

2009 International Conference on Industrial and Information Systems

(ICIIS 2009)

**Peradeniya, Sri Lanka
28-31 December 2009**



**IEEE Catalog Number: CFP0958A-PRT
ISBN: 978-1-4244-4836-4**

2_Committee_pp_iii_iv.pdf;	Conference organising committee;	pages iii-iv
3_Reviewe_pp_v_vii.pdf;	International review committee;	pages v-vii
4_Advisory_pp_viii.pdf;	International advisory committee;	pages viii

1. CIE1-1.pdf;
An End to End Correctness Verification Approach For Application Specific Usage Control;
Rajkumar P.V., Ghosh S.K., Pallab Dasgupta;
pp 1 – 6.
2. CIE1-2.pdf;
A Novel and Efficient Cryptosystem for Long Message Encryption;
Debasish Jena, Saroj Kumar Panigrahy, Sanjay Kumar Jena;
pp 7 – 9.
3. CIE1-3.pdf;
Human Iris Pattern Recognition Using Phase Components of Image;
Patil B.G., Subbaraman S.;;
pp 10 – 14.
4. CIE1-4.pdf;
Secured Communication using Steganography Framework with Sample RTF Implementation;
Vijayaratnam Ganeshkumar, Ravindra L. W. Koggalage;
pp 15 – 21.
5. CIE1-5.pdf;
A Modified Remote User Authentication Scheme using Smart Card based on ECDLP;
Debasish Jena, Saroj Kumar Panigrahy, Sanjay Kumar Jena, Subhendu Kumar Pani;
pp 22 – 25.
6. CIE1-6.pdf;
A Random Block Length Based Cryptosystem through Multiple Cascaded Permutation - Combinations and Chaining of Blocks;
Jayanta Kumar Pal, Mandal J.K.;;
pp 26 – 31.
7. CIE2-1.pdf;
Network Coding-aware Data Aggregation for a Distributed Wireless Sensor Network;
Rout R.R., Ghosh S.K., Chakrabarti S.;

pp 32 – 36.

8. CIE2-2.pdf;
Power Line Intercom – Narrowband Voice Communication over Power Line;
Mahendra Samarawickrama, Kasun Pathirage, Harshaka Samarasekara, Asanka Wickramasinghe;
pp 37 – 42.
9. CIE2-3.pdf;
Self Organizing Wireless Sensor Network with Distributed Intelligent (SOWDD);
Narampanawe K.M.M.W.N.B., Navaratne M.A.U.S., Wijayakulasooriya J.V.;
pp 43 – 48.
10. CIE2-4.pdf;
Case Study of WSN as a Replacement for SCADA;
Chakshika Amarawardhana, Kushan Sharma Dayananada, Harshana Porawagama, Chandana Gamage;
pp 49 – 54.
11. CIE2-5.pdf;
Ethernet frame tunneling over GPRS/EDGE for universal network monitoring;
Fernando T.N.C., Samarasinghe A.T.L.K.;
pp 55 – 61.
12. CIE2-6.pdf;
Transcoding based optimum quality video streaming under limited bandwidth;
Michael Medagama, Dileeka Dias, Shantha Fernando;
pp 62 – 67.
13. CIE2-7.pdf;
A Service Platform for Subscription-Based Live Video Streaming;
Kelum Vithana, Shantha Fernando, Dileeka Dias;
pp 68 – 73.
14. CIE2-8.pdf;
Total Traceability System: A Sustainable Approach for Food Traceability in SMEs;
Rohan Samarasinghe, Nishantha G.G.D., Noriyuki Shutto;
pp 74 – 79.
15. CIE3-1.pdf;
Multiplier-Free Realtime Phase Tracking in Digital Synchronous QPSK Receiver for Coherent Optical Detection;
Hoffmann S., Herath V., El-Darawy M., Pfau T., Wördehoff C., Peveling R., Rückert U, Noé R.;
pp 80 – 82.
16. CIE3-2.pdf;
Survey on Optical Burst Switching in WDM Networks;
Pushpendra Kumar Chandra, Ashok Kumar Turuk, Bibhudatta Sahoo;
pp 83 – 88.

