

2017 International Electronics Symposium on Engineering Technology and Applications (IES-ETA 2017)

**Surabaya, Indonesia
26-27 September 2017**



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**2017 International Electronics Symposium
 on Engineering Technology and Applications (IES-ETA)**
 Date : September 26th, 2017
 Venue : Politeknik Elektronika Negeri Surabaya (PENS), Indonesia

Time	Tuesday, September 26 th , 2017				
08.00-09.00	Registration				
08.30-09.00	Opening Ceremony				
09.00-10.00	Keynote Speech 1 Tadashi Okoshi, Ph.D. (Keio University, Japan)				
10.00-10.30	Coffee Break				
10.30-12.30	Panel Discussion Dadet Pramadihanto, Ph.D, Politeknik Elektronika Negeri Surabaya, Indonesia Dr. Era Purwanto, Politeknik Elektronika Negeri Surabaya, Indonesia Arthur Siahaan, Cisco Systems Indonesia Iwan Agung Firstantara, PJB Indonesia Dr. Hammam Riza, Deputy TIEM National Agency for the Assessment and Application Technologies (BPPT)				
12.30-14.00	Poster Session, Lunch & Exhibition				
	Parallel Session				
	Room PS-03.11: Topic H1	Room PS-03.13: Topic I1	Room PS-03.15: Topic J1	Room PS-03.17: Topic K1	Room PS-04.08: Topic G1
	Oral Presentation (5 Papers)	Oral Presentation (5 Papers)	Oral Presentation (5 Papers)	Oral Presentation (5 Papers)	Oral Presentation (5 Papers)
15.30-16.00	Coffee Break				
	Room PS-03.11: Topic H2	Room PS-03.13: Topic I2	Room PS-03.15: Topic J2	Room PS-03.17: Topic K2	Room PS-04.08: Topic G2
16.00-16.20	Oral Presentation (5 Papers)	Oral Presentation (5 Papers)	Oral Presentation (5 Papers)	Oral Presentation (5 Papers)	Oral Presentation (4 Papers)
16.20-16.40					
16.40-17.00					
17.00-17.20					
17.20-17.40					
17.40-18.30	Preparation of Welcome Dinner				
18.30-21.00	Welcome Dinner				

Session : Parallel Session 01
Location : PS-03.11
Moderator : Dr. Novie Ayub Windarko
Date : Tuesday, September 26th, 2017
Track : Power Engineering and Energy Technology
Topic : H1

Time	ID Paper	Title	Author(s)	Page:
14.00-14.20	1570391239	A Modified MPPT Algorithm Using Incremental Conductance for Constant Power Generation of Photovoltaic Systems	Eka Prasetyono; Dimas Okky Anggriawan; Novie Ayub Windarko; Ahmad Firmansyah (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	1
14.20-14.40	1570380672	Modeling and Simulation of MPPT Coupled Inductor Sepic Converter using Flower Pollination Algorithm (FPA) Method in DC Microgrid System	Farid Dwi Murdianto; Ainur Rofiq Nansur; Alfis Syah Laili Hermawan (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	7
14.40-15.00	1570391962	Modeling of Boiler Follow Control with IMC Tuning Method in Coal-Fired Power Plant	Hendrik Prasetya; Tri Satriyo; Prima Dewi Permatasari (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	14
15.00-15.20	1570391757	Investigation on Combustion Characteristics of Non-premixed Combustion in an 85 MWe Wall Firing Boiler under Various Air-Fuel Ratio using CFD	Teguh Hady Ariwibowo; Arrad Ghani Safitra; Heri Santoso (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	20
15.20-15.40	1570380806	Modeling and Simulation of MPPT Sepic Converter Using Modified PSO to Overcome Partial Shading Impact on DC Microgrid System	Moh. Zaenal Efendi; Farid Dwi Murdianto; Rangga Eka Setiawan (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	27

Session : Parallel Session 02
Location : PS-03.13
Moderator : Dr. Agus Indra Gunawan
Date : Tuesday, September 26th, 2017
Track : Power Engineering and Energy Technology
Topic : I1

