# **2010 International Conference on Control Automation and Systems**

(ICCAS 2010)

Gyeonggi-do, South Korea 27-30 October 2010

Pages 3/: 6:



**IEEE Catalog Number: ISBN:** 

CFP1010D-PRT 978-1-4244-7453-0

#### **Table of Contents**

#### **TA01: Identification and Estimatation I**

TA01-1	Modeling of a radio-controlled car with camera based on system identification; comparison between open-loop and closed loop methods	1
	Koichi Hidaka and Hiroshi Kusano	
TA01-2	Identification of Three-Parameter Models in the Presence of Non-zero Initial Condition	5
17.01 2	Mohammed Sowket Ali, Jun-Sung Lee and Young-II Lee	J
TA01-3	Observer Based Tip Tracking Control of Two-Link Flexible Manipulator	9
.,	Masoud Mosayebi, Mostafa Ghayour and Mostafa Shariati Nia	Ŭ
TA01-4	Identification of Abnormal Driving State Based on Driver's Model	14
.,	Weicun Zhang	
TA01-5	Model Based Control to Enhance a Novel Two Dimensional Positioning System	19
	chan yet wong, Carlos Montes, Laine Mears and John Ziegert	
TA02	: Manufacturing Systems and Automation I	
TA02-1	On A Safety Validation of Sequential Control System Based on Grobner Bases Computation	23
	Saifulza Alwi and Fujimoto Yasutaka	
TA02-2	Development of Magnetic Force Modeling Equipment for Magnetic Levitation System	29
	Ji-Hyuk Yang, Young-Sam Lee and Ok-Kyu Kwon	
TA02-3	Slide-bending Formation of Metallic Sheet Using Neural Network	34
	Masaki Hanazono	
TA02-4	Lyapunov-based Microstepping Control of Sawyer Motors with PID Control	38
	WONHEE KIM, DONGHOON SHIN, Dong Gyu Gang and Chung Choo Chung	
TA02-5	Application of Automation for Low Cost Aircraft Cabin Simulator	44
	CheeFai Tan, Wei Chen, Geert van de Boomen and Matthias Rauterberg	
TA02-6	Control of a Nonlinear Magnetic Levitation System by using Constraint Generalized Model Predictive  Control	48
	Hossein reza karampoorian and reza mohseni	
<b>TA03</b>	: Mobile Robots and Navigation I	
TA03-1	Error Pose Correction of Mobile Robot for SLAM Problem using Laser Range Finder based on Particle Filter	52
	Angga Rusdinar, Jungmin Kim and Sungshin Kim	
TA03-2	Dynamic mission-level path planning for lunar rovers	56
	Yuan Xie, Jianliang Zhou and Yong Wang	
TA03-3	Navigation Strategy for a Quadruped Robot on Soft Flat Ground	62
	Masaaki Ikeda, Kiyotaka Izumi and Keigo Watanabe	
TA03-4	A Motion Planning Algorithm for a Nonholonomic Vehicle Using Vector Potential Functions in Triangular Regions	66
	Anugrah Pamosoaji, Keum-Shik Hong and Augie Widyotriatmo	
TA03-5	Stereo vision based 3d modeling system for mobile robot	71
	Jian-Hong Sun, Byung-Seung Jeon, Jong-Wook Lim and Myotaeg Lim	
TA03-6	Configuration Control of a Forklift Vehicle using Vision System with Limited Angle of View	76
	Augie Widyotriatmo, Gi-Yong Hong and Keum-Shik Hong	

## **TA04**: [OS] Fire Fighting Robot

TA04-1	A Study on the climbing strategy over vertical steps for the QuadTrack-III	82
TA04-2	Kyungmin Jeong  Adaptive Driving Mode Control of Mobile Platform with Wheel-Track Hybrid Type for Rough Terrain in the Civil Environment	86
	Yoon-Gu Kim, Jeong-Hwan Kwak, Jinwook Kim, Jinung An and Ki-Dong Lee	
TA04-3	Enhanced localization for team robot navigation using compass sensor and USN	91
	Yoon-Gu Kim, KyoungDong Kim, Jinung An, Zhi-Guang Xu and Suk-Gyu Lee	
TA04-4	Novel Fire Detection Device for Robotic Fire Fighting	96
TA04-5	Jung-Hoon Hwang, Sewoong Jun, Donghoon Cha, Kaehoon Jeon, Seung-Hun Kim and Jongbae Lee Simulation Based for Intelligent Control System of Multi – Humanoid Robots for Dynamic Load Carrying	101
	Han Guen Kim, Jin Ung An, Jeon II Moon and Dong Han Kim	
TA05	Sensors and Instrumentation I	
TA05-1	Tumor Size Measurement and Feature Point Extraction Using an Endoscope	105
	Jong-wook Lim, Dong-gi Woo, Hoon-Jai Chun, Bora Keum, Jong-Jin Hyun, Young-Joonhg Kim and Myo-Taeg Lim	
TA05-2	Electric-field resonance coupling between human and transmitter for human position estimation system	109
	Sousuke Nakamura, Shimon Ajisaka, Hideki Hashimoto, Kiyoaki Takiguchi and Akira Hirose	
TA05-3	Identification Scheme for the Affine Sensor Model	115
	Dong Hoon Kang, Jong-Phil Kim, Jinwook Kim and Heedong Ko	
TA05-4	Human Body Position Estimation System using Electric Field	119
	Shimon Ajisaka, Sousuke Nakamura, Hideki Hashimoto, Kiyoaki Takiguchi and Akira Hirose	
TA05-5	Design a Low Price and High Performance Sensor Network Using of Constrained-based Unscented Kalman Filter	124
	Ebrahim Moradi Shahrivar, Karim Salahshoor and Mehdi Rezagholizadeh	
TA05-6	Seismic Event Trigger using Fuzzy Inference Systems	130
	Jittiwut Suwatthikul and Songkrod Thirachai	
TA06	Biorobotics and Medical Robots	
TA06-1	Multi-Jointed Integrated Medical Instrument System for Single Port Access Laparoscopic Surgery	134
	Hyunhwan Jeong, Joono Cheogn and Sunil Lee	
TA06-2	Load Carriage Effects on a Robotic Transtibial Prosthesis	139
	Joseph Hitt and Thomas Sugar	
TA06-3	Design and Control of Actively Combined Carrier System for the Elderly	143
	Dong Hwan Kim, Young Jin Kim, Cheol Woong Ko, Soo Taek Kim, Eun Im and Keyoung Jin Chun	
TA06-4	Optimal Port Placement could Improve the Ergonomic Design of Laparoscope Manipulating	147
	Kovit Khampitak	
TA06-5	Development of Knee Joint Robot for Students Becoming Therapist - Design of Prototype and Fundamental Experiments -	151
	Yoshifumi Morita, Hiroyuki Ukai, Yuki Kawai, Yusuke Hayashi, Tatsuya Hirano, Kouji Sanaka, Hironori Nakamuta and Keiko Takao	
TA06-6	Eliminating Undesired Mass/Inertia Effects for Improved Transparency in a Haptic Mechanism using Artificial Neural Networks	156
	Mohammad Khodabakhsh, Mehrdad Boroushaki and Golamreza Vossoughi	