17. CIE3-3.pdf;
A Parametric Study of Equiangular Spiral Antenna (Arm type);
Fernando C.S.R., Uduwawala D.;
pp 89 – 93.
18. CIE3-4.pdf;
Hybrid T-shaped Monopole / Dielectric Resonator Antenna as EMI sensor;
Saswati Ghosh;
pp 94 – 97.
19. CIE3-INV.pdf;
Electromagnetic Field Computation: The Beginnings and Current Directions in
Optimization;
Paul Ratnamahilan P. Hoole¹, S. Ratnajeevan H. Hoole;
pp 98 – 103.
20. CIE4-1.pdf;
Convergence Analysis of Turbo Equalization in ST Block-Coded MIMO Systems;
Wavegedara K.C.B., Vijay K. Bhargava;
pp 104 – 111.
21. CIE4-2.pdf;
An Analytical Framework for Cluster Distribution of EDCR Class of Algorithms in
Wireless Sensor Networks;
Sankalpa Gamwarige, Chulantha Kulasekera;
pp 112 – 117.
22. CIE4-3.pdf;
Energy Detection of Primary Signals over $\eta - \mu$ Fading Channels;
Saman Atapattu, Chintha Tellambura, Hai Jiang;
pp 118 – 122.
23. CIE4-4.pdf;
Comparison of Propagation Models for Fixed WiMAX System based on IEEE 802.16-
2004;
Amarasinghe K.C., Peiris K.G.A.B., Thelisinghe L.A.D.M.D., Warnakulasuriya G.M.,
Samarasinghe A.T.L.K.;
pp 123 – 129.
24. CIE4-5.pdf;
Performance Analysis for Differential Phase Shift Keying Signals with Equal Gain
Combining over Nakagami Fading Channels;
Adikari P.L.K., Ruwanpathirana N.S., Ekanayake N;
pp 130 – 132.
25. CIE4-6.pdf;
Channel Equalization for ISI Channels using Wilcoxon Generalized RBF;
Devi Rani Guha, Sarat Kumar Patra;
pp 133 – 136.

26. CIE4-8.pdf;
A Review on Energy Efficient MAC Protocols for Wireless LANs;
Niranjan Kumar Ray, Ashok Kumar Turuk;
pp 137 – 142.
27. CIE5-2.pdf;
Laguerre Series Expansion for the Density Function of Sum of Random Variables and
its Application to Analysis of EGC Diversity Systems;
Amarakone U., Ekanayake N.;
pp 143 – 147.
28. CIE5-3.pdf;
Hermite Series Expansion of the PDF of Sum of Random Variables and Its Application
to Analysis of Equal Gain Combining Diversity Reception;
Samarasinghe S.M.P.N., Wasalthilake D.N., Ekanayake N.;
pp 148 – 151.
29. CIE5-4.pdf;
Data Dissemination and Routing in a Gossip Based Mobile Environment;
Bandara H.M.D.C., Ranasinghe D.N.;
pp 152 – 157.
30. CIE5-5.pdf;
A Redundant Neighborhood Approach to Tolerate Access Point Failure in IEEE 802.11
WLAN;
Manmath Narayan Sahoo, Pabitra Mohan Khilar, Banshidhar Majhi;
pp 158 – 162.
31. EICS1-1.pdf;
A Simple Battery Chemistry Identification and Implementation Technique for a Self
Adaptable Charger;
Navaratne M.A.U.S, Koswatta R.V, Abeyratne S.G.;
pp 163 – 168.
32. EICS1-3.pdf;
Multi-Cell Operation of a High-Frequency Isolated DC/AC Converter for Grid-
Connected Wind Generation Applications;
Xiaodong Li, Ashoka K.S. Bhat;
pp 169 – 174.
33. EICS1-4.pdf;
A Genetic Algorithm Based Fuzzy Goal Programming Solution Approach to Chance
Constrained Bilevel Programming Problems;
Bijay Baran Pal, Debjani Chakraborti, Papun Biswas;
pp 175 – 180.
34. EICS1-5.pdf;
A Genetic Algorithm Based Hybrid Goal Programming Approach to Land Allocation
Problem for Optimal Cropping Plan in Agricultural System;

