

2018 International Seminar on Intelligent Technology and Its Applications (ISITIA 2018)

**Bali, Indonesia
30-31 August 2018**



**IEEE Catalog Number: CFP18TIA-POD
ISBN: 978-1-5386-7655-4**

**Copyright © 2018 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:	CFP18TIA-POD
ISBN (Print-On-Demand):	978-1-5386-7655-4
ISBN (Online):	978-1-5386-7654-7

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

PREFACE	i
ORGANIZING COMMITTEE	ii
CONFERENCE PROGRAM	v
TABLE OF CONTENTS	xii
KEYNOTE LECTURES	
Prof. Dr. Mohammad Nuh, DEA	xix
Prof. Maurice Fadel	xx
Prof. Nathalie Raveu	xxi
Ir. Eko Yudo Pramono, M.T.	xxii
TECHNICAL PAPERS	
Radio Frequency Engineering	
New Fabry-Perot cavity antenna with Inhomogeneous Dielectric PRS <i>Sabrina Zaiter, Nathalie Raveu, Rachid Oussaid</i>	1
Planar Multiband MIMO Antenna for LTE and WLAN Applications <i>Stefanus Pratama Cahyanto, Eva Utami</i>	5
Design of 9.4 GHz Dielectric Resonator Oscillator with One Stage Amplifier <i>Yana Taryana, Yaya Sulaeman, Teguh Praludi, Yuyu Wahyu, Arief Budi Santiko</i>	9
Design and Analysis of C-Band Parabolic Antenna Materials for Synthetic Aperture Radar On-Board Microsatellite <i>Akbar Danar Abiwardana, Gamantyo Hendrantoro, Eko Setijadi, Josaphat Tetuko Sri Sumantyo</i>	15
Mutual Coupling Reduction & Bandwidth Enhancement Using a Simple Folded Slot-Partial Ground Plane in Dualband MIMO Antenna <i>Subuh Pramono, Budi Subagio</i>	19
Design of a SINRD bandpass filter based on equivalent circuit method <i>Ahlem Manal Chebihi, Nathalie Raveu, Mohamed Tellache</i>	23
Telecommunications & Networking	
Communication System on Wireless Sensor Networks using Raspberry Pi and Arduino for Monitoring Gas of Air Pollution <i>Misbah Misbah, Rini Astutik, Eliyani Eliyani, Hendra Winarno, Andy Mukhlis, Deny Andesta</i>	27
Raspberry Pi-Based VoIP System For Rural Area <i>Nazmia Kurniawati, Achmad Affandi, Istas Pratomo, Koichi Gyoda</i>	33
Trial and Evaluation of LoRa Performance For Smart System Multi-Client Model <i>Achmad Fauzi Rachmani, Fitri Yuli Zulkifli</i>	39