#### **TA07: Artificial Neural Networks**

TA07-1	Probabilistic Modeling to Inverse Halfoning based on Super Resolution	162
TA07-2	Yohei Saika, Ken Okamoto and Fumiya Matsubara  Adaptive Local Model Networks with Higher Degree Polynomials	168
TA07-3	Oliver Baenfer, Marlon Franke and Oliver Nelles  Chip Form Classification and Main Cutting Force Prediction of Cast Nylon in Turning Operation Using  Artificial Neural Network  Pandit Sukcount	172
TA07-4	Bandit Suksawat  A Reinforcement Learning System Embedded Agent with Neural Network-Based Multi-Valued Pattern  Memory Structure	176
TA07-5	Masanao Obayashi, Tomohiro Nishida, Takashi Kuremoto, Kunikazu Kobayashi and Liangbing Feng Weight Decision Algorithm for Oversampling Technique on Class-Imbalanced Learning kang youngil	182
TA08	: [OS] Control and Sensing Application	
TA08-1	Estimation for a Hand Position and Orientation Robust to Motion of Fingers Using a Web Camera Yoshiaki Mizuchi, Hideki Kawai, Yoshinobu Hagiwara, Hiroki Imamura and Yongwoon Choi	187
TA08-2	A Hetero-Core Optical Fiber Dendrometer for measurement of a Tree growing condition	191
TA08-3	Hoshito Uchida, Shohei Akita, Norikazu Kumekawa and Kazuhiro Watanabe	195
1400-3	Modeling and Control Allocation for Ship Berthing System Design  bui Van Phuoc, Young Bok Kim, Kwon Soon Lee, Jeong Soon Jeong and Dong Seok Lee	195
TA08-4	Distance Measurement System Based on Image Sensors for Automatic Berthing of Ships	201
	Hideki Kawai, Junpei Sakamoto, Yong Bok Kim and Yongwoon Choi	
TA08-5	Respiration rhythm monitoring in sleep based on weight movement using hetero-core fiber optic sensors	205
	Michiko Nishiyama, Mitsuo Miyamoto and Kazuhiro Watanabe	
TA09	: [OS] Model Predictive Control	
TA09-1	T-S Fuzzy Synchronization of Chaotic Systems via Receding Horizon Control	209
	Choon Ki Ahn, Chul Dong Lee and Moon Kyou Song	
TA09-2	Model Predictive Control of an UPS using periodic invariance	214
	Young il Lee, Jae Sik Lim and Junsung Lee	
TA09-3	Recent Advances in Adaptive MPC	218
TA09-4	Jung-Su Kim	223
1703-4	H∞ Finite Memory Controls for Linear Discrete-Time Systems	
TA09-5	Soohee Han and Hyoun-chul Choi	
	Soohee Han and Hyoun-chul Choi  Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant	
	·	
	Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant	
TP01	Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant using Hysys and Matlab Simulation Packages	
<b>TP01</b> :	Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant using Hysys and Matlab Simulation Packages  Reza Sobhani Ahmadgurabi, Mohammad Ali Nekoui and Karim Salahshoor  Identification and Estimatation II  closed loop modelling method for non-linear system using laguerre polynomials	
TP01-1	Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant using Hysys and Matlab Simulation Packages  Reza Sobhani Ahmadgurabi, Mohammad Ali Nekoui and Karim Salahshoor  Identification and Estimatation II  closed loop modelling method for non-linear system using laguerre polynomials yusuke hirama and hiroto hamane	227
	Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant using Hysys and Matlab Simulation Packages Reza Sobhani Ahmadgurabi, Mohammad Ali Nekoui and Karim Salahshoor  Identification and Estimatation II  closed loop modelling method for non-linear system using laguerre polynomials yusuke hirama and hiroto hamane On Equilibrium Probabilities in a class of Two Station Closed Queueing Networks	227
TP01-1 TP01-2	Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant using Hysys and Matlab Simulation Packages Reza Sobhani Ahmadgurabi, Mohammad Ali Nekoui and Karim Salahshoor  Identification and Estimatation II  closed loop modelling method for non-linear system using laguerre polynomials yusuke hirama and hiroto hamane On Equilibrium Probabilities in a class of Two Station Closed Queueing Networks Woo-Sung Kim and James Morrison	227 231 237
TP01-1	Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant using Hysys and Matlab Simulation Packages Reza Sobhani Ahmadgurabi, Mohammad Ali Nekoui and Karim Salahshoor  Identification and Estimatation II  closed loop modelling method for non-linear system using laguerre polynomials yusuke hirama and hiroto hamane On Equilibrium Probabilities in a class of Two Station Closed Queueing Networks	227 231 237

TP01-4	Fault Diagnosis based on Grey-Box Neural Network Identification Model	249
	Cen zhaohui, wei jiaolong and Jiang rui	
TP01-5	Error Analysis on Distribution-based Frequency Estimator	255
	Asami Ishizaka, Masuhiro Nitta and Kiyotaka Kato	
TP01-6	Modelling Hysteresis Characteristics using the Generalised Prandtl-Ishlinskii Operator	261
	Richard Jones	
TP02	: Manufacturing Systems and Automation II	
TP02-1	A Data Frame Format for Interchanging Glass Information between TFT-LCD Production Devices Using XML	267
	Byunghyun Hwang, Kiejin Park and Eunsung Lim	
TP02-2	A Development of Hybrid Temperature Recorder Monitoring System	271
	Olarn Wongwirat, Keelati Oonchom and Benjaporn Arnuttinanon	
TP02-3	Implementation test model of torque control for Automatic Guided Vehicle	276
	Tatsuya Ikawa, Kenji Sawada and Seiichi Shin	
TP02-4	Gas Metal Arc Welding Process Control Based on Arc Length and Arc Voltage	280
	Mohammad Haeri, Mohammad Mousavi and Ali Reza Doodman Tipi	
TP02-5	Designing of a Static Frequency Observer for GMAW Process in the Globular Transfer Mode	286
	Mohammad Haeri, Mohsen Khalili and Ali Reza Doodman Tipi	
TP03	: Mobile Robots and Navigation II	
TP03-1	Mechanism Design and Autonomous Movement and Jump Control for a Jumping Robot	290
	Dong Hwan Kim, Dong-Su Kim and Choong Hyuk Yim	
TP03-2	Probability Map Partitioning for Multi-player Pursuit-Evasion Game	294
	DONGJUN KWAK and H. Jin Kim	
TP03-3	A Practical Coverage Algorithm for Intelligent Robots with Deadline Situations	299
	Jung Kyu Park, Heung Seok Jeon, Sam H. Noh, Jung Hwan Park and Ryumduck Oh	
TP03-4	A Position Tracking Experiment of Mobile Robot with Inertial Measurement Unit (IMU)	304
	Chutchai Chaiyarat and Olarn Wongwirat	
TP03-5	Development of autonomous navigation method for nonholonomic mobile robots based on the	309
	generalized Voronoi diagram	
TD00.0	MINGLEI SHAO and Ji-yeong Lee	04.4
TP03-6	Optimal Trajectory Planning of a Mobile Robot with Spatial Manipulator for Obstacle Avoidance	314
	Mostafa Shariati Nia, Mostafa Ghayour and Masoud Mosayebi	
	: [OS] Instrumentation and Control Applications for Steel- ng Industry	
TP04-1	Detection of Scratch Defects for Wire Rod in Steelmaking Process	319
	Jing Zhang, Dongyeop Kang and Sangchul Won	
TP04-2	Text Localization using Valid Optical flow for Recognition of Slab Numbers	324
	SeungBo Shim, SungHoo Choi and SangWoo Kim	
TP04-3	Measuring Thickness of the Copper Stave in Blast Furnace Using Ultrasonic Technique in Cooling Line	330
	Sang-Woo Choi, Jung-Luel Yoo, Tae-Hwa Choi and Kwan-Tae Kim	
TP04-4	development of measurement technology of phase transformation ratio on steel plates using laser- ultrasound	334
	Choong-Soo Lim, Hyun Chul Park, Myoung-Koo Kang and Hyeong-Jun Huh	

TP04-5	Feature Selection for Steel Defects Classification	338
	Daun Jeong, Dongyeop Kang and Sangchul Won	
TP04-6	Vertical Scratch Detection Algorithm for High-speed Scale-covered Steel BIC(Bar in Coil)	342
	Jong Pil Yun, Changhyun Park, Homoon Bae, Hwawon Hwang and Seho Choi	
TP05	Sensors and Instrumentation II	
TP05-1	Subsidence Monitoring System for Industrial Machines based on Magnetic Field Method	346
11-03-1	Witsarut Sriratana, Kreangkrai Nakmee and Lerdlekha Tanachaikhan	340
TP05-2	Walking on the Slopes with Tactile Sensing System for Humanoid Robot	350
11 05-2	Kitti Suwanratchatamanee, Mitsuharu Matsumoto and Shuji Hashimoto	550
TP05-3	A Prototype Measuring Set for Capturing Dissipated Force on Soft Armor	356
11 00 0	Chatchai Suppitaksakul, Nara Chalermklin, Somprasong Parsapratet and Somnuk Sungnu	000
TP05-4	Modeling and Design of a Gripper for a Robotic Surgical System Integrating Force Sensing Capabilities	361
11 00 4	in 4 DOF	001
	Mathieu Stephan, Giulio Rognini, Ali Sengul, Ricardo Beira, Laura Santos-Carreras and Hannes Bleuler	
TP05-5	A Novel CulnS2/Polyaniline Base Heterojunction Solar Cell	366
	Iman Morsi, Shaker Ebrahim, Moatez Soliman, Mohamed Elsharkawi and Abdelfatah Elzaem	
TP05-6	A Simple Amplitude Detector-based Demodulator for Resolver Converters	370
	APINAI RERKRATN, Anucha Kaewpoonsuk, Ratchanoo Katman, Vanchai Riewruja and Thawatchai	
	Kamsri	
TP06 :	Service and Field Robots I	
TP06-1	A Componentian Method of the Error in Polletizing Work Coll on the Conversion from an Off Line	374
1700-1	A Compensation Method of the Error in Palletizing Work Cell on the Conversion from an Off-Line Generated Program to a Real Job Program	3/4
	YoungHoon Song, Sung-Rak Kim and Soo-Jong Kim	
TP06-2	A Multi-Robot Task Planning System Minimizing the Total Execution Time for Hospital Service	379
	Yong-Hwi Kim and Byung Kook Kim	
TP06-3	RT Ontology development and human preference learning for assistive robotic service generation	385
	system	
	Trung Ngo and Makoto Mizukawa	
TP06-4	Development of user-friendly intelligent home robot focused on safety and security	389
	Kang Hun Lee and Chang-Jun Seo	
TP06-5	Components and an Effective IDE of Open Software Platform for Robotics Services	393
	Soohee Han, Mi-sook Kim and Hong Seong Park	
TP06-6	Active Information Display without Occlusion using UD-m	399
	Dong Kyun Cho, Jeong Eom Lee, Joo Hyung Kim, Joo Ho Lee and Gwi Tae Park	
TP07	Fuzzy Systems	
TD07.	Alexis Tours Deal For Microscope (ABERNA MATERIAL CO	400
TP07-1	Adaptive T-S type Rough-Fuzzy Inference Systems (ARFIS) for Mobile Robot Navigation	403
TD07.0	Chang Su Lee	400
TP07-2	Propose of Unsealed Deep Groove Ball Bearing Condition Monitoring Using Sound Analysis and Fuzzy Logic	409
	thitipan noreesuwan and Bandit Suksawat	
TP07-3	Propose of Fuzzy Logic-Based Students' Learning Assessment	414
11 07-3	i ropose of razzy Logio-based orduents Learning Assessment	714
	Rungaroon Sripan and Bandit Suksawat	

