |     |
| <b>Web-based Student Attendance System Using RFID Technology</b>  | 213 |
| <i>Murizah Kassim, Hasbullah Mazlan, Norliza Zaini and Muhammad Khidhir Salleh</i>  |     |
| <b>An FPGA Implementation of Shift Converter Block Technique on FIFO for RS232 to Universal Serial Bus Converter</b>  | 219 |
| <i>Nurul Fatimah Jusoh, Muhammad Adib Haron and Fuziah Sulaiman</i>   |     |
| <b>Integration of Low Altitude Aerial &amp; Terrestrial Photogrammetry Data in 3D Heritage Building Modeling</b>  | 225 |
| <i>Khairil Afendy Hashim, Anuar Ahmad, Abd. Manan Samad, Khairul NizamTahar and Wani Sofia Udin</i>   |     |
| <b>Web-Based Adaptive Audio-Therapy Recommender System</b>  | 231 |
| <i>Muhammad Khidhir Salleh and Norliza Mohamad Zaini</i>  |     |

|  |     |
|--|-----|
| <b>Research in Characterization of Cyclic Load Parameters using Fiber Bragg Gratings System</b>  | 237 |
| <i>Mohamad Adli Adam, Wahyu Kuntjoro and Mohd Kamil Abdul Rahman</i>   |     |
| <b>Terrain Slope Analyses between Terrestrial Laser Scanner and Airborne Laser Scanning</b>  | 242 |
| <i>Wan Aziz W. A., Syahmi M. Z., Anuar A. and Khairul Nizam T.</i>   |     |
| <b>Development of Geographical Based Library Information System (GeoLIS)</b>   | 248 |
| <i>Muhammad Jamaluddin Bazlan and Abdul Rauf Abdul Rasam</i>   |     |
| <b>Height Discrepancies Based on Various Vertical Datum</b>  | 253 |
| <i>Saiful Aman Hj Sulaiman, Kamaluddin Hj Talib, Mat Akhir Md Wazir, Othman Mohd Yusof and Shafiq Azwan Zalil</i>  |     |
| <b>Contribution of GIS and Remote Sensing Technologies for Managing Foodborne Diseases in Malaysia</b>   | 258 |
| <i>Abdul Rauf Abdul Rasam and Abdul Malek Mohd Noor</i>  |     |
| <b>Three Dimension 3D Signal for Electroencephalographic (EEG)</b>   | 262 |
| <i>N. Fuad, R. Jailani, W. R. W. Omar, A. H. Jahidin, M. N. Taib</i>   |     |
| <b>Reforming Health Care Facility Using Geographical Information System</b>  | 267 |
| <i>Mohamad Taufik Lokhman, Abdul Rauf Abdul Rasam and Abd Malek Mohd Noor</i>  |     |
| <b>Monitoring Cellular Activities Using Celltrack with GPS Enable</b>  | 271 |
| <i>Mohd Saufi Hj Nasro Ali, Azita Laily Yusof, Melati Ismail, Norsuzila Ya'acob and Mohd Tarmizi Ali</i>   |     |
| <b>Investigation of Common Compounds in High Grade and Low Grade <i>Aquilaria Malaccensis</i> Using Correlation Analysis</b>   | 277 |
| <i>Nurlaila Ismail, Mohd Hezri Fazalul Rahiman, Rozita Jailani, Mohd Nasir Taib, Nor Azah Mohd Ali and Saiful Nizam Tajuddin</i>                                     |     |
| <b>Implementation of Real –Time Steam Temperature Control for High Efficient Induction- Based Extraction Essential Oil Using Hybrid Fuzzy-PD Plus PID Controller</b> | 282 |
| <i>Zuraida Muhammad, Zakiah Mohd Yusoff, Mohd Noor Nasriq Nordin, Mohd Hezri Fazalul Rahiman and Mohd Nasir Taib</i>   |     |
| <b>Real Time PID Control for Hydro-diffusion Steam Distillation Essential Oil Extraction System Using Gradient Descent Tuning Method</b>                             | 288 |
| <i>Zakiah Mohd Yusoff, Zuraida Muhammad, Mohd Noor Nasriq Nordin, Mohd Hezri Fazalul Rahiman and Mohd Nasir Taib</i>   |     |
| <b>Gait Recognition Based on Lower Limb</b>  | 294 |
| <i>Nurul Illiani Yaacob, Nooritawati Md Tahir and R. Abdullah</i>  |     |
| <b>Human Shape Recognition Using Radon Transform and Regularized Principal Component</b>   | 298 |
| <i>A. R. Mahmud and Nooritawati Md Tahir</i>   |     |
| <b>Video Stabilization Based on Point Feature Matching Technique</b>   | 303 |
| <i>Labeeb Mohsin Abdullah, Nooritawati Md Tahir and Mustaffa Samad</i>   |     |