- Bijay Baran Pal, Debjani Chakraborti, Papun Biswas;
pp 181 – 186.
35. EICS1-6.pdf;
A Genetic Algorithm Approach for Fuzzy Goal Programming Formulation of Chance
Constrained Problems Using Stochastic Simulation;
Bijay Baran Pal, Somsubhra Gupta;
pp 187 – 192.
36. EICS2-1.pdf;
Development of an automated testing software for real time systems;
Arunkumar Balakrishnan, Anand NK;
pp 193 – 198.
37. EICS2-2.pdf;
A Multi-Agent System for Dynamic Ride Sharing;
Bandara H.A.N.C., Dileeka Dias;
pp 199 – 203.
38. EICS2-3.pdf;
Possibilistic Decision Trees for Intrusion Detection in IEC61850 Automated
Substations;
Upeka Premaratne, Charles Ling, Jagath Samarabandu, Tarlochan Sidhu;
pp 204 – 209.
39. EICS2-4.pdf;
User Friendly Line CAPTCHAs;
Karunathilake A.K.B., Balasuriya B.M.D., Ragel R.G.;
pp 210 – 215.
40. EICS2-5.pdf;
Computational Intelligence Techniques to Optimize a Constrained Distribution
Operations;
Dharmapriya U.S.S., Siyambalapitiya S.B., Kulatunga A.K.;
pp 216 – 221.
41. EICS2-6.pdf;
Growing Self Organizing Map with an Imposed Binary Search Tree for Discovering
Temporal Input Patterns;
Sumith Matharage, Upuli Gunasinghe, Damminda Alahakoon;
pp 222 – 226.
42. EICS2-7.pdf;
Reverse Engineering as a Means of Improving and Adapting Legacy Finite Element
Code;
S. Ratnajeewan H. Hoole, T. Arudchelvam;
pp 227 – 232.
43. EICS2-8.pdf;
A web based methodology for Visualizing Timevarying Spatial Information;

- Dasuni Kannangara, Nimalika Fernando, Dileeka Dias;
pp 233 – 238.
44. EICS3-1.pdf;
A Fuzzy Goal Programming Approach for Solving Multiobjective Fuzzy Stochastic Programming Problems;
Bijay Baran Pal, Shyamal Sen, Mousumi Kumar;
pp 239 – 243.
45. EICS3-2.pdf;
A Linear Fuzzy Goal Programming Approach for solving patrol manpower deployment planning problems – A case study;
Bijay Baran Pal, Mousumi Kumar, Shyamal Sen;
pp 244 – 249.
46. EICS3-3.pdf;
Fuzzy Goal Programming Approach to Chance Constrained Multiobjective Decision Making Problems using Genetic Algorithm;
Bijay Baran Pal, Somsubhra Gupta, Papun Biswas;
pp 250 – 255.
47. EICS3-5.pdf;
Integrating Heterogeneous Geospatial Data for Decision Support System using Fuzzy Logic;
Indira Mukherjee, Ghosh S.K.;
pp 256 – 261.
48. EICS3-6.pdf;
Adaptive Neuro-Fuzzy Traffic Signal Control for Multiple Junctions;
Wannige C.T., Sonnadara D.U.J.;
pp 262 – 267.
49. EICS3-7.pdf;
Resource-Allocating Codebook for Patch-based Face Recognition;
Amirthalingam Ramanan, Mahesan Niranjan
pp 268 – 271.
50. EICS3-8.pdf;
Video Compression using Self Organizing Map and pattern storage using Hopfield Neural Network;
Manu Pratap Singh; Arya K.V.; Kajal Sharma;
pp 272 – 278.
51. EICS4-1.pdf;
A New Biologically Inspired Optimization Algorithm;
Upeka Premaratne, Jagath Samarabandu, Tarlochan Sidhu;
pp 279 – 284.
52. EICS4-2.pdf;
ECG delineation techniques and applications in Cobra venom interacted patients;