## **TP08**: [OS] New Actuators and Application

TP08-1	A Nonlinear Control System Using A Fuzzy Self Tuning Grey Predictor based on A PID Controller	418
TP08-2	Duong Van Quang and Kyoung Kwan Ahn  A Generation Step to Develop Steel Rolling Machine Performance Using Electro-Hydraulic Actuator	423
11-00-2	and Modified-Grey Fuzzy PID Controller	423
	Quang Truong Dinh, Kyoung Kwan Ahn and Jong II Yoon	
TP08-3	THE STATIC CHARACTERISTIC OF A VIBRATION ISOLATING SYSTEM WITH A LOW DYNAMIC STIFFNESS CHARACTERISTIC	429
	Thanh Danh Le and Kyoung Kwan Ahn	
TP08-4	Apply Adaptive Fuzzy Sliding Mode Control to SMA Actuator	433
	Nguyen Trong Tai and Kyoung Kwan Ahn	
TP08-5	Estimation of Bending Behavior of an Ionic Polymer Metal Composite Actuator Using a Nonlinear Black- Box Model	438
	Quang Truong Dinh, Kyoung Kwan Ahn, Doan Ngoc Chi Nam and Jong II Yoon	
TP08-6	Precision Control for Ionic Polymer Metal Composite Actuator Based on Quantitative Feedback Theory	443
	Nam Doan Ngoc Chi, Kyoung Kwan Ahn, Truong Dinh Quang and Jong II Yoon	
TP09	: [OS] Recent Advances in Process Control I	
TP09-1	Model Predictive Control based on ARX models	448
<b>TD</b> 00.0	Junichiro Kon and Yoshiyuki Yamashita	450
TP09-2	Dynamic tuning of PI-controllers based on model-free reinforcement learning methods	453
TD00.0	Lena Abbasi Brujeni, Jong Min Lee and Sirish L. Shah	450
TP09-3	Approximate Dynamic Programming Approach for Process Control	459
TD00 4	Jay Lee  Dynamic Study for Oscillatory Temporature in Methodal Partial Oxidation	465
TP09-4	Dynamic Study for Oscillatory Temperature in Methanol Partial Oxidation	400
TP09-5	Jietae Lee, Jin-Su Kim, Jeonguk Byeon and Dong Hyun Kim  Combined Run-to-Run and Delta LQG Control: Controller Design and Application to 12-inch RTP	469
1709-5	Equipment	403
	Wangyun Won, Kwang Soon Lee and Sang Hyun Ji	
TE01	: Adaptive/Robust Control	
TE01-1	Simulation Verification of Virtual Equivalent System Theory for Minimum Variance Self-Tuning Control	475
	Weicun Zhang	
TE01-2	Two-Degree-of-Freedom Simple Servo Adaptive Control for SCARA robot	480
	Taworn Benjanarasuth, Noppon Sowannee and Nirut Naksuk	
TE01-3	Design of PI Controller Using MRAC Techniques For Couple-Tanks Process	485
	Arjin numsomran and Vittaya Tipsuwanporn	
TE01-4	Robust Control Allocation of Redundantly Actuated Variable Structure Systems	491
TE04 5	Sang-ik An and Dong-Soo Kwon	407
TE01-5	Robust Control of a pH Neutralization Process Plant Using QFT	497
TE04.0	Raha Shabani, Ali Khaki Sedigh and Karim Salahshoor	<b>504</b>
TE01-6	Adaptive control for a multi-condenser inverter heat pump system	501
	Quang Hieu Ngo, Qilun Song and Keum-Shik Hong	
TE02	: Manufacturing Systems and Power Systems	
TE02-1	Bitmap Picture to Toolpaths Converter for NC Machine	507
1 = 32 1	Thepjit Cheypoca, Wandee Petchmaneelumka, Sirichai Tammaruckwattana and Vanchai Riewruja	501
	1/ /1	

TE02-2	High Efficiency Postprocessor for Generic NC Machine	511
	Thepjit Cheypoca, Chanon Lekthamrong, Vanchai Riewruja , Chitpol Koomgaew and Virot Wuti	
TE02-3	Development of Excitation Control Process in IMCS	515
	Byunghee Choi	
TE02-4	Selection of Shield Cables to Minimize EMI Transients in Power Plants	519
	JAE KI LEE, YONG GOO CHOI and CHAN-KOOK MOON	
TE02-5	Reactive Power-Voltage Integrated Control Method Based on MCR	523
	Dan Chen, Xiaosheng Huang, Guangsheng Li, Yi Wei, Wenjun Zeng, Cuihua Tian, Huan Shi and Hua Ye	
TE02-6	Phase Control Thyristor Based Soft-starter for a Grid Connected Induction Generator for Wind Turbine System	529
	satean tunyasrirut, Boonreung Wangsilabatra and Tianchai Suksri	
TE03 :	Mobile Robots and Navigation III	
TE03-1	An Intelligent Control System Construction Using High-level Time Petri net and Reinforcement Learning	535
00 .	Liangbing Feng, Masanao Obayashi, Takashi Kuremoto and Kunikazu Kobayashi	
TE03-2	Semi-Autonomous Collaborative Control for Multi-Weapon Multi-Target Pairing	540
	Jae Chung and Yu-Shing Cheung	
TE03-3	Optimally Overlapped Ultrasonic Sensor Ring with Minimal Positional Uncertainty in Obstacle Detection	546
	Sungbok Kim and Hyunbin Kim	
TE03-4	Calibrated Localization with 2-D Laser Range Finder for Indoor Mobile Robots	551
	Jin Baek Kim and Byung Kook Kim	
TE03-5	Collision-Avoidance Algorithm for Human-Symbiotic Robot	557
	Yuji Hosoda, Kenjirou Yamamoto, Ryouko Ichinose, Saku Egawa, Junichi Tamamoto, Kouji Tsubouchi and Shinichi Yuta	
TE03-6	Robust Control of Two Wheels Mobile Robot	562
	NOR MANIHA ABDUL GHANI	
TE04 :	[OS] Assistive and Rehabilitation Robotics	
TE04-1	Investigation of Friction Characteristics of a Tendon Driven Wearable Robotic Hand	568
	HyunKi In, Donsuk Lee and Kyu-Jin Cho	
TE04-2	Design of Electric Lifting Chair to Assist in Standing up and Sitting down for Persons with Disability	574
	Ju-hwan Bae and Inhyuk Moon	
TE04-3	Analysis of the Assistance Characteristics for the Plantarflexion Torque in Elderly Adults Wearing the	576
	Powered Ankle Exoskeleton	
TE04.4	Kyung Kim, Jae-Jun Kim, Seung-Rok Kang, Gu-Young Jeong and Tae-Kyu Kwon	<b>500</b>
TE04-4	Emotion Monitoring from Physiological Signals for Service Robots in the Living Space	580
	Kanlaya Rattanyu, Michiko Ohkura and Makoto Mizukawa	
TE05 :	Fault Diagnosis	
TE05-1	Condition Monitoring of Railway Vehicle Suspension Using Adaptive Multiple Model Approach	584
	HITOSHI TSUNASHIMA and HIROTAKA MORI	
TE05-2	Efficient management method of corrosion under insulation using Group numbering of continuous conditions	590
	MOON SUNG-HYE and Shigeyuki Tateno	
TE05-3	A Simulation Study of Defects in a Rolling Element Bearing using FEA	596
	Yimin Shao	

TE05-4	descriptor approach to unknown input PI observer design application in fault detection  Mohammad Mahdy Share Pasand and Hamid reza Taghirad	600
	Monanimad Mandy Share rasand and Hamid 162a Tagrillad	
TE06	Service and Field Robots II	
TE06-1	Using Autonomous Robots to Enable Self-organizing Broadband Networks	605
	Eric Matson, Cory Nguyen, Benny Leong, Anthony Smith and Juan Wachs	
TE06-2	Landmark Detection of In-pipe Working Robot Using Line Laser Beam Projection	611
TE00.0	Dong-Hyuk Lee, Hyungpil Moon and Hyouk Ryeol Choi	040
TE06-3	Benefit/Cost Analysis of a Robot-based Construction Automation System  Technology King and Hon Kong Log	616
TE06-4	Taehoon Kim and Ung-Kyun Lee	622
100-4	Remote mine sensing technology using a mobile wheeled robot RAT-1  Nobuhiro Shimoi	022
TE06-5	Metric Based Nonblocking Supervisory Control of Discrete Event Systems	627
12000	Jun-Sang Park, Hyun-Wook Jo, Jun-Han Oh and Jong-Tae Lim	021
TE06-6	Cost-based Cooperative Strategy to Search Mobile Evader in Roadmap based Environment	631
12000	Tareq Haque and ChangHwan Kim	001
TE07	[OS] Filtering and Intelligent Control	
TE07-1	Adaptive RLS filtering for the reduction of blind spot in a cable fault locator	637
	Chunku Lee, Ki Seok Kwak, Tae Sung Yoon and Jin Bae Park	
TE07-2	A new linear matrix inequality condition for robust D-stabilizing proportional-derivative state-feedback	641
	controller design of polynomial matrix polytopes	
TE07-3	Dong Hwan Lee, Jin Bae Park and Young Hoon Joo	646
101-3	Policy-Iteration-Based Adaptive Optimal Control for Uncertain Continuous-Time Linear Systems with Excitation Signals	646
	Jae Young Lee, Jin Bae Park and Yoon Ho Choi	
TE07-4	Intelligent controller design for nonlinear interconnected systems	652
	Geun Bum Koo, Jin Bae Park and Young Hoon Joo	
TE07-5	Robust Flight Control System Using Neural Networks	657
	JuWon LEE, JinBae PARK and YoonHo Choi	
TE07-6	A fuzzy filter with missing measurement for observer-based T-S fuzzy models	663
	Sun Young Noh, Jin Bae Park and Young Hoon Joo	
TE08	: [OS] Smart Actuator	
TE 00.4		
TE08-1	Interpolation and Tracking of Rigid Body Orientations	668
TE00.0	Jonghoon Park	074
TE08-2	Development of Smart Actuator for Lightweight Modular Robot	674
TE00.2	Young Jin Lee, Min Gyu Park and Seok-Jo Go	670
TE08-3	Development of an industrial robot manipulator for the easy and safe  Chanhun Park	678
TE08-4	Implementation of IEC61800 based EtherCAT Slave Module for Real-time Multi-axis Smart Driver	682
1 = 00-4	System	502
	Jee Hun Park, Suk Lee, Kyung Chang Lee and Young Jin Lee	