Power Systems

Analysis of The Frequency and Voltage Changes While Load Shedding in The Multimachine System <i>Irrine Budi Sulistiawati, Aziz Nurdiansyah, Ardyono Priyadi, Ibg Manuaba, Abraham Lomi</i>	45
Improving Transient Stability Assessment by Installing Super Capacitor Energy Storage using Critical Trajectory Method based on Modified Losing Synchronism <i>Talitha Puspita Sari, Ardyono Priyadi, Margo Pujiانتara, Naoto Yorino, Mauridhi Hery Purnomo</i>	51
CF IPP Controlling Based on AFPM by Developing Monitoring Application to Reduce Incentive Cost <i>Diana Pitaloka, Yusuf Kuncoro, Wuri Catur Prasetyo, Mohammad Jaya, Adi Purwanto, Eko Pramono</i>	57
Losing Synchronism Technique based on Critical Trajectory Method for Obtaining The CCT with Installing SCES <i>Ardyono Priyadi, Talitha Puspita Sari, Isa Hafidz, Margo Pujiانتara, Naoto Yorino, Mauridhi Hery Purnomo</i>	63
Experimental Modeling of Nano Power Generation using Thermoelectric Generator (TEG) from Incinerator Waste Heat <i>Asepta Surya Wardhana, Miftah Fauzan, Syed Islam, SM Muyeen, Soedibyo Soedibyo, Mochamad Ashari</i>	67
Fault Location and Voltage Sag Analysis in Electric Distribution Network <i>Wildan Febrianto, Mohammad Gunartono, Ontoseno Penangsang, Rony Seto Wibowo</i>	71
Energy Curtailment to Manage Power Output in Active Distribution Network <i>Latifatul Purwitosari, Ontoseno Penangsang, Rony Seto, Indri Suryawati</i>	77
Study Maturity level of SCADA at Pusat Pengaturan Beban Java-Bali area using ITIL Self assessment <i>Ilham Miftha Faiz, Istas Pratomo</i>	83
Effect of Three Pole Auto-Reclose to Power System Transient Stability (Case Study: Jawa Timur and Bali System) <i>Yenni Tarid, Yonny Wicaksono</i>	89
Four-leg Voltage Source Inverter for Voltage and Current Balancing of Distribution Transformer with Distributed Generations <i>Dedy Kurnia Setiawan, Mochamad Ashari, Heri Suryoatmojo</i>	93
Experimental and Numerical Analysis Design of a Lab-Scale on Horizontal Axis Wind Turbine with Winglets <i>Nyoman Ade Satwika, Ridho Hantoro, Sarwono Sarwono</i>	99
Energy Consumption of Brushless DC Motor for Modern Irrigation System <i>Suwito Suwito, Mochamad Ashari, Muhammad Rivai, M. Anis Mustaghfirin</i>	105
Impact of Sizing in VAHT-SBC to The Channel Blockage <i>Ahmad Wildan Mahmashani, Ridho Hantoro, Erna Septyaningrum, Okky Agassy Firmansyah, Fanisa Zidna</i>	111
State Estimation for Radial Passive Distribution System using Hamiltonian Cycle Theory Based on Geographic Information System (GIS)	117

Web-based Online Monitoring of Low Voltage Series Arcing with Line Impedance Analysis <i>Dimas Asfani, Daniar Fahmi, I Made Yulistya Negara, Agung Brastama, Firdaus Kurniawan, Ikhlas Ramadhan</i>	123
High Voltage Engineering	
Comparison of Ferroresonance Response on Three Phases Transformer with Different Core Material: M5 and ZDKH <i>I Made Yulistya Negara, I Gusti Satriyadi, Dimas Asfani, Daniar Fahmi, Mochammad Wahyudi, Reno Hidayat</i>	129
Impact of Diameter and Gap Distance on Partial Discharge Detection in Transformer Oil using RTL-SDR Method <i>Daniar Fahmi, I Made Yulistya Negara, Dimas Asfani, I Gusti Satriyadi, Mochammad Wahyudi, Hadi Al - Azmi</i>	135
Study of Petersen Coil Grounding System Inductance Variation on Ferroresonance in 150 kV Transformer <i>I Gusti Satriyadi, I Made Yulistya Negara, Dimas Asfani, Daniar Fahmi, Mochammad Wahyudi, Kadek Anugrah</i>	141
Power Electronics	
Performance of BLDC Motor Speed Control Based on Hysteresis Current Control Mechanism <i>Heri Suryoatmojo, Friskarine Gity Cladella, Vita Lystianingrum, Dedet Candra Riawan, Ronny Mardiyanto and Devi Ariana</i>	147
Design of Interval Type-2 Fuzzy Logic Control for Voltage Controller on Buck Converter <i>Muhammad Khamim Asy'ari, Ali Musyafa'</i>	153
Design of Surge Test Device for Brushless DC Motor in Electric Scooter Application <i>Dimas Asfani, Dedet Riawan, I Made Yulistya Negara, Daniar Fahmi, Angga Hudaya, Dhanang Laksono</i>	157
Design Analysis of Axial Flux Permanent Magnet BLDC Motor 5 kW for Electric Scooter Application <i>Yoga Nugraha, Muhammad Nur Yuniarto, Herviyandi Herizal, Dimas Asfani, Dedet Riawan, Mochammad Wahyudi</i>	163
Fuzzy Logic Based MPPT with Feedback Control for Photovoltaic Application <i>Akhmad Musafa, Peby Purnawan, Ardyono Priyadi, Margo Pujiانتara, Alvin Tri Yulianto, Mauridhi Hery Purnomo</i>	169
Design of Performance and Parameter Measurement System for Brushless Direct Current (BLDC) Motor <i>Ayuning Desanti, Indra Sidharta, Hendry Erwantono, Dimas Asfani, Heri Suryoatmojo, Mochammad Wahyudi</i>	175
Intelligent Systems in Power Engineering	
Islanding Detection in Grid-Connected Distributed Photovoltaic Generation Using Artificial Neural Network <i>Tirta Mehang, Dedet Riawan, Vita Lystianingrum</i>	181
Obtaining The Setting of Inverse-Curve Overcurrent Relay using Serial Computing Modified Particle Swarm Optimization in Real System Applications	187