- Ranjan Maheshwari, Vinod Kumar, Verma H.K.;
pp 285 – 290.
53. EICS4-3.pdf;
An Interactive Cadaver Dissection Simulator;
Karunasekara P.P.C.R., Dissanayake M.M., Nuwan D. Nanayakkara;
pp 291 – 294.
54. EICS4-4.pdf;
Automatic Estimation of Macro-Sleep-Architecture using a Single channel of EEG;
Vinayak Swarnkar, Udantha R. Abeyratne, Craig Hukins;
pp 295 – 300.
55. EICS4-5.pdf;
Comparison of Standard Image Segmentation Methods for Segmentation of Brain
Tumors from 2D MR Images;
Gajanayake G.M.N.R., Yapa R.D., Hewawithana B.;
pp 301 – 305.
56. EICS5-1.pdf;
Loop Unrolling in Multi-pipeline ASIP Design;
Navarathna H.M.R.D.B., Radhakrishnan S., Ragel R.G.;
pp 306 – 311.
57. EICS5-2.pdf;
9.5 Gbit/s 20 Channel 1:8 DEMUX for a Coherent Optical Receiver DSPU ASIC Input
Interface;
Vijitha R. Herath, Olaf Adamczyk, Ralf Peveling, Christian Wödehoff, Reinhold Noé;
pp 312 – 316.
58. EICS5-4.pdf;
Implementation and Analysis of VCO Based Power-Clock Supply Generator;
Prasad D Khandekar, Shaila Subbaraman, Achint Sharma;
pp 317 – 320.
59. EICS5-5.pdf;
Quasi-Adiabatic 2X2 Barrel Shifter;
Prasad D Khandekar, Shaila Subbaraman, Venkat Raman Vinjamoori;
pp 321 – 324.
60. EICS5-6.pdf;
Comprehensive Address Generator for Digital Signal Processing
Ramesh Kini M., Sumam David S.;
pp 325 – 330.
61. EICS5-8.pdf;
Accelerating High Performance Applications with CUDA and MPI;
Karunadasa N.P., Ranasinghe D.N.;
pp 331 – 336.

62. EICS5-9.pdf;
FPGA-Based Compact and Flexible Architecture for Real-Time Embedded Vision Systems;
Mahendra Samarawickrama, Ajith Pasqual, Ranga Rodrigo;
pp 337 – 342.
63. EICS6-1.pdf;
A Framework for Block based Image Authentication (FBIA);
Nabin Ghoshal, Mandal J.K., Khamrui A.;
pp 343 – 348.
64. EICS6-3.pdf;
A surface-based metric for registration error quantification;
Nuwan D Nanayakkara, Bernard Chiu, Aaron Fenster,;
pp 349 – 353.
65. EICS6-4.pdf;
An Efficient 2D Image Registration Algorithm;
Arya K.V.;
pp 354 – 357.
66. EICS6-5.pdf;
Automatic Facial Landmark Detection in a Video Sequences of Non-Manual Sign Languages;
Mukesh Saraswat, Arya K.V.;
pp 358 – 361.
67. EICS6-6.pdf;
Second order difference based detection and directional weighted median filter for removal of random valued impulsive noise;
Pankaj Kumar Sa, Ratnakar Dash, Banshidhar Majhi;
pp 362 – 364.
68. EICS6-7.pdf;
Fast Predictive Wavelet Transform for Lossless Image Compression;
Savithra Eratne, Mahinda Alahakoon;
pp 365 – 368.
69. EICS6-8.pdf;
Natural Synthesis of North Indian Musical Instruments;
Gunasekera S.N., Wijayakulasooriya J.V., Perera P.C.;
pp 369 – 373.
70. EICS7-1.pdf;
Priority Driven Agent Based Retail Supply Chain Management System;
Ruvindee Rupasinghe, Sanjaya Ratnayake, Asoka Karunananda;
pp 374 – 379.
71. EICS7-2.pdf;
Theoretical based approach to English to Sinhala machine translation