## **TE09**: [OS] Recent Advances in Process Control II

TE09-1	Half Order Approximation for the Adsorption Dynamics in a Particle	686
	Jietae Lee and Dong Hyun Kim	
TE09-2	Multi-model PID controller design: Polynomial chaos approach	690
	Duong Pham and Moonyong Lee	
TE09-3	Performance Assessment of Cascade Control Strategy in Wastewater Treatment Process	696
	Hongbin Liu, MinJung Kim, JungJin Lim and ChangKyoo Yoo	
TE09-4	Robust Control of Propane Pre-cooled Mixed Refrigerant Process for Natural Gas Liquefaction	702
	Mohd Shariq Khan and Moonyong Lee	
TE09-5	Data-Based Skill Evaluation of Human Operators in Process Industry	707
	Olli Haavisto and Antti Remes	
TE09-6	Progressive PCA Modeling for Enhanced Fault Diagnosis in a Batch Process	713
	Jeong Jin Hong and Jie Zhang	
TEP:	Poster Session I	
TEP-1	Design and Control of the Miniature Maglev Using Electromagnets and Permanent Magnets in	719
	Magnetic Levitation System	
	Jeong Min Jo, Young Jae Han, Chang Young Lee, Bu Byung Kang, Kyung-Min Kim, Yoon-Ho Nam, Seung-Chan Park and Seung Hwan Lee	
TEP-2	The Study of Tilting Train Installation for ATP(Automatic Train Protection) On-board Equipment	723
	Jonghyen Baek and Yongkyu Kim	
TEP-3	Improving driver's visual field using estimation of curvature	728
	kihyeon kim	
TEP-4	Zero-Power Control of Magnetic Levitation Vehicles with Permanent Magnets	732
	Chang-Hyun Kim, Han-Wook Cho, Jong-Min Lee, Hyung-Suk Han, Bong-Seup Kim and Dong-Sung Kim	
TEP-5	A Study on Tilting System Control of Tilting Express Train in Korea Conventional Line	736
	SuGil Lee	
TEP-6	A Study on Train Communication Performance Evaluation in Tilting Train	740
	SuGil Lee	
TEP-7	A Study on Traction Motor Running Characteristic in Conventional Line	744
	SuGil Lee	
TEP-8	Design and Implementation of Terminal System Based on the Next Generation FMC Using Wi-Fi and	748
	<u>WiBro</u>	
	Choi Myeong-Jae , Ryu Jung-Hee and Jin Sung-Un	
TEP-9	Development of Smart Controller with Demand Response for AMI connection	752
	INHO CHOI and JOUNGHAN LEE	
TEP-10	Analysis on TCS Requirement using Radio Communication	756
	Kangmi LEE, ducko SHIN and Jaeho LEE	
TEP-11	An Ad-hoc Network Routing Protocol for a Disaster Scene	758
	Wataru Uemura	
TEP-12	Image segmentation method based on particle measurements for charged particle transition analysis in	761
	e-paper	
TED 12	Seungtaek Kim, Hyungtae Kim, Sangho Lee and Jongseok Kim	762
TEP-13	Noise Reducing Railway Door System for High Speed Operation	763
TED 14	Eui-jin Joung, Han-min Lee, Gil-dong Kim and Jae-sung Hong	767
TEP-14	A Study on Quality Improvement of Railway Software	767
TED_15	Eui-jin Joung Sliding Stop for the Disabled in the Pailway Vehicle	774
TEP-15	Sliding Step for the Disabled in the Railway Vehicle	771
	Eui-jin Joung	

TEP-16	Study on Graphic Simulator to Analyze a Possibility of Remote Operation for Process Equipments using a PRIDE Digital Mockup	775
	Kim Sung Huyun, Kim Chang Hoi, Kim Ki Ho and Kim Ho Dong	
TEP-17	A study on the welding seam tracking by using Laser Vision Sensor	779
	Taewook Kim, Seungbeom Lee, Seunghwan Baek and Kwangsuck Boo	
TEP-18	A study on dynamics analysis of a small ship and pitch motion stabilization by engine speed control	783
	Toshihiko Nakatani, Keiji Sasaya, Tomoki Oku, Shigeki Tajika, Taizo Kaneda and Erika Ura	
TEP-19	Active Control of Combustion Oscillations Based on Desired Dynamic Equation	787
	Yichao Hu and Donghai Li	-
TEP-20	An Enterprise-level System View for the Intelligent Grid in Korea	792
	Do Eun Oh, Nam Joon Jung, Seung Hwan Choi and Il Kwon Yang	
TEP-21	A Model of Power System Control Center for the Intelligent Grid in Korea	796
	Do Eun Oh and Hyeon-Soo Kim	
TEP-22	A Study on Calculation of DC Railway Loadflow with Energy Storage System	800
	Hanmin Lee, Euijin Jeong and Sehchan Oh	
TEP-23	A Study on Development of ESS Installed in DC Railway System	804
	Hanmin Lee	
TEP-24	A Study on Modeling and Simulation of DC Railroad System	807
	Gildong Kim and Hanmin Lee	
TEP-25	Power control and modeling of a solar-ultra capacitor hybrid energy system for stand-alone applications	811
	Jae Hoon Cho and Won-Pyo Hong	
TEP-26	A Survey of Customer Responses for Developing Value-Added Services	815
	In Hyeob Yu, Jae Ju Song, Jong Min Ko and Young II Kim	0.0
TEP-27	Reducing Weight of the Power Supply Systems for Rolling Stock by Using Resonance DC-DC	819
	Converter	0.0
	Jeong Min Jo, Young Jae Han, Chang Young Lee, Hyun Seung Jeong and In Duk Park	
TEP-28	A Simulation of 6R Industrial Articulated Robot Arm Using Backpropagation Neural Network	823
	supachoke manigpan, Supaporn Kiattisin and Adisorn Leelasantitham	
TEP-29	Analysis of the Effect of Linguistic Variables of Consequence Membership Function	827
	Kyoung-woong Lee and hansoo choi	
TEP-30	A Detection of Defect in Diamond Images Using 2-D Haar Wavelet Transform	831
	Puttipong Markchai, Supaporn Kiattisin and Adisorn Leelasantitham	
TEP-31	Experimental Study of Coaxial Cable Noise Mechanisms on Ion Chamber Measurement Line for PHWR	835
	Kwang Dae Lee	
TEP-32	View Planning for Occluded Region with Active Imaging System	839
	Hyunki Lee, Hyungsuck Cho and Deokhwa Hong	
TEP-33	Security for Wireless Sensor Networks	844
	Yilin Wang and Maosheng Qin	
TEP-34	A Latency-Tolerant MAC Protocol for Underwater Acoustic Sensor Networks	849
	Zahra Azar	
TEP-35	Development of position measuring system using linear CCD sensor and ultrasonic sensors	855
	Kyung Seok Byun, Namll YOON, Jong Kap choi and Jong Beom Won	
TEP-36	PIMA: RFID and USN based Personalized Indoor Microclimate Adjuster	859
	Seongju Chang, Chulmin Kim Kim and Dongjun Suh	
TEP-37	Multisensor Data Fusion Algorithms for Estimation of a Walking Person Position	863
	Rajibur Khan and Vyacheslav Tuzlukov	
TEP-38	A modified LMS filter for Interference Cancellation System	868
	Bae-Gyun Shin	
TEP-39	Real-time container position estimation method using stereo vision for container auto-landing system	872
	HeeJoo Yoon, YoungChul Hwang and EuiYoung Cha	
	-	