<i>Vincentius Raki Mahindara, Muhammad Guntur Istiqlal, Margo Pujiantara, Dimas Asfani, Ardyono Priyadi, Mauridhi Hery Purnomo</i>	
Islanding Detection on Grid-Connected Current Source Inverter Based on Discrete Wavelet Transformation	193
<i>Aggie Vernandez, Dedet Riawan, Dimas Asfani</i>	
Wavelet Filter Selection Analysis for Air Gap Eccentricity in Three Phase Induction Motor	199
<i>Restu Mukti Utomo, I Made Yulistya Negara, Dimas Asfani, Nur Alham</i>	
Optimization of Overcurrent Relay Operation Using Artificial Intelligent on Radial Topology with Load Constraint	205
<i>Nugraha Wibowo, Vincentius Raki Mahindara, Ardyono Priyadi, Margo Pujiantara, Mauridhi Hery Purnomo</i>	
Semi-Supervised Learning Optimization Based on Generative Models to Identify Type Of Electric Load at Low Voltage	209
<i>Fawaati Tsabita, Vita Lystianingrum, Rosmaliati Rosmaliati, Nur Rohman Widiyanto, Mauridhi Purnomo</i>	
Fuzzy Logic Control Design of Mobile PV Using Bacterial Foraging Optimization	215
<i>Dwi Nur Fitriyanah, Imam Abadi</i>	
Information Systems	
Adaptive Mobile Learning in the Nearby Wisdom App	221
<i>Hardika Dwi Hermawan, Ratna Wardani, Julian Chu, Arum Darmawati, Muhammetmyrat Yarmatov</i>	
Performance Evaluation of NFS-based Primary Storage with Deduplication using Windows Server and RAM-based Cache on Small-scale VMware Environment	227
<i>Marcel Yap</i>	
A Web-Based High School Major Decision Support System In Banten Using Tsukamoto's Fuzzy Method	233
<i>Ana Rusmardiana, Tri Yani Akhirina, Dwi Yulistiyanti, Ulfa Pauziah</i>	
Searching Cheapest Product On Three Different E-Commerce Using K-Means Algorithm	239
<i>Vincentius Prasetyo</i>	
Designing a Technology-Enhanced Flipped Learning Model Using Schoology LMS	245
<i>Zamzami Zainuddin, Habiburrahim Habiburrahim, Hardika Dwi Hermawan</i>	
Evaluating Certificate Policy - Certification Practice Statement of Unique Government Certification Authority using Public Key Infrastructure Assessment Guidelines: Research in Progress	251
<i>Dea Saka Kurnia Putra, Edit Prima</i>	
Fuzzy Analytic Network Process-based Automatized SWOT Analysis for Optimizing Generation of Vocational School Accreditation Report	257
<i>Veronika Arisanti, I. Sukajaya, Kadek Yota Ernanda Aryanto</i>	
Analysis of User Acceptance Factors for Mobile Apps Browser Using Unified Theory of Acceptance and Use of Technology (UTAUT) and Task Technology Fit (TTF) on Generation Y	263
<i>Mochamad Chandra Saputra, Niken Hendrakusma Wardani, Rahmat Trialih, Atiyyah Lia Hijriyati</i>	
Indonesian Question Generation Based on Bloom's Taxonomy Using Text Analysis	269