- Hettige B., Karunananda A.S.;
pp 380 – 385.
72. EICS7-3.pdf;
Using Similarity Measures for Test Scenario Selection;
Sapna P.G., Hrushikesh Mohanty;
pp 386 – 391.
73. EICS7-4.pdf;
New Sierpinski's Models;
Munesh Chandra, Arya K.V., Sarangdevot S.S.;
pp 392 – 396.
74. EICS7-6.pdf;
Evaluation of Best Fit Video Visual Classifier for Compacted Dither Pattern Codes;
Lochandaka Ranathunga, Roziati Zainuddin, Nor Aniza Abdullah;
pp 397 – 402.
75. EICS7-7.pdf;
An Image Recognition System for Crop Disease Identification of Paddy fields in Sri Lanka;
Anthonys G., Wickramarachchi N.;
pp 403 – 407.
76. PSEHV1-2.pdf;
An Energy Management System for a Battery Ultracapacitor Hybrid Electric Vehicle;
Varsha A. Shah, Sanjay G. Karndhar, Ranjan Maheshwari, Prasanta Kundu, Hardik Desai;
pp 408 – 413.
77. PSEHV1-3.pdf;
An Autonomous Distributed Vehicle-to-Grid Control of Grid-connected Electric Vehicle;
Yutaka Ota, Haruhito Taniguchi, Tatsuhito Nakajima, Kithsiri M.Liyanage, Akihiko Yokoyama;
pp 414 – 418.
78. PSEHV1-4.pdf;
HVDC Transmission line for interconnecting power grids in India and Sri Lanka
Jowsick A.J.M.I., Arulampalam A., Wijekoon H.M.;
pp 419 – 424.
79. PSEHV1-5.pdf;
Design and Implementation of a Laboratory Scale VSC Controller – Practical Problems and Solutions;
Chandrasena R.P.S., Weerakoon W.M.M.T.S., Arulampalam A., Ekanayake J.B., Abeyratna S.G.;
pp 425 – 429.
80. PSEHV1-INV.pdf;

Coordinated Control of Elements in Ubiquitous Power Networks to Support Load Frequency Control;
Liyanage K.M., Yokoyama A., Ota Y., Taniguchi H., Nakajima T.;
pp 430 – 435.

81. PSEHV2-1.pdf;
Extracting Maximum Power from Photo-Voltaic Power Generator with Unlike PWM Pulses;
Hardik P. Desai, Ranjan Maheswari, Shambu N Sharma, Varsha Shah;
pp 436 – 441.
82. PSEHV2-2.pdf;
Performance Analysis of Various SRF Methods in Three Phase Shunt Active Filters;
Naimish Zaveri, Ankit Mehta, Ajitsinh Chudasama;
pp 442 – 447.
83. PSEHV2-3.pdf;
Dynamic Breaking Resistor Based Control of Generator for Improved Dynamics;
Bandara K.M.K.S., Arulampalam A., Abeyratne S.G.;
pp 448 – 453.
84. PSEHV2-4.pdf;
A Survey of Frequency Control Methods and Demand Side Contribution in Sri Lanka and in Great Britain;
Kamalanath Samarakoon, Janaka Ekanayake;
pp 454 – 459.
85. PSEHV2-5.pdf;
Power System Blackouts – Literature review;
Arulampalam Atputharajah, Tapan Kumar Saha;
pp 460 – 465.
86. PSEHV2-INV.pdf;
Multi-terminal DC converters for connecting Induction Generator based Distribution Generation;
Ekanayake J.B.;
pp 466 – 471.
87. PSEHV3-1.pdf;
Study on Switched Reluctance Generator for Rural Electrification;
Karthikeyan R., Vijayakumar K., Arumugam R.;
pp 472 – 476.
88. PSEHV3-2.pdf;
Optimization of FRT Active Power Performance of a DFIG during Transient Grid Faults;
Meegahapola L.G., Damian Flynn, Tim Littler;
pp 477 – 482.
89. PSEHV3-4.pdf;