TEP-40	Mitigating Control Loop Interactions: Disturbance Observers versus Decouplers	877
	Ming Tham, Nicholas Pooley, Amin Ganjian and Richard Jones	
TEP-41	Optimization of retrofit period for control system in thermal power plants	883
	Man-Su Shin, Du-Yong Park, Geon-Pyo Lim and Tae-Won Jeong	
TEP-42	Design of Embeded Image Data Processing System	887
	Yuxia LI and Dazhai LI	
FA01 :	Linear/Nonlinear Control I	
FA01-1	Time-scale separation of nonlinear singularly perturbed discrete systems	892
	Kyun-Sang Park and Jong-Tae Lim	
FA01-2	Switching Manifold Control for an Extended Nonholonomic Double Integrator	896
	Kiyotaka Izumi and Keigo Watanabe	
FA01-3	Some Remarks on the Fragility of Transparency and Stability in General 4-Channel Architecture for Bilateral Teleoperation with Delay	900
	Bogdan Liacu, Cesar MENDEZ, Silviu Niculescu and Sorin Olaru	
FA01-4	Synchronization of Two Uncoupled FitzHugh-Nagumo Neurons via Nonlinear Control	906
	Le Hoa Nguyen and Keum-Shik Hong	
FA02 :	Automotive Systems I	
FA02-1	A Model Based Software Validation for Automotive Control Systems	912
	Yasuhiro Ito, Yasuo Sugure and Shigeru Oho	
FA02-2	Model predictive control for drivability enhancement with input dead-segment	916
	Yongsoon Yoon, Youngse An, Youngjoo Park and Hyounjin Kim	
FA02-3	An Effective Control of Auto Defog System to Keep Automobile Windshield Glass Clear	922
	Jeong Hoon Lee	
FA02-4	Haptic Speedometer Using Linear Characteristics	924
	Minkyung Kim, Taehoon Song, Soonmook Jung, Hyunwook Jung, Myungjin Kim, Gihoon Go, Hyungmin Kim, Miyung Kang, Key Ho Kwon and Jae Wook Jeon	
FA02-5	Lateral Control for Vehicles' Automatic Steering with Front Sensor and GPS	928
	Jing Yang, Timothy N. Chang and Edwin Hou	
FA02-6	A new type of Clamping Force Estimator for Electromechanical Brake Systems	933
	Young-Hun Ki, Hyun-Sik Ahn, In-Sik Oh, Jaehan Jeon and Jaeseung Chun	
FA03 :	Mobile Robots and Navigation IV	
FA03-1	Sequential Multi-agent Task Assignment using Auction Algorithm based on D* Lite	938
	Woojin Kim, Dong Soo Cho and H. Jin Kim	
FA03-2	Detection of Multi-Active Markers and Pose for Formation Control	943
	Dongju Kim and JongSuk Choi	
FA03-3	Sensor Data Fusion using Unscented Kalman Filter for Accurate Localization of Mobile Robots	947
	Muhammad Latif Anjum, Jaehong Park, Wonsang Hwang, Hyun-il Kwon, Jong-hyeon Kim, Changhun Lee, Kwang-soo Kim and Dong-il Cho	
FA03-4	Quadruped Walking Robot with Multi PIC microcomputer system	953
	Yoshihiko Takahashi, Mitsuyasu Watanabe and Shingo Tsuchiya	
FA03-5	Realization of Flock Behavior by Using Tau-margin	957
	Yodai Miyagawa, Yuta Kondo and Kazuyuki Ito	
FA03-6	An Evolutionary Approach to Swarm Adaptation in Dense Environments	962
	Suranga Hettiarachchi	

## **FA04**: Real-Time and Embedded Systems

FA04-1	Design of Configurable Network Controller Between Ethernet and EtherCAT	967
	Yong Han Jeon, Jin Ho Kim, Suk Hyun Seo, II Seuk Song, Key Ho Kwon, Jung Hoon Chun and Jae Wook Jeon	
FA04-2	Gateway Between High-performance Fieldbus and Serial Communication	971
	Sung Su YOON, Jea Shul Lee, Seong Jin Cho and Jae Wook Jeon	
FA04-3	Pseudo-Real-Time Control of a USB I/O Device under Windows 7	975
	Yuto Watanabe, Akiyoshi Yamada, Masuhiro Nitta and Kiyotaka Kato	
FA04-4	UPnP single event mechanism for OPRoS robot S/W platform	981
	Ki-Woong Lim, Sang Chul Ahn, Yong-Moo Kwon and KwangHoon Sohn	
FA04-5	Lock-Free Data Structure for Multi-core Processors	984
	Dukki Chung and Jonathan Engdahl	
FA05	: Signal Processing I	
FA05-1	Simple Square-Rooting Voltage-to-Frequency Converter Using Opamps	990
	Thawatchai Kamsri, Thongchai Maneechukate, Amphawan Julsereewong, Vanchai Riewruja and Tawatchai Yaonun	
FA05-2	Study on Automated Inspection Robot and Quantitative Detection of Outer Tile Wall Exfoliation by Wavelet Analysis	994
	Fumihiro Inoue, Satoru Doi, Tatsuya Ishizaki and Yutaka Ohta	
FA05-3	Study Of Acquisition Streetlights Background Signal By Multi-Sensor Array wu yue	1000
FA05-4	Algorithm for Unknown SNR Estimation Based on Sequential Monte Carlo Method in Cluttered Environment	1004
	Seung-Hwan Bae, Yong-Hoon Kim, Seok Jae Lee, Joo Hong Yoon and Vladimir Shin	
FA05-5	Evaluation of Fusion Techniques for Pan-Sharpened THEOS Imagery	1010
	Sathit Intajag and Wientian Kodchabudthada	
FA05-6	Fast Image Compression Using Over-complete ICAMM	1015
	Chih-Cheng Peng, Chih-Hong Kao and Sheng-Ping Hsieh	
FA06	: Humanoid Robots	
FA06-1	Evolution of Humanoid Robot and Contribution of Various Countries in Advancing the Research and	1021
	Development of the Platform	
FA06-2	Akhtaruzzaman Akhter and Amir A. Shafie  A Vertically Intersected, Dual-Axis Modularized Actuator System (DAMA)	1029
FA06-2		1029
FA06-3	renjeng wang, Han-Pang Huang, Tz-How Huang and His-Fan Liao  Proposal of a flexible translational joint mechanism for humanoid robots	1034
FA00-3	Takehiro Yoneyama and Kazuyuki Ito	1034
FA06-4	Development of Computer Integrated Testing Systems for Humanoid Robot Ex-work Inspection	1040
1 700-4	Chi-Sheng Tsai	1040
FA07	: Visual Tracking & Control	
FA07-1	Object Tracking and Visual Servoing using Features Computed from Local Features Descriptor	1044
	Tuan Anh La and Jae-Bok Song	
FA07-2	Adaptive Visual Servo Control For A Quadrotor Helicopter	1049

	Daewon Lee and Hyounjin Kim	
FA07-3	A Particular Object Tracking in an Environment of Multiple Moving Objects	1053
	hyung bok kim and Kwee-Bo Sim	
FA07-4	Effective Covariance Tracker based on Adaptive Changing of Tracking Window	1057
	Jin-Wook Lee and Jae-Soo Cho	
FA08	: [OS] Wind Turbine Control System	
FA08-1	Monitoring of small wind turbine blade using FBG sensors	1059
	changhwan Kim	
FA08-2	Control System of a MW-class Wind Turbine	1062
	Jeonggi Kim, Janghwan Cho, Hansoon Choi and Yoonsu Nam	
FA08-3	A Comparative Study on Responses in the Optimal Region According to Torque Control Methods for	1066
	Wind Turbines	
	Chae-Wook Lim and Kang-Yoon Seo	
FA08-4	LVRT and Power Smoothening of DFIG Wind Turbine System using Energy Storage Devices	1070
	Dong-Choon Lee and THANHHAI NGUYEN	
FA08-5	Active Yaw Control of MW class Wind Turbine	1075
	hansoon choi, Jeonggi Kim, Janghwan Cho and Yoonsu Nam	
FA08-6	Sliding Mode Controller for Torque and Pitch Control of Wind Power System based on PMSG	1079
	Sung-Hun Lee, Young-Jun Joo, Juhoon Back and Jin Heon Seo	
FA09	: [OS] UGV(Unmanned Ground Vehicle) System	
FA09-1	Research of Velocity Control on the Slope road for Unmanned Ground Vehicle	1085
	Jaehoon Jang, Seung ho Bae, Myung Wook Park and Jung Ha Kim	
FA09-2	The Research of Dead Reckoning Stabilization Algorithm	1089
	Bokjoong Yoon and Ja-Kyung Koo	
FA09-3	The research of parking mission planning algorithm for unmanned ground vehicle	1093
	Jae hwan Kim and Chung-kyeom Kim	
FA09-4	The Unmanned Ground Vehicle's Local Path Plan Algorithm that Adapting Weight According to	1097
	Obstacles in Local Area	
	Jae hwan Kim and Kyung-il Lim	
FA09-5	Design of Failsafe Architecture for Unmanned Ground Vehicle	1101
	Jae ung park and Byung hyu Bae	
FA09-6	The Research of Dynamic Network Architecture for Platooning UGVs	1105
	Doo Yong Oh, Hoon Je Woo and Jung Ha Kim	
FAP:	Poster Session II	
FAP-1	Mechanism and Control of Coaxial Double Contra-Rotation Flying Robot	1109
1741	Shoji Machida and Hun-ok Lim	1100
FAP-2	Advanced Obstacles Detection and Tracking by Fusing Millimeter Wave Radar and Image Sensor Data	1115
1711 2	Xianru Liu and Zixing Cai	1110
FAP-3	Modeling and Robustic Control of Reduction Car Using the Ultrasonic Satellite System	1121
1 A1 -3		1121
FAP-4	Hyung Gyu Park, Kil Soo Lee, Hyung Jun Park, Su Yong Kim and Man Hyung Lee  Pseudolite Ultrasonic System(PUS) and Gyro Integrated System Using Kalman Filter	1125
· / \l = <del>-1</del>	Kil Soo Lee, Su Yong Kim, Hyung Gyu Park and Man Hyung Lee	1123
FAP-5	Function Model of Train Control System for Unmanned Operation of Urban Transit System	1129
. / 0	Young-Hoon Lee	1123
	roang ricon 200	