Time	ID Paper	Title	Author(s)	Page:
14.00-14.20	1570391095	Forecasting of Power Output of 2-Axis Solar Tracked PV Systems using Ensemble Neural Network	Catur Hilman (Institut Teknologi Sepuluh Nopember, Indonesia); Erik Tridianto; Teguh Hady Ariwibowo; Budiman Putra Asma'ur Rohman (Politeknik Elektronika Negeri Surabaya, Indonesia)	152
14.20-14.40	1570376486	A Flyback Inverter Without Input Electrolytic Capacitor	Taufik Taufik (California Polytechnic State University, San Luis Obispo, USA); Anang Tjahjono (Institut Teknologi Sepuluh Nopember Surabaya & Politeknik Elektronika Negeri Surabaya, Indonesia)	157
14.40-15.00	1570384207	Design and Simulation of Sensorless Brushless DC Motor Drive Using Flux Linkage Increment Based on the Line-to-Line Back EMF for Electric Vehicles	Arman Jaya; Endro Wahjono; Muhammad Rusli; Purwanto Era; Farid Dwi Murdianto; Melinda Fauziah (Politeknik Elektronika Negeri Surabaya, Indonesia)	161
15.00-15.20	1570380999	Dynamic characteristics and experimental research of locomotive wheelset	Tao Li; Hanyang Wu; Dong Zhu; Zhichao Meng; Xiaoqi Huang; Junzhou Huo (Dalian University of Technology, P.R. China)	167
15.20-15.40	1570392016	PLC-Based Control System for Lube Oil System and Gland Steam Condenser System on Steam Turbine	Agus Indra Gunawan; Putu Eka Surya Sanjaya; Bambang Sumantri; Chandra Wiryono; Arif Hendrawan (Politeknik Elektronika Negeri Surabaya, Indonesia)	171

Session : Parallel Session 03
Location : PS-03.15
Moderator : Dr. Dadet Pramadihanto
Date : Tuesday, September 26th, 2017
Track : Robotics Technology and Control Systems
Topic : J1

Time	ID Paper	Title	Author(s)	Page:
14.00-14.20	1570391985	Stability Optimization on Quadrupe Robot using Trajectory Algorithm	Ali Husein Alasiry; Ernanda Jumantoro; Hendhi Hermawan (Politeknik Elektronika Negeri Surabaya, Indonesia)	93
14.20-14.40	1570392025	Robust Control for Electronic Stability Program (ESP) on Four Wheel Vehicle Prototype	Galuh Wibowo; Dimas Amirulloh; Nofria Hanafi; Raden Sanggar Dewanto (Politeknik Elektronika Negeri Surabaya, Indonesia)	99
14.40-15.00	1570391871	Total Kinematic on Humanoid "FLow" Teen -Size	Luky Yanto; Raden Sanggar Dewanto; Dadet Pramadihanto; Eko Henfri Binugroho (Politeknik Elektronika Negeri Surabaya, Indonesia)	106
15.00-15.20	1570391867	Design and Stress Analysis on Electric Standing Wheelchair	Renaldo Putra; Ahmad Rahman; Endah Suryawati Ningrum; Didik Purnomo (Politeknik Elektronika Negeri Surabaya, Indonesia)	112
15.20-15.40	1570392027	Design, Stress Analysis and Determination of Center of Gravity on Stair Climber Wheelchair	Heru Antono; Lutfi Maula Robbi; Endah Suryawati Ningrum; Didik Purnomo (Politeknik Elektronika Negeri Surabaya, Indonesia)	118

Session : Parallel Session 04
Location : PS-03.17
Moderator : Dr. Prima Kristalina
Date : Tuesday, September 26th, 2017
Track : Telecommunication Engineering Technology
Topic : K1

