

2016 IEEE Conference on Systems, Process and Control (ICSPC 2016)

**Melaka, Malaysia
16-18 December 2016**



**IEEE Catalog Number: CFP16EUT-POD
ISBN: 978-1-5090-1182-7**

**Copyright © 2016 by the Institute of Electrical and Electronics Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

| | |
|-------------------------|-------------------|
| IEEE Catalog Number: | CFP16EUT-POD |
| ISBN (Print-On-Demand): | 978-1-5090-1182-7 |
| ISBN (Online): | 978-1-5090-1181-0 |

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

| | Page |
|---|-------------|
| <i>Organizing Committee</i> | iii |
| <i>Reviewers</i> | iv |
| <i>Table of Contents</i> | v |
| <i>Paper Title & Authors</i> | |
| HeartSaver: A Heart Rate Monitoring System with SMS Notification Alvin L. Valor, Mary Regina B. Apsay, James Russell M. Acebo, Arfel Aguilar, Tim Lorenz D. Oblanca, Marissa G. Chua and Christine Joy B. Onquit | 1 |
| Haze Monitoring based on Air Pollution Index (API) and Geographic Information System (GIS) Norsuzila Ya'acob, Aziean M. Azize, Noranizar M. Adnan, Azita Laily Yusof and Suzi Seroja Sarnin | 7 |
| Smart Parking System using Geographic Information System (GIS) Norsuzila Ya'acob, Aziean Mohd Azizie, Nik M. Ridhwan Nik Zainal Alam, Azita Laily Yusof and Darmawaty Mohd Ali | 12 |
| Investigation on Performance of Model Reference Adaptive Control (MRAC) and PI Controller for Machine Tool Application S. C. K. Junoh, L. Abdullah, N. A. Anang, Z. Retas and S. N. S. Salim | 17 |
| NMPC-based Trajectory Tracking and Collision Avoidance of Unmanned Surface Vessels with Rule-based Colregs Confinement Mohamed Abdelaal and Axel Hahn | 23 |
| Greedy Spiral Dynamic Algorithm with Application to Controller Design M. R. Hashim and M. O. Tokhi | 29 |
| A Kalman Filter Approach to PCB Drill Path Optimization Problem Nor Hidayati Abdul Aziz, Nor Azlina Ab Aziz, Zuwairie Ibrahim, Saifudin Razali, Khairul Hamimah Abas and Mohd Saberi Mohamad | 33 |
| Embedded Human Detection System Based on Thermal and Infrared Sensors for Anti-Poaching Application Ting Feng Tan, Soo Siang Teoh, Jun Ee Fow and Kin Sam Yen | 37 |
| Hardware Based Design and Implementation of a Bottle Recycling Machine using FPGA Maofic Farhan Karin, Khandaker Sharif Noor and Hasan U. Zaman | 43 |
| Design and Development of Thermoelectric Generator Kit from Car Engine Heat NFA Abdul Rahman, N. F. Mohd Zambri, H. C. Mat Haris and M. H. Fazalul Rahiman | 47 |
| Development of Energy Harvesting Using Speed Breaker H. C. Mat Haris, MAN Mohd Nor, M. H. Fazalul Rahiman and NFA Abdul Rahman | 53 |
| Design and Development of Automatic Carwash System Anam Abid, Tahir Hasan, Taimoor Baig and Abdullah Jadoon | 58 |

| | |
|--|-----|
| Cluster Based Regression Model on Dengue Incidence Using Dual Climate Variables | 64 |
| Shermon S. Mathulamuthu, Vijanth S. Asirvadam, Sarat C. Dass and Balvinder S. Gill | |
| Human Action Estimation Based on Non-dedicated Sensor Information for Environmental Control in University Library | 70 |
| Kimio Oguchi, Yuta Masuda and Dai Hanawa | |
| Performance Comparison of THF-NLFXLMS and VFXLMS algorithms for Hammerstein NANC | 76 |
| Radik Srazhidinov and Raja Kamil | |
| Hybrid Task Scheduling Framework Based On EDF and HPIO in Overloaded Situation: For Preemptive System by Multiprocessor | 80 |
| Amir Hatami Hardoroudi and Suriayati Chuprat | |
| Robustness Analysis of the Improved Minimum Descriptive Length Stopping Criterion | 86 |
| Roslina Mohamad, Murizah Kassim, Harlisya Harun and Nuzli Mohamad Anas | |
| Modelling Neutral to Earth Voltage (NTEV) on the Commercial Building | 91 |
| Mohd Abdul Talib Mat Yusoh, Ahmad Farid Abidin, Zuhaila Mat Yasin, Mohd Fais Ghani and Usamah Mat | |
| Comparison of Real Time Voltage Sag Detection Based on Discrete and Continuous Wavelet Transform in LabVIEW | 97 |
| Mohd Fais Abd Ghani, Ahmad Farid Abidin and Naeem S. Hannon | |
| Image Segmentation of Microscopic Wastewater Images Using Phase Contrast Microscopy | 102 |
| Humaira Nisar, Ho Yuen Hang, Soh Chit Siang and Muhammad Burhan Khan | |
| Image Classification Using Wavelet Coefficients for Video Surveillance | 107 |
| Ong Yew Fai, Yap Vooi Voon and Humaira Nisar | |
| Digitalization of Linear Back Projection Algorithm for FPGA Implementation | 113 |
| R. Amirulah, S. Z. M. Muji, M. H. Jabbar, Ruzairi Abdul Rahim and Mohd Hafiz Fazalul Rahiman | |
| Sensor Fusion of INS, Odometer and GPS for Robot Localization | 118 |
| Sofia Yousuf and Muhammad Bilal Kadri | |
| A Brief Study on Paddy Applications with Image Processing and Proposed Architecture | 124 |
| Sofianita Mutalib, Mohd. Hafiz Abdullah, Shuzlina Abdul Rahman and Zalilah A. Aziz | |
| Multiphase Flow Velocity Measurement of Chemical Processes using Electrical Tomography: A Review | 130 |
| H. L. M. Ameran, E. J. Mohamad, S. Z. M. Muji, R. A. Rahim, J. Abdullah and W. N. A. Rashid | |
| Analysis of Kinematic Gait Parameters in Stroke with Diabetic Peripheral Neuropathy (DPN) | 136 |
| Nurhazwani Anang, Rozita Jailani, Nooritawati Md Tahir, Haidzir Manaf and Nadia Mustafah | |
| Formulation of a Lightweight Hybrid AI Algorithm Towards Self-Learning Autonomous Systems | 142 |
| Yusman Yusof, H. M. Asri H. Mansor and Adizul Ahmad | |
| Spectral Efficiency Analysis of Massive MIMO System | 148 |
| M. Sampath Reddy, T. Anil Kumar and K. Srinivasa Rao | |