FAP-6	Payload Fairing Separation Analysis Using Constraint Force Equation	1134
	Choong-Seok Oh	
FAP-7	Integrated Map-matching Algorithm Based on Fuzzy Logic and Dead Reckoning	1139
	Yang yanlan, Ye Hua and Fei Shumin	
FAP-8	A New Remote USB Architecture for Live Migration of Virtual Machines in SoD (System on-Demand)  Service	1143
	Dong-oh Kang, Jinho Yoo and Jeunwoo Lee	
FAP-9	Proposal of Safety Activity Systems for Railway Signaling Systems	1147
	Hwang Jong-Gyu, Jo Hyun-Jeong, Yong-Ki Yoon and Baek-Hyun Kim	
FAP-10	Proposal of Automated Performance Testing Tool for Vital Software in Train Control System	1151
	Hyun-Jeong Jo, Jong-Gyu Hwang and Kang-Mi Lee	
FAP-11	RFID Assisted Image Annotation System for A Portable Digital Camera	1156
	Hyunseok Kim and Seongju Chang	
FAP-12	Evaluating Performance of Android Platform Using Native C for Embedded Systems	1160
	Sangchul Lee and Jae Wook Jeon	
FAP-13	Passageway Modeling between Neural Signal and Muscle Activation	1164
	Youngjin Choi, Muhammad Khan and Sajjad Manzoor	
FAP-14	Development of High Performance Shoes to Measure Human Walking	1167
	Yasuhiro Hayakawa	
FAP-15	Development of Portable ECG Measurement Device and PC Software for Automatic ST Analysis	1171
	Gu Young Jeong, Myoung Jong Yoon, Kee Ho Yu and Tae Kyu Kwon	
FAP-16	Feature Selection Consideration for Multi-Class Cardiac Arrhythmia Classification	1175
	Thaweesak Yingthawornsuk and Chusak Thanawattano	
FAP-17	Characterizing Sub-Band Spectral Entropy Based Acoustics as Assessment of Vocal Correlate of Depression	1179
	Thaweesak Yingthawornsuk and Chusak Thanawattano	
FAP-18	Wavelet Packet Based Features for Insufficient Murmur Identification	1184
	Samjin Choi, Young-Kyun Shin, Youjin Cheong, Gi-Ja Lee and Hun-Kuk Park	
FAP-19	Study on SNS Graph Generation and Prediction	1188
	Yuehua Yang, Junping Du, Yingmin Jia and Zengqi Sun	
FAP-20	Image Semantic Description and Automatic Semantic Annotation	1192
	Meiyu Liang, Junping Du, Yingmin Jia and Zengqi Sun	
FAP-21	Interactive Multimedia Courseware of Vowel Training for The Hearing Impaired	1196
	Settachai Chaisanit, Ratchadawan Nimnual and Surachai Suksakulchai	
FAP-22	Proportional Pressure Reducing Valve for Clutch Control System	1200
	So-Nam Yun, Dong-Won Yun, Hyo-Bong Kim and Soon-Chan Hwang	
FAP-23	Study of A MEMS Gyroscope Sensing Unit Simulate and Process	1205
	Yu Liu, Baisheng Sun, Qinwen Yan, Ping Yue and Fuxue Zhang	
FAP-24	Sensorless Vector Control for Permanent Magnet Synchronous Motor Fed by Three-Level Inverter	1209
	Jiangcheng Wang and Shanmei Cheng	
FAP-25	Stable Powered Device (PD) Management Using RS422 Technique in Power Sourcing Equipment (PSE)	1214
	Yoon-Yeob Choi and Jae-Wook Jeon	
FAP-26	A Novel Hybrid Speed Controller of the Vector Control System	1218
	Bo Gong and Shanmei Cheng	
FAP-27	Maximum Torque Control of IM Drive using AIPI Controller	1223
	Dong Hwa Chung, Ju Hui Moon, Jae Sub Ko, Jung Sik Choi and MI Geum Jang	
FAP-28	Control of a novel PV tracking system considering the shadow influence	1229
	Dong Hwa Chung, Mi Geum Jang, Jae Sub Ko, Jung Sik Choi and Ju Hui Moon	
FAP-29	Development of novel MPPT algorithm of PV system considering radiation variation	1235

	Dong Hwa Chung, Sung Jun Kang, Jae Sub Ko, Jung Sik Choi and Jung Woo Baek	
FAP-30	Maximum Torque Control of IPMSM Drive with Multi-MFC	1242
	Dong Hwa Chung, Jung Woo Baek, Jae Sub Ko, Jung Sik Choi and Sung Jun Kang	
FAP-31	Model-Deviation Compensation Control for Uncertain Systems with Time Delay	1248
	xiao-jie sun, hua ye and shu-min fei	
FAP-32	Kalman Filtering in Position Control using a Vision Sensor	1252
1711 02	Eun-Hyeon Ha and Kiheon Park	1202
FAP-33	A Tracking Control Method for a PPR Underactuated Manipulator	1255
I AF-33		1233
EAD 04	Licheng Wu, Guosheng Yang and Zengqi Sun	4050
FAP-34	On Performance Enhancement of a Following Tracker using Stereo Vision	1259
E4 D 05	Nam-Gyu Oh, Kiheon Park and Jae-II Cho	1000
FAP-35	The Control of Collaboration for Comprehensive Transportation Corridor	1263
	yong liao	
FAP-36	NONLINEAR PREDICTIVE CONTROL BASED ON FLATNESS PROPERTIES	1267
	Abdeldjebar bektache	
FAP-37	Method for Reduction of Metal Artifacts in Dental CT Images by Use of Frequency Analysis	1271
	Keishi Mito, Hyoungseop Kim, Joo Kooi Tan, Seiji Ishikawa, Tatsuro Tanaka and Yasuhiro Morimoto	
FP01:	Linear/Nonlinear Control II	
FP01-1	Following Control of Hard Disk Drive Using Derivative State Constrained Optimal Controls	1275
	Jutarut Chaoraingern and Arjin numsomran	
FP01-2	An Unscented Rauch-Tung-Striebel Smoother for a Bearing Only Tracking Problem	1281
	Saifudin Razali, Keigo Watanabe, Shoichi Maeyama and Kiyotaka Izumi	
FP01-3	Patchy approximate explicit model predicitve control	1287
	Hoai Nam Nguyen, Sorin Olaru and Morten Hovd	
FP01-4	Sliding mode control design under partial state feedback for ball and beam system	1293
	Jin-Soo Kim, Gyu-Man Park and Ho-Lim Choi	
FP01-5	Efficient Predictive Flight Control	1297
	Eran Medagoda and Peter Gibbens	
	Etali Wedagoda and Feter Cibberts	
EDO2.	Automativa Systems II	
FPUZ:	Automotive Systems II	
FP02-1	Steering Angle-Disturbance Observer (SA-DOB) Based Yaw Stability Control for Electric Vehicles with	1303
	In-wheel Motors	
	Kanghyun Nam, Yunha Kim, Sehoon Oh and Yoichi Hori	
FP02-2	Evaluation of a Multi-Power System for an Electric Vehicle	1308
	Chi-Sheng Tsai and Ching-Hua Ting	
FP02-3	Dynamic Model and Control Algorithm of HVAC System For OLEV Application	1312
	Mihyun Park, Eun-Gyeong Shin, Heung-Reol Lee and In-Soo Suh	
FP02-4	An ASCU HILS System for a Rolling Stock with Feedback Signals of Dump Valves	1318
	Ho-Yeon Kim, Chul-Goo Kang and Brian Kang	
FP02-5	Swing-Free Control of Mobile Harbor Crane with Accelerometer Feedback	1322
	Ki-Ru Park and Dong-Soo Kwon	
FP03:	Guidance Technologies	
FP03-1	PNG law for missile guidance under time delayed look angle measurement	1328
	Dong Hee Son and Sang Man Seong	

FP03-2	Study on Obstacle Avoidance for Unmanned Ground Vehicles	1332
	Sangwoo Moon, Unghui Lee and Hyunchul Shim	
FP03-3	RMap : A Hybrid Map Created by Maximal Rectangles	1336
	JaeGon Ahn and HeungSeok Jeon	
FP03-4	Behavior-Based Acceleration Commanded Formation Flight Control	1340
	Touraj Soleymani and Fariborz Saghafi	
FP04	: Intelligent Systems	
FP04-1	Transfer Function Representation of Cyclic Consensus Systems	1346
	Myung-Gon Yoon and Koji Tsumura	
FP04-2	Development of an Automation Library for the Mechatronics Development System EasyKit and a Typical Test Application	1352
	Holger Boenicke and Christoph Ament	
FP04-3	Synchronization of bilateral teleoperation systems with input saturation	1357
	Seung-Ju Lee and Hyo-Sung Ahn	
FP04-4	Synchronization of Bilateral Teleoperation Systems using State and Force Observer	1362
	Hyo-Sung Ahn	
FP04-5	Circle Detection and Fitting Using Laser Range Finder for Positioning System	1366
	Xiangqi Huang, Takeshi Sasaki, Hideki Hashimoto and Fumihiro Inoue	
FP04-6	Remote Control System for User Created Robot Supporting Interoperability between Controller and Robot	1371
	Yunjung Park, YongSeok Cho, SiHyeon Yang, Eunmi Choi and Dugki Min	
FP05	: Signal Processing II	
FP05-1	Wavelet Audio Watermark Robust Against MPEG Compression	1375
	Patcharin Artameeyanant	
FP05-2	convex combination of direct frequency estimators	1379
	Sung Jun Ban, Jae Jin Jeong and Sang Woo Kim	
FP05-3	Low Swing CMOS Current Mode Charge Pump	1383
<b>ED</b> 05.4	sittisak chaisotthee and Jirawath Parnklang	4007
FP05-4	Design of computationally efficient 2D narrow-band FIR filters using sampling kernels and McClellan transformation	1387
	Kyoung Jae Kim, J.H. Kim and S.W. Nam	
FP05-5	Adjustable Current Startup Circuit Reference With Zero Steady State Current	1391
EDOE O	Watcharaporn Lertsalee and Jirawath Parklang	4005
FP05-6	Simple and Low-Cost Voltage-Controlled Oscillator	1395
	Amphawan Julsereewong and Teerawat Thepmanee	
FP06	: Biped Walking Robots	
FP06-1	Human Gait-Based Bipedal Walking Robot Design in Progress	1399
	Eunchul Jeon and Sungho Jo	
FP06-2	Inclined Plane Walking Compensation for a Humanoid Robot	1403
	Nattapong Kaewlek and Thavida Maneewarn	
FP06-3	Energy-Efficient Reference Gait Generation Utilizing Variable ZMP and Vertical Hip Motion Based on Inverted Pendulum Model for Biped Robots	1408
	Hyeok Ki Shin and Byung Kook Kim	
FP06-4	Research for Gait Stability of Biped Walking using Vision	1414