|  |     |
|--|-----|
| <b>An Analytical Process of 2D Sonar Sensor Low Altitude Field Mapping for UAV Application</b>   | 308 |
| <i>Mohamad Farid Misnan, Nor Hashim Mohd Arshad, Ruhizan Liza Ahmad Shauri, Noorfadzli Abd Razak, Norashikin Mohd Thamrin and Siti Fatimah Mahmud</i>                        |     |
| <b>Analysis of Trusted Identity Based Encryption (IBE-Trust) Protocol for Wireless Sensor Networks</b>   | 313 |
| <i>Yusnani Mohd Yussoff, Habibah Hashim and Mohd Dani Baba</i>   |     |
| <b>Brainwave Sub-Band Power Ratio Characteristics in Intelligence Assessment</b>   | 318 |
| <i>A. H. Jahidin, M. N. Taib, N. Md Tahir, M. S. A. Megat Ali, S. Lias, N. Fuad, and W. R. W. Omar</i>   |     |
| <b>Analysis of Thresholding Techniques for Asymmetrical Annular Flow Image</b>   | 322 |
| <i>Muhamad Suhaidi Umar and Idris Ismail</i>   |     |
| <b>Investigation on Elman Neural Network for Detection of Cardiomyopathy</b>   | 328 |
| <i>M. H. Ahmad Shukri, M. S. A. Megat Ali, M. Z. H. Noor, A. H. Jahidin, M. F. Saaid, and M. Zolkapli</i>  |     |
| <b>Mitigate the GPS Ionospheric Scintillation During Solar Flare</b>   | 333 |
| <i>Norsuzila Ya'acob, Azwati Azmin, Azita Laily Yusof, Mohd Tarmizi Ali, Azlina Idris and Darmawaty Mohd Ali</i>   |     |
| <b>Design and Development of 'Smart Basket' System for Resource Optimization</b>   | 338 |
| <i>M. Z. H. Noor, M. H. A. Razak, M. F. Saaid, M. S. A. Megat Ali and M. Zolkapli</i>  |     |
| <b>The Design and Development of Automatic Fish Feeder System Using PIC Microcontroller</b>  | 343 |
| <i>M. Z. H. Noor, A. K. Hussian, M. F. Saaid, M. S. A. M. Ali and M. Zolkapli</i>  |     |
| <b>The Development of Self-service Restaurant Ordering System (SROS)</b>   | 348 |
| <i>M. Z. H. Noor, A. A. A. Rahman, M. F. Saaid, M. S. A. M. Ali and M. Zolkapli</i>  |     |
| <b>Analysis of EEG Signal from Right and Left Hand Writing Movements</b>   | 354 |
| <i>C.W.N.F. Che Wan Fadzal, W. Mansor and L. Y. Khuan</i>  |     |
| <b>Adaptive Feedforward Zero Phase Error Tracking Control for Minimum Phase and Non-minimum Phase Systems – XY Table Real-Time Application</b>                               | 359 |
| <i>Ramli Adnan, Hashimah Ismail, Norlela Ishak, Mazidah Tajjudin and Mohd Hezri Fazalul Rahiman</i>  |     |
| <b>A Study on TNB Transmission Line Route Sustainability and Suitability Using GIS-AHP</b>   | 364 |
| <i>Faizah Husain, Nur Aishah Sulaiman, Khairil Afendy Hashim and Abd. Manan Samad</i>  |     |
| <b>The Comparison of Human Body Electromagnetic Radiation between Down Syndrome and Non Down Syndrome Person for Brain, Chakra and Energy Field Stability Score Analysis</b> | 370 |
| <i>Mastura Rosdi, Ros Shilawani Sheikh Abd Kadir, Zumairah Hj Murat and Nadiyah Kamaruzaman</i>  |     |

|  |     |
|--|-----|
| <b>Trajectory ZPETC Design Using Comparing Coefficients Method: The Studies on the Effects of Zero Locations to Tracking Performance</b> | 376 |
| <i>Ramli Adnan, Norlela Ishak, Mazidah Tajjudin, Hashimah Ismail, Muhammad Nursalam Mashuti and Yahaya Md Sam</i>                        |     |
| <b>A Statistical Approach for Orchid Disease Identification using RGB Color</b>  | 382 |
| <i>Nurul Hidayah Tuhid, Noor Ezan Abdullah, N. M. Khairi, M. F. Saaid, Shahrizam M. S. B. and Hadzli Hashim</i>                          |     |
| <b>A Study on Flood Risk Assessment for Bandar Segamat Sustainability Using Remote Sensing and GIS Approach</b>                          | 386 |
| <i>Nur Aishah Sulaiman, Faizah Husain, Khairil Afendy Hashim and Abd. Manan Samad</i>  |     |
| <b>A Study on THD Reduction by Active Power Filter Applied Using Closed-loop Current Controlled AC-AC SPMC Topology</b>                  | 392 |
| <i>Mazratul Firdaus Mohd Zin, Noraliza Hamzah and Mohammad Nawawi Seroji</i>   |     |
| <b>The Readability of Transmission Line Characteristics Lab Manual</b>   | 398 |
| <i>Mohamad Fahmi Hussin, Ishak Abd. Ghani, Ahmad Asari Sulaiman and Nazurah Hassan</i>   |     |
| <b>An Investigation on the Readability of Frequency Modulation (FM) Lab Manual</b>   | 402 |
| <i>Mohamad Fahmi Hussin, Ishak Abd. Ghani, Khairul Khaizi Mohd Shariff, Mohammad Izhar Mhd Nordin</i>                                    |     |
| <b>Readability of Amplitude Modulation (AM) Transmitter and Receiver Laboratory Manual</b>   | 408 |
| <i>Mohamad Fahmi Hussin, Isyak Abd. Ghani, Suhaila Subahir, Mohd Shahrul Ridzuan Zana Abidin and Muhammad Asyraf Abdullah</i>            |     |
| <b>Author's Index</b>  | 414 |