<i>Selvia Kusuma, Daniel Siahaan, Chastine Fatichah, Rinanza Alhamri, Mohammad Naufal</i>	
Crowds Evacuation Simulation on Heterogeneous Agent Using Agent-Based Reciprocal Velocity Obstacle	275
<i>Fadil Muhammad, Susi Juniastuti, Supeno Susiki, Mochamad Hariadi</i>	
Analysis of Internet of Things (IoT) Networks Using Extrinsic Information Transfer (EXIT) Chart	281
<i>Fransisca Pasalbessy, Khoirul Anwar</i>	
Image and Signal Processing	
A High Capacity and Imperceptible Text Steganography Using Binary Digit Mapping on ASCII Characters	287
<i>Alfin Naharuddin, Surya Sumpeno, Adhi D Wibawa</i>	
Indonesian Sign Language Recognition by Using the Static and Dynamic Features	293
<i>Wijayanti Nurul Khotimah, Nanik Suciati, Ignatius Benedict</i>	
Ultraviolet Rupiah Currency Image Recognition using Gabor Wavelet	299
<i>Anggarjuna Puncak Pujiputra, Hendra Kusuma, Tri Arief Sardjono</i>	
Automatic Image Annotation using Minimum Barrier Salient Object Detection and Random Forest	305
<i>Theresia Hendrawati, I. Sukajaya, Kadek Yota Ernanda Aryanto</i>	
Effect of using window type on Time Scale Modification on Voice Recording Using Waveform Similarity overlap and add	311
<i>Nanda Saputri, Yoyon Suprpto, Diah Wulandari</i>	
Mango Leaf Classification with Boundary Moments of Centroid Contour Distances as Shape Features	317
<i>Eko Prasetyo, R. Dimas Adityo, Nanik Suciati, Chastine Fatichah</i>	
Focal Length Changes Estimation on Zooming Stereo Camera using Fundamental Matrix	321
<i>Kurnia Prima Putra, Eko Mulyanto Yuniarno, Mauridhi Hery Purnomo</i>	
Heading Calculation from Sequence of Images Based on Corner Feature Detection and Optical Flow Algorithm	327
<i>Daniel Haryono, Djoko Purwanto, Hendra Kusuma</i>	
Inclined Image Recognition for Aerial Mapping by Unmanned Aerial Vehicles	333
<i>Muhammad Attamimi, Ronny Mardiyanto, Astria Nur Irfansyah</i>	
Mbojo Character Recognition Using Shearlet Transform and Support Vector Machine	339
<i>Mahathir Rizky, Ingrid Nurtanio, Intan Sari Areni</i>	
A Geometry-Based Underwater Acoustic Channel Model for Time Reversal Acoustic Communication	345
<i>Yuning Widiarti, Suwadi Suwadi, Wirawan Wirawan, Titiek Suryani</i>	
Non-Linear Spatio-Temporal Input Selection for Rainfall Forecasting Using Recurrent Neural Networks	351
<i>Ahmad Saikhu, Agus Z Arifin, Chastine Fatichah</i>	
Control Systems	
Development of Autopilot system of Unmanned Aerial Vehicle for Aerial Mapping Application	357