	Kyu Min Nam, Byoung-Soo Kim, JaeJun Kim and Soon-Geul Lee	
FP06-5	ZMP Analysis for Dynamic Walking of a Passivity-based Biped Robot with Flat Feet	1419
	Nima Fatehi, Adel Akbarimajd and Masoud Asadpour	
<b>ED03</b>	W . D . ID . W	
FP07:	Vision Based Recognition	
FP07-1	Detecting a Human Body Direction Using a Feature Selection Method	1424
	Yuuki Nakashima	
FP07-2	Fast 3-D Human Motion Capturing from Stereo Data Using Gaussian Clusters	1428
	Thang Nguyen Duc, Tae-Seong Kim, Young-Koo Lee and Sungyoung Lee	
FP07-3	Modeling of hte Human Posture Using a Stereo Camera	1432
	Shigeo Yoshida	
FP07-4	Facial Emotion Recognition using a Combining AAM with DBN	1436
	Kwang-eun Ko and Kwee-Bo Sim	
FP07-5	Recognizing Outdoor Scene Objects Using Texture Features and Probabilistic Appearance Model	1440
	Kaushik Deb, My Ha Le and Kang-Hyun Jo	
FP07-6	Human Motion Recognition Using Directional Motion History Images	1445
	Makoto Murakami	
FDOO		
FP08 :	Manipulation and Motion Planning	
FP08-1	Identification of Dynamic Parameters of an Industrial Robot	1450
	Doo Yong Lee, Gu Yunjin, Hyuk Wang and Jang Ho Cho	
FP08-2	Analysis of Grasp Stability for Multi-fingered Robot Hand	1456
	Eun-Hye Kim, Myo-Taeg Lim and Yong -Kwun Lee	
FP08-3	Trajectory Planning for Saving Energy of a Flexible Manipulator Using Soft Computing Methods	1462
	Akira Abe and Kazuma Komuro	
FP08-4	Trapezoidal Velocity Trajectory Generator with Speed Override Capability	1468
	Songkord Thirachai	
FP08-5	Jerk-Constrained Time-Optimal Control of a Positioning Servo	1473
	Raymond Shieh and Yu-Sheng Lu	
FP08-6	Formal Based Operation Strategy Design for Collaborative Shared Teleoperation System	1477
	Fengge Wu, Junsuo Zhao, Huaping Liu, Xiaohui Hu and Fanjiang Xu	
FP09 :	Unmanned Vehicle Systems - Ground Vehicles	
FP09-1	Deliberative Planner for UGV with Actively Articulated Suspension to Negotiate Geometric Obstacles by	1482
	Using Centipede Locomotion Pattern	
	Kyeong Bin Lim, Sun Je Kim and Yong-San Yoon	
FP09-2	A Path Generation Method for Path Tracking Algorithms that use the Augmented Reality	1487
	Min Ho Kim and Min Cheol Lee	
FP09-3	A Study on an Independent Steering & Driving Control Algorithm for 6WS6WD Vehicles	1491
	Joo-Young choi, Dong-Hyung Kim, Chang-Jun Kim, Young-Ryul Kim, Sang-Ho Kim and Chang-Soo	
FP09-4	Han Analysis of Data Structures used for Storing and Processing 3D LADAD Data	1496
50 7	Carl Crane, Ryan Chilton and Kuk Cho	50
FP09-5	A Study on Motion Control of 6WD/6WS Vehicle using Optimum Tire Force Distribution Method	1502
	Sang Ho Kim, Dong Hyung Kim, Chang Jun Kim, Young Ryul Kim, Joo Young Choi and Chang Soo	
EDOO O	Han  Payalanment of a Sancar Kasylladge Steps Hainz a Gyadhras Algarithm	4500
FP09-6	Development of a Sensor Knowledge Store Using a Quadtree Algorithm	1508

#### FE01: Linear/Nonlinar Control III

FE01-1	The Approximate Control Problems of the Maximal Invariant Sets of Nonlinear Discrete-time Disturbed Control Dynamical Systems: An Algorithmic Approach	1513
	Byungik Kahng	
FE01-2	Sliding Mode Controller with Circular Sliding Surface for 2-link Robot Manipulator	1519
	Young-Hun Jo, Yong-Hwa LEE and Kang-Bak Park	
FE01-3	Smith Predictor Design by CDM for Temperature Control System	1522
	Arjin numsomran	
FE01-4	Satellite Antenna Control: Design and Performance Validation under Given TPF	1527
	Hyo-Sung Ahn and Daewon Chung	
FE02	: [OS] Automation and Control on Robot, Vehicle and Compone	ent
FE02-1	A Study on the Propulsive Motion Characteristics of 3-Joint Fish Robot	1533
	Byung-Ryong Lee, Hyoung-Seok Kim and Tuong Quan Vo	
FE02-2	Statistic Based Iterative Method to Measure Inner Radius of Tube	1538
	Byung-Ryong Lee, Hyoung-Seok Kim and Naranbaatar Erdenesuren	
FE02-3	Development of Remote Excavation system using Real Time module	1544
	Young-su Cho, Du-hwan Yun, Jin-seok Park and Soon-yong Yang	
FE02-4	A Manufacture and Control of Steering Assist Device of an Independent drive EV	1548
	Hacksun Kim, Insung Song, Chanse Jeong and Soonyong Yang	
FE02-5	A Study on the Development of Multi-Stage Solenoid Valve	1552
	Chan-se Jeong, Hak-Sun Kim and Soon-Yong Yang	
FE02-6	A Study on Turning Motion Control of a 3-Joint Fish Robot Using Sliding Mode Based Controllers	1556
	Byung-Ryong Lee, Tuong Quan Vo and Hyoung Seok Kim	
FE03	: Navigation Algorithm (Filter)	
FE03-1	Nonlinear Estimation for Spacecraft Attitude using Decentralized Unscented Information Filter	1562
	Jonghee Bae and Youdan Kim	
FE03-2	Vision-Based Target Motion Estimation of Multiple Air Vehicles Using Unscented Information Filter	1567
	Kwangyul Baek and Hyochoong Bang	
FE03-3	Development of Advanced Particle Filter for Localization of mobile robot	1572
	kwang-min jung and Kwee-Bo Sim	
FE03-4	Position Error Correction for DGPS Based Localization using LSM and Kalman Filter	1576
	Hyeon Seob Eom and MinCheol Lee	
FE03-5	A GPS-IMU-Camera Modelization and Calibration for 3D Localization dedicated to Outdoor Mobile	1580
	<u>Applications</u>	
	Iman Mayssa zendjebil, fakhr-eddine ababsa, jean-yves didier and malik mallem	
FE04	: Networked Control Systems	
FE04-1	Active Localization in Distributed Networks: A Framework	1586
	Hyo-Sung Ahn and Hwan Hur	
FE04-2	Command Coordination in Multi-agent Formation: Euclidean Distance Matrix Approaches	1592
	Hyo-Sung Ahn	