Time	ID Paper	Title	Author(s)	Page:
14.00-14.20	1570391862	Implementation of IoT-based Passengers Monitoring for Smart School Application	Andri Yoga Nur Pratama; Ahmad Zainudin; Mike Yuliana (Politeknik Elektronika Negeri Surabaya, Indonesia)	33
14.20-14.40	1570391639	Prototype of Early Fire Detection System for Home Monitoring Based On Wireless Sensor Network	Ferry Astika Saputra; M. Udin Harun Al Rasyid; Bey Aryo Abiantoro (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	39
14.40-15.00	1570391516	Prototype Of Monitoring System For The Use of PDAM Water Debit Based on Wireless Sensor Network	Dimas Ashari; Ali Husein Alasiry; Firman Arifin; Hendhi Hermawan (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	45
15.00-15.20	1570391648	Secure Data Transmission Scheme for Indoor Mobile Cooperative Localization System	Rafina Destiarti Ainul (Politeknik Elektronika Negeri Surabaya; Institut Teknologi Telkom Purwokerto); Prima Kristalina; Amang Sudarsono (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	50
15.20-15.40	1570380908	Asymmetric Cryptography for Synchronization on MIMO-OFDM System	Nihayatus Sa'adah; I Gede Puja Astawa; Amang Sudarsono (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia)	57

Session : Parallel Session 05
Location : PS-04.08
Moderator : Dr. Tri Budi Santoso
Date : Tuesday, September 26th, 2017
Track : Electronics Systems and Electrics Technology
Topic : G1

Time	ID Paper	Title	Author(s)	Page:
16.00-16.20	1570391886	Active Fault Tolerant Control For Missing Measurement Problem In A Quarter Car Model With Linear Matrix Inequality Approach	Novendra Setyawan; Nur Mardiyah (University of Muhammadiyah Malang, Indonesia); Mas Nurul Achmadiyah Rusdhianto Efendi Abdul Kadir; Achmad Jazidie (Institut Teknologi Sepuluh Nopember, Indonesia)	207
16.20-16.40	1570396188	Characterizing Acoustic Impedance of Several Saline Solution Utilizing Range Finder Acoustic Sensor	Agus Indra Gunawan; Bima Sena Bayu Dewantara; Tri Budi Santoso; Ihwan Wicaksono; Edo Prastika ; Chandra Edy Prianto (Politenik Elektronika Negeri Surabaya, Indonesia)	212
16.40-17.00	1570385112	Hybrid Flexible Circuit on Cotton Fabric for Wearable Electrocardiogram Monitoring	Muhammad Anis Safwan Ahmad (Universiti Teknologi Malaysia, Malaysia); Dedy HB Wicaksono (Swiss German University, Indonesia); Fauzan Harun (Universiti Teknologi Malaysia, Malaysia)	217
17.00-17.20	1570395358	Neural Network Classification of Supraspinatus Muscle Electromyography Feature Signal	Ni'am Tamami; Paulus Wardana; Rika Rokhana; Hendhi Hermawan (Politeknik Elektronika Negeri Surabaya, Indonesia)	223
17.20-17.40	1570385546	Processing of Respiration Signals Using FIR Filter for Analyze the Condition of Lung	Kemalasari, Paulus S Wardana (Politeknik Elektronika Negeri Surabaya, Indonesia)	229

Session : Parallel Session 01
Location : PS-03.11
Moderator : Dr. Anang Tjahjono
Date : Tuesday, September 26th, 2017
Track : Power Engineering and Energy Technology
Topic : H2

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16.00-16.20	1570381605	Design of PID-Fuzzy for Speed Control of Brushless DC Motor in Dynamic Electric Vehicle to Improve Steady-State Performance	Arman Jaya; Purwanto Era; Melinda Fauziah; Gigih Prabowo; Farid Dwi Murdianto; Muhammad Rusli (Politeknik Elektronika Negeri Surabaya, Indonesia)	179
16.20-16.40	1570391832	Cascaded PID Temperature Controller for FOPDT Model of Shell-and-Tube Heat Exchanger Based on Matlab/Simulink	Teguh Hady Ariwibowo; Erik Tridianto; Singgih Almasa; Hendrik Prasetya (Politeknik Elektronika Negeri Surabaya, Indonesia)	185
16.40-17.00	1570395293	Overcurrent Relay Unconventional Curve Modeling in the Power Systems Application Using Adaptive Neuro Fuzzy Inference System	Fikri Fahrissi; Dimas Okky Anggriawan; Anang Tjahjono Institut Teknologi Sepuluh Nopember Surabaya); Indhana Sudiharto; Suryono Suryono (Politeknik Elektronika Negeri Surabaya, Indonesia)	192
17.00-17.20	1570395294	Identification of Harmonic Loads Using Fast Fourier Transform and Radial Basis Function Neural Network	Abdul Fattah Mubarak; Trulli Octavira; Dimas Okky Anggriawan; Indhana Sudiharto; Endro Wahjono (Politeknik Elektronika Negeri Surabaya, Indonesia)	198
17.20-17.40	1570384664	Experimental Study of Double Pipe Heat Exchanger Performance Equipped with Perforated Twisted Tape Considering Various Twist Ratio	Teguh Hady Ariwibowo; Prima Dewi Permatasari; Ardika Kurniawan (Electronic Engineering Polytechnic Institute of Surabaya, Indonesia)	203