| | |
|--|-----|
| Interval Type-2 Fuzzy Logic Controller for Multi Input Multi Output System: A Shower System Case Study | 154 |
| Dwi Ana Ratna Wati | |
| Levenberg-Marquardt Flood Prediction for Sungai Isap Residence | 160 |
| Khoo Chun Keong, Mahfuzah Mustafa, Ahmad Johari Mohammad, Mohd Herwan Sulaiman, Nor Rul Hasma Abdullah, Rosdiyana Samad and Dwi Pebrianti | |
| Laser Range Finder Filters for Mapping and Localisation | 166 |
| Marni Azira Markom, Shazmin Aniza Abdul Shukor, Norasmadi Abdul Rahim and Abdul Hamid Adom | |
| Classification of Asthma Severity Levels by Wheeze Sound Analysis | 172 |
| Syamimi Mardiah Shaharum, Kenneth Sundaraj, Shazmin Aniza, Rajkumar Palaniappan and Khaled Helmy | |
| Pulsed Solar Panel Light Current-Voltage Characterization Based on Zener Diode | 177 |
| Victor C. H. Lim, Cheow Siu Leong, Kamaruzzaman Sopian and Saleem H. Zaidi | |
| Adaptive Secured Multicast Key Management with Re-Keying Process | 181 |
| Jahir Ibna Rafiq, Abdullah Al-Omar, Animesh Chakraborty and Alzub Yusuf | |
| Application of Discrete Wavelet Transform in Thermal Infrared Image Processing | 186 |
| Mohd Rizman Sultan Mohd, Sukreen Hana Herman and Zaiton Shariff | |
| Prediction of AC Power Output for Grid-Connected Photovoltaic System using Different Input in Artificial Neural Network | 192 |
| Norfarizani Nordin, Shahril Irwan Sulaiman and Ahmad Maliki Omar | |
| Optimal Design of Stand Alone Photovoltaic System By Using Evolutionary Programming | 196 |
| Zulkifli Othman, Shahril Irwan Sulaiman, Ismail Musirin, Ahmad Maliki Omar and Sulaiman Shaari | |
| Assessment of Evolutionary Programming, Firefly Algorithm and Cuckoo Search Algorithm in Single-Objective Optimization | 202 |
| Muhammad Zakyizzuddin Rosselan and Shahril Irwan Sulaiman | |
| Classification of Lubricant Oil Odor-Profile Using Case-Based Reasoning | 207 |
| Suhaimi Mohd Daud, Muhammad Sharfi Najib and Nurdiyana Zahed | |
| The Feasibility Study of Applying Solar Tracking in Power Plant Kuala Perlis, Malaysia | 213 |
| Fahisal Abdullah, M. Arkam C. Munaaim, Shafriza Nisha Basah and Sazali Yaacob | |
| Harmonic Distortion Mitigation for Multiple Modes Charging Station via Optimum Passive Filter Design | 219 |
| K. H. Shafad, J. J. Jamian and S. A. S. Nasir | |
| Remote Monitoring System based on a Wi-Fi Controlled Car Using Raspberry Pi | 224 |
| Nazirah Ahmad Zaini, Norliza Zaini, Mohd Fuad Abdul Latip and Nabilah Hamzah | |
| Development of Androids Based System for Manufacturing Operation | 230 |
| Mohd Azmi Hussin, Shahrani Shahbudin, Nooritawati Md Tahir | |
| Moment of Inertia of a DC Motor as Significant Factor on the Performance of PSO Algorithm Utilizing WTRI Based Fitness Function | 236 |
| Mohd Azri Abdul Aziz, Mohd Nasir Taib and Ramli Adnan | |
| The Significance of Prioritized Weight in WTRI based Fitness Function on PSO Algorithm Under Different Range of Moment of Inertia of a DC Motor | 242 |
| Mohd Azri Abdul Aziz, Mohd Nasir Taib and Ramli Adnan | |

| | |
|---|-----|
| New Technique for Decreasing of Total Harmonic Distortion of Three Phases Bridge Rectifier by using the Method of Harmonic Injection | 248 |
| Ali Saadon Al-Ogaili, Ishak Aris, Mohammad Lutfi Othman, Norhafiz B. Azis, Dino Isa and Yap Hoon | |
| Author's Index | 254 |