FE04-3	Concurrent Multipath Transfer using SCTP Multihoming over Heterogeneous Network Paths	1598
	Taehun Kim, Jongwook Lee and Young Ik Eom	
FE04-4	Implementation of Localization Available ZigBee-based Sensor node for Configuring the Robot Environment Platform	1603
	Kee-Min Kim, Kyung-Jung Lee, Jae-Oh Kim, Jae-Han Park, Moon-Hong Baek and Hyun-Sik Ahn	
FE04-5	Flow Based Clustering Algorithm for Tourism Search Engine	1608
	jie liu, Du Junping, Zengqi Sun and Yingming Jia	
FE04-6	A Measurement Mechanism of IP Performance Metrics for Network Mobility	1613
	Pyung-Soo Kim	
FE05	: Signal Processing III	
FE05-1	A Gray-code Algorithmic Analog-to-Digital Converter based on Operational Conveyors	1617
	Amphawan Julsereewong and Wandee Petchmaneelumka	
FE05-2	Electronically Adjustable Phase Shifter using OTAs	1622
	Wandee Petchmaneelumka, Kanoknuch Songsuwankit and Vanchai Riewruja	
FE05-3	Audio-Visual Data Fusion for Tracking the Direction of Multiple Speakers	1626
	Quang Nguyen and JongSuk Choi	
FE05-4	4-20mA Current Transceiver	1631
	APINAI RERKRATN, Vanchai Riewruja, Thepjit Cheypoca and Komsan Chaipurimas	
FE05-5	Future Voyage Data Recorder Based on Multi-Sensors and Human Machine Interface for Real Marine Accident	1635
	Iman Morsi, Mohamed Zaghloul and Nermin Anwar	
FE05-6	Power Monitoring Circuit Using Operational Amplifiers	1639
1 200 0	APINAI RERKRATN, Wandee Petchmaneelumka, Prasit Julsereewong and Vanchai Riewruja	1000
	71 IIV TYLETATU TY, Transco Totolinanosianina, Frasikosiosiosiionig ana valisha rationalia	
FE06	: Haptics	
FE06-1	Design of a Master Device for the Teleoperation of Wheeled and Tracked Vehicles	1643
	ba-hai nguyen and Jee-Hwan Ryu	
FE06-2	More Physics-based Haptic Display of Frictional Virtual Surface	1649
	Chang-Gyu Lee, Yo-An Lim, Jaeha Kim and Jeha Ryu	
FE06-3	Force Control of a New 6DOF Haptic Interface for a 6DOF Serial Robot	1653
	vu minh hung and Uhn Joo Na	
FE06-4	Study of a Spherical Ultrasonic Motor for Haptic Display System	1659
	Ryota Ishibashi, Tomohiro Ohara, Naoyuki Takesue, Jumpei Arata, Shigeki Toyama, Masahiko Hoshina, Yoshiyuki Hirai, Naoki Fukaya and Hideo Fujimoto	
FE06-5	Development of Forearm Support-Type Lift Assist System (FOLAS): System Design for Intuitive Assist Operation without Wearing	1663
	Suwoong LEE, Hidetaka NOZAWA and Kenji INOUE	
FE06-6	Haptic Guided Optimized Aircraft Maintenance Assembly Disassembly Path Planning Scheme	1667
	Syed Hassan and Jungwon Yoon	
FE07	: Vision Systems & Applications	
FE07-1	Development of a Structured-light Sensor Based Bin-Picking System Using ICP Algorithm	1673
	Jong-Kyu Oh, Chan-Ho Lee, Sang-Hun Lee, Sung-Hyun Jung, Dasik Kim and Sukhan Lee	
FE07-2	A Real Time Window-based Image Processing Architecture using a Mapping Table	1678
	Min Shik Seok, II Seuk Song, Seunghun Jin and Jae Wook Jeon	

FE07-3	Improvement in Image Retrieval Performance of Vocabulary Tree by Adding Index Storage Array and Multiple Search Algorithm	1682
	Ho-Yong Seo, Ho-Hyun Lee and Ju-Jang Lee	
FE07-4	Human Posture Recognition using Top-view Vision for Intelligence Space Environment	1687
	Weerachai Skulkittiyut and Makoto Mizukawa	
FE07-5	An FPGA-Based Vehicle Speed Measurement System Using an Uncalibrated Camera.	1691
	JI HO SONG, Thuy Nguyen , Seunghun Jin, Dongkyun Kim and Jae Wook Jeon	
FE08	: Kinematics and Dynamics of Robots	
FE08-1	Torque Sensor based Robot Arm Control using Disturbance Observer	1697
	Hosun Lee, YongHwan Oh and Jae-Bok Song	
FE08-2	Minimum-Energy Trajectory Planning on a Tangent for Battery-Powered Three-Wheeled Omni- Directional Mobile Robots	1701
	Hongjun Kim and Byung Kook Kim	
FE08-3	A Study on Traversability of Quadruped Robot in Rough Terrain	1707
	Vo-Gia Loc, Ig Mo Koo, Tran Duc Trong, Ho Moon Kim, Hyungpil Moon, Hyouk Ryeol Choi and Sangdoek Park	
FE08-4	Minimum-Time Grid Coverage Trajectory Planning Algorithm for Mobile Robots with Battery Voltage  Constraints	1712
	JaeSung Kim and ByungKook Kim	
FE08-5	Constant Pelvis Height ZMP-based Walking: A study on energy consumption during walking	1718
	Aliza Che Amran, Fariz Ali and Atsuo Kawamura	
FE08-6	Slope-Walking of a Biped Robot with Position and Orientation based Inverse Kinematics Method	1724
FF00	Fariz Ali, Aliza Che Amran and Atsuo Kawamura	
FE09	Fariz Ali, Aliza Che Amran and Atsuo Kawamura : Unmanned Vehicle Systems - Sensors & Actuators	
<b>FE09</b>		1729
FE09-1	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park	1729
	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor	1729 1733
FE09-1 FE09-2	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV  Changsun Yoo, Youngshin Kang and Bumjin Park  Development of a 3D Position Determination Device using PSD Sensor  Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee	1733
FE09-1	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV  Changsun Yoo, Youngshin Kang and Bumjin Park  Development of a 3D Position Determination Device using PSD Sensor  Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee  Cross country terrain segmenation based on salient features	
FE09-1 FE09-2 FE09-3	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee	1733 1737
FE09-1 FE09-2	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV  Changsun Yoo, Youngshin Kang and Bumjin Park  Development of a 3D Position Determination Device using PSD Sensor  Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee  Cross country terrain segmenation based on salient features  Artem Lenskiy and Jong-Soo Lee  A Study on Application of Sensor Fusion to Collision Avoidance System for Ships	1733
FE09-1 FE09-2 FE09-3 FE09-4	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee A Study on Application of Sensor Fusion to Collision Avoidance System for Ships Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park	1733 1737 1741
FE09-1 FE09-2 FE09-3	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee A Study on Application of Sensor Fusion to Collision Avoidance System for Ships Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park Synthesis of Automatic System for Correction of Program Signal of	1733 1737
FE09-1 FE09-2 FE09-3 FE09-4	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee A Study on Application of Sensor Fusion to Collision Avoidance System for Ships Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park	1733 1737 1741
FE09-1 FE09-2 FE09-3 FE09-4 FE09-5	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee A Study on Application of Sensor Fusion to Collision Avoidance System for Ships Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park Synthesis of Automatic System for Correction of Program Signal of	1733 1737 1741
FE09-1 FE09-2 FE09-3 FE09-4 FE09-5	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee A Study on Application of Sensor Fusion to Collision Avoidance System for Ships Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park Synthesis of Automatic System for Correction of Program Signal of Dmitry Yukhimets and Vladimir Filaretov  Poster Session III  A Study of Calligraphic Skill by Virtual Brush-Writing with Haptic Device —Hidden Markov Modeling of Writing Strokes—	1733 1737 1741
FE09-1 FE09-2 FE09-3 FE09-4 FE09-5 FEP:	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV  Changsun Yoo, Youngshin Kang and Bumjin Park  Development of a 3D Position Determination Device using PSD Sensor  Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee  Cross country terrain segmenation based on salient features  Artem Lenskiy and Jong-Soo Lee  A Study on Application of Sensor Fusion to Collision Avoidance System for Ships  Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park  Synthesis of Automatic System for Correction of Program Signal of  Dmitry Yukhimets and Vladimir Filaretov  Poster Session III  A Study of Calligraphic Skill by Virtual Brush-Writing with Haptic Device —Hidden Markov Modeling of Writing Strokes—  Toshio Hira and Kenichi lida	1733 1737 1741 1745
FE09-1 FE09-2 FE09-3 FE09-4 FE09-5	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee A Study on Application of Sensor Fusion to Collision Avoidance System for Ships Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park Synthesis of Automatic System for Correction of Program Signal of Dmitry Yukhimets and Vladimir Filaretov  Poster Session III  A Study of Calligraphic Skill by Virtual Brush-Writing with Haptic Device —Hidden Markov Modeling of Writing Strokes— Toshio Hira and Kenichi lida A Haptic Device Interface for the Operation of the Virtual Arm	1733 1737 1741 1745
FE09-1 FE09-2 FE09-3 FE09-4 FE09-5 FEP : FEP-1	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee A Study on Application of Sensor Fusion to Collision Avoidance System for Ships Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park Synthesis of Automatic System for Correction of Program Signal of Dmitry Yukhimets and Vladimir Filaretov  Poster Session III  A Study of Calligraphic Skill by Virtual Brush-Writing with Haptic Device —Hidden Markov Modeling of Writing Strokes— Toshio Hira and Kenichi lida A Haptic Device Interface for the Operation of the Virtual Arm Chang-Hoi Kim, Seong-Hyun Kim, Hyo-Jik Lee, Jong-Kwang Lee and Ki-Ho Kim	1733 1737 1741 1745 1751
FE09-1 FE09-2 FE09-3 FE09-4 FE09-5 FEP:	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV Changsun Yoo, Youngshin Kang and Bumjin Park Development of a 3D Position Determination Device using PSD Sensor Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee Cross country terrain segmenation based on salient features Artem Lenskiy and Jong-Soo Lee A Study on Application of Sensor Fusion to Collision Avoidance System for Ships Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park Synthesis of Automatic System for Correction of Program Signal of Dmitry Yukhimets and Vladimir Filaretov  Poster Session III  A Study of Calligraphic Skill by Virtual Brush-Writing with Haptic Device —Hidden Markov Modeling of Writing Strokes— Toshio Hira and Kenichi lida A Haptic Device Interface for