Session : Parallel Session 02
Location : PS-03.13
Moderator : Dr. Bima Sena Dewantara
Date : Tuesday, September 26th, 2017
Track : Robotic Technology and Control Systems
Topic : I2

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16.20-16.40	1570391903	Chat Bots based Externalization of Tacit Knowledge in a Knowledge Management System	Narendra Up (Mangalore Institute of Technology and Engineering, India)	N/A
16.40-17.00	1570389831	Multi Process Matching Depth Image Between Stereo Camera and Structure Sensor in Realtime	Rimsya Anjarlistiawan; Ardiansyah Al Farouq; Sri trusta Sukaridhoto; Raden Sanggar Dewanto; Dadet Pramadihanto (Politeknik Elektronika Negeri Surabaya, Indonesia)	134
17.00-17.20	1570390121	Deep Multilayer Network for Automatic Targeting System of Gun Turret	Muhamad Khoirul Anwar; Anhar Risnumawan; Adytia Darmawan (Politeknik Elektronika Negeri Surabaya, Indonesia); Mohamad Tamara (Institute Technology of Sepuluh Nopember, Indonesia); Didik Purnomo (Politeknik Elektronika Negeri Surabaya, Indonesia)	140
17.20-17.40	1570384645	The Deep learning Development for Real-Time Ball and Goal Detection of Barelang-FC	Susanto Susanto; Eko Rudiawan Jamzuri; Riska Analia; Daniel Pamungkas; Hendawan Soebhakti (Politeknik Negeri Batam, Indonesia)	146

Session : Parallel Session 03
Location : PS-03.15
Moderator : Dr. Son Kuswadi
Date : Tuesday, September 26th, 2017
Track : Robotics Technology and Control Systems
Topic : J2

Time	ID Paper	Title	Author(s)
16.00-16.20	1570396022	Board PSoC Library Design for Mobile Robot Implementation	Hasan Almahzumy; Fernando Ardilla; Bayu Marta (Politeknik Elektronika Negeri Surabaya, Indonesia)
16.20-16.40	1570396134	Build Library on Naisduino B Board for Implementation on Mobile Robot	M. Lukman Baidhowi; Fernando Ardilla; Mochamad Mobed Bachtiar (Politeknik Elektronika Negeri Surabaya, Indonesia)
16.40-17.00	1570395788	Multi-Locomotion Robot Function Analysis Based on Adaptive Morphology Methodology	Son Kuswadi (Politeknik Elektronika Negeri Surabaya, Indonesia); Mohamad Tamara (Institute Technology of Sepuluh Nopember, Indonesia); Dzikri Sahanas; Mohammad Nuh (Politeknik Elektronika Negeri Surabaya, Indonesia)
17.00-17.20	1570391864	Path Planning for Mobile Robot Soccer using Genetic Algorithm	Rizki Taufik Ulil; Iwan Kurnianto Wibowo; Dwi Kurnia Basuki (Politeknik Elektronika Negeri Surabaya, Indonesia)
17.20-17.40	1570392008	Routing Algorithm In Legged Robot with Dynamic Programming and Monte Carlo Localization	Ali Husein Alasiry; Ni'am Tamami; Muchammad Chanif Qomaruddin (Politeknik Elektronika Negeri Surabaya, Indonesia)

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Session : Parallel Session 04
Location : PS-03.17
Moderator : Dr. I Gede Puja Astawa
Date : Tuesday, September 26th, 2017
Track : Telecommunication Engineering Technology
Topic : K2