A practical coordinated trajectory tracking control for over actuated systems: a case study for a group of four-wheels omnidirectional mobile robots <i>Sisdarmanto Adinandra</i>	363
A model of reliability, average reliability, availability, maintainability and supportability for service with system dynamics approach <i>Mudjahidin Mudjahidin, Joko Buliali, Muhammad Nur Yuniarto</i>	369
Automated Robotic Moisture Monitoring in Agricultural Fields <i>Senthil Palanisamy, Akila IS</i>	375
Study and Design of Self-Adaptive Pid-Fuzzy Control on Multistage Steam Turbine Rotation Setting <i>Rusdhianto Efendi Abdul Kadir, Eka Iskandar, Mochammad Rameli, Irfan Syuhudi</i>	381
Nutrient Film Technique based Hydroponic System Using Fuzzy Logic Control <i>Siti Mashumah, Muhammad Rivai, Astria Nur Irfansyah</i>	387
Ladder Diagram Design Based On Huffman Method For Selection And Assembling Part On Dual Conveyor Plant <i>Eka Iskandar, Mochammad Rameli, Wildan Ramadhan</i>	391
Identification of Four Wheel Mobile Robot Based on Parametric Modelling <i>Brian Raafiu, Purwadi Darwito</i>	397
Applied Electronics	
Implementation and Feasibility Analysis of GSM Based Smart Energy Meter for Digitalized Power Consumption with Advanced Features <i>Intiaj Khan, Shuva Mitra, Ovishek Morshed, Abdul Ahad, Rohan Sarker, Sayeed Shafayet Chowdhury</i>	403
Milk Assessment using Potentiometric and Gas Sensors In Conjunction With Neural Network <i>Marson Ady Putra, Muhammad Rivai, Achmad Arifin</i>	409
Design and Implementation of a Piezoelectric Accelerometer Using Arduino Mega For Detection of Vibration on the 20 kV Transformer Tank <i>Tauruski Anwar, Rosmaliati Rosmaliati, Vita Lystianingrum, Ardyono Priyadi, Mauridhi Hery Purnomo, Ahmad Adila</i>	413
Design of Dye-Sensitized Solar Cell Using Ultrasonic Coating Method <i>Muhammad Aulia Sembiring, Muhammad Rivai, Tri Arief Sardjono</i>	419
Smart Mobile Phone Usage Restriction by Extending Phone Circuitry- An Alternative to Jamming <i>Senthil Palanisamy, Manoharan Abitha Thangam</i>	425
Smart Control of Air Conditioning System Based on Number and Activity Level of Persons <i>Fajar Budiman, Muhammad Rivai, I Gusti Bagus Prasta Raditya, Daniel Krisrenanto, Irma Zahroul Amiroh</i>	431
Biomedical Engineering	
EEG Signal Classification Using AAR and Resilient Propagation with Emotiv EPOC Device <i>Miftah Ariyati, Ahmad Musthafa</i>	437

Design of Intonation Control on Electrolarynx Using Electromyograph (EMG) <i>Mikail Widagda, Tri Arief Sardjono, Ronny Mardiyanto</i>	443
Heart Rhythm Classification from Electrocardiogram Signals Using Hybrid PSO- Neural Network Method and Neural ICA <i>Miftah Ariyati, Aulia Nasution</i>	449
EEG features extraction during chloral hydrate-induced sedation (study case: single subject analysis between two siblings) <i>Alvin Sahroni</i>	455
Carotid Artery Plaque Image Recognition Using Gabor Wavelet and Principle Component Analysis <i>Mas Afandi, Hendra Kusuma, Tri Arief Sardjono</i>	461
Segmentation of the Intracerebral Hemorrhagic Strokes (Bleeds) from Brain CT Image Based on GVF Snake <i>Muhamad Rudiansyah, Tri Sardjono, Ronny Mardiyanto</i>	465
Microelectronics & VLSI	
Design and Validation of Asynchronous Inter FPGA Transceivers for Inter Processor Communication <i>Faizal Samman, Thagiat Andi Djiwa Putra, Fandhi Nugraha</i>	471
Instrumentation	
Magnetic Tracker Calibration Using Polynomial Fitting <i>Joko Priambodo, Eko Mulyanto Yuniarno, Ketut Purnama</i>	477
Design and Data Acquisition of Faraday Rotation Instrumentation System Based on Microcontroller <i>Muhammad Rizki Nurriansyah, Arief Sudarmaji, Djati Handoko, Luthfi Hadsyah, Arnold Fedriko</i>	481