- Monitoring of Moisture on Stator Winding Insulation during Drying Process;
Jayantha G.A., Fernando M.A.R.M., Ekanayake C.M.B.;
pp 483 – 488.
90. PSEHV3-5.pdf;
Calculation of Corona Voltage-Current Characteristics in Air;
Sarath Kumara, Yuriy Serdyuk, Stanislaw M. Gubanski;
pp 489 – 492.
91. PSEHV3-6.pdf;
Fast and Reliable Detection of Power Islands Using Transient Signals;
Lidula N.W.A., Rajapakse A.D.;
pp 493 – 498.
92. RMC1-1.pdf;
Development of a Holonomic Mobile Robot for Field Applications;
W. Rameesha de Silva, Rohan Munasinghe;
pp 499 – 504.
93. RMC1-2.pdf;
Analysis on Four Legged Multipurpose Rope Climbing Robot;
Hewapathirana N.D., Uddawatta L., Karunadasa J.P., Nanayakkara T.;
pp 505 – 510.
94. RMC1-3.pdf;
An Appropriate Formulation for Workspace Cross Section Area of 3R Robot
Manipulator;
Panda S., Mishra D., Biswal B.B., Choudhury B.B.;
pp 511 – 515.
95. RMC1-4.pdf;
Static Analysis of the Pneumatic Muscles Used in Robot Arms;
Samarasekara A.P.K.G.S.;
pp 516 – 519.
96. RMC1-5.pdf;
Generation of Robotic Assembly Sequence using Ant Colony Optimization
Sharma S., Mohapatra R.N., Biswal B.B., Choudhury B.B.;
pp 520 – 525.
97. RMC2-1.pdf;
Software Design tool for Optimum Axial Flux BLDC Motors;
Jayasundara J.W.K.K., Rohan Munasinghe;
pp 526 – 531.
98. RMC2-3.pdf;
Coupled Field Finite Element Analysis of Switched Reluctance Motor with Soft
Magnetic Composite Material for Thermal Characterization;
Vijayakumar K., Karthikeyan R., Arumugam R., Preamsunder G., Kannan S.;
pp 532 – 535.

99. RMC2-4.pdf;
Time-stepping Analysis of a Switched Reluctance Generator by Coupling Electric Circuit and Electromagnetic Finite Element Method;
Vijayakumar K., Karthikeyan R., Arumugam R., Prem Sunder G., Kannan S.;
pp 536 – 539.
100. RMC2-5.pdf;
Electric Vehicle Simulator to Determine motor and battery specifications;
Jayasundara J.W.K.K., Rohan Munasinghe;
pp 540 – 545.
101. RMC3-1.pdf;
A Study on a Poly-Bag Manufacturing System Preliminary Analysis and Simulation;
Gopura R.A.R.C., Jayawardene T.S.S.;
pp 546 – 551.
102. RMC3-3.pdf;
Waste Generation on Short Period Power Drops and Fluctuations;
Peiris K.R.A., Pasqal A.A.;
pp 552 – 557.
103. RMC3-4.pdf;
A Velocity Feedback Fuzzy Logic Controller for Stable Hovering of a Quad Rotor UAV;
Abeywardena D.M.W., Amaratunga L.A.K., Shakoor S.A.A., Munasinghe S.R.;
pp 558 – 562.
104. RMC3-5.pdf;
Real-Time Dynamic Traffic Light Timing Adaptation Algorithm and Simulation Software;
Dissanayake D.T., Senanayake S.M.R., Divarathne H.K.D.W.M.M.R., Samaranayake B.G.L.T.;
pp 563 – 567.
105. RMC3-6.pdf;
Design and Implementation of FPGA Based Low Power Digital PID Controllers;
Sreenivasappa B.V., Udaykumar R.Y.;
pp 568 – 573.
106. RMC4-1.pdf;
Design of a Fully Fledged uav Test-Bed with Internal and External Pilot;
Tennakoon W.T.M.S., Munasinghe S.R.;
pp 574 – 579.
107. RMC4-2.pdf;
Lagrangian Method for Solving Software-MCU Assignment Problem in Car Electronic System Design;
Jagath Weerasinghe, Masahiro Nagamatu;
pp 580 – 585.

108. RMC4-3.pdf;
Detection of Vehicles with Monolithic Classifier vis-à-vis a Boosted Cascaded Classifier;
Shehan Fernando, Lanka Udawatta, Pubudu Pathirana;
pp 586 – 591.
109. RMC4-4.pdf;
Shape Prior Based Object Extraction Using A Log-Polar Domian Representation;
Janaka Senarathna, Ranga Rodrigo;
pp 592 – 597.
110. RMC4-5.pdf;
Improvement of Decision Making Grid Model for Maintenance Management in Small and Medium Industries;
Zulkifli Tahir, Burhanuddin M.A., Ahmad A.R., Sami M. Halawani, Fahmi Arif,;
pp 598 – 603.