Time	ID Paper	Title	Author(s)	Page:
16.00-16.20	1570391905	Design Investigation of Microstrip Antenna using Loading Circuit (LC) Method for Amateur Satellite Communication UHF Band	Akuwan Saleh; Budi Aswoyo (Politenik Elektronika Negeri Surabaya, Indonesia)	63
16.20-16.40	1570390402	MIMO-OFDM 2x2 Based On Single RF Using LDPC Code and Kalman Filter Detection	Indira Bestari; I Gede Puja Astawa; Arifin (Politenik Elektronika Negeri Surabaya, Indonesia)	69
16.40-17.00	1570377568	Performance Analysis of BPSK System in the Underwater Acoustic Channel with Additive Laplacian Noise	Tri Budi Santoso; Miftahul Huda (Politenik Elektronika Negeri Surabaya, Indonesia)	75
17.00-17.20	1570384928	Simple and energy efficient discrete cosine transform based image compression for simple pulse-based Modulation	Muhammad Agus Zainuddin and Sritrusta Sukaridhoto (Politeknik Elektronika Negeri Surabaya, Indonesia)	81
17.20-17.40	1570390470	Truncated Microstrip Square Patch Array Antenna 2 x 2 Elements with Circular Polarization for S-Band Microwave Frequency	Zainal Muludi; Budi Aswoyo (Politeknik Elektronika Negeri Surabaya, Indonesia)	87

Session : Parallel Session 05
Location : PS-04.08
Moderator : Dr. Prima Kristalina
Date : Tuesday, September 26th, 2017
Track : Electronics Systems and Electrics Technology
Topic : G2

Time	ID Paper	Title	Author(s)
16.00-16.20	1570391963	Digital Signature On File Using Biometric Fingerprint With Fingerprint Sensor On Smartphone	Erika Rahmawati; Mariska Listyasari; Adam Shidqul Aziz; Sri trusta Sukaridhoto; Fardani Damastuti; Mochamad Mobed Bachtiar; Amang Sudarsono (Politenik Elektronika Negeri Surabaya, Indonesia)
16.20-16.40	1570391254	An Improved Fingerprint Method Based on K-NN Algorithm for Indoor Multiple Object Tracking	Asti Putri Rahmadini; Prima Kristalina; Amang Sudarsono (Politenik Elektronika Negeri Surabaya, Indonesia)
16.40-17.00	1570391884	Performance of QoS Parameters for UHF TV Broadcast on Batu TV	Naning Dwi yanti; Anggraeni Martianda; Citra Murdaningtyas (Politenik Elektronika Negeri Surabaya, Indonesia)
17.00-17.20	1570391977	Timing Manipulation on Ladder Diagram To Adjust the Flexibility and Speed of the Beat On the Robot Gambang	Imam Syafaat; Iftahatus Shofwan; Indra Adji Sulistijono; Endah Suryawati Ningrum (Politeknik Elektronika Negeri Surabaya, Indonesia)

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**2017 International Electronics Symposium
on Engineering Technology and Applications (IES-ETA)**
Date : September 27th, 2017
Venue : Politeknik Elektronika Negeri Surabaya (PENS), Indonesia

Time	Wednesday, September 27 th , 2017		
08.00-08.30	Registration		
08.30-09.10	Keynote Speech 2 Dr. Wang Huaqian (Singapore Polytechnic, Singapore)		
09.10-09.50	Keynote Speech 3 Dr. Chihiro Ikuta (Anan National College of Technology, Japan)		
10.15-10.30	Coffee Break		
10.30-12.00	Workshop on Facing the Indonesia Smart E- Government	Workshop on Digital Broadcasting	Workshop on Global Environmental Systems Leader (GESL)
12.00-13.30	Poster Session, Lunch & Exhibition		
13.30-15.00	Workshop on Facing the Indonesia Smart E-Government	Workshop on Engineering Service Learning (ESL)	Workshop on Global Environmental Systems Leader (GESL)
15.00-15.30	Coffee Break		
15.30-16.30	Closing Ceremony		
	Free Time		
18.30-21.00	Farewell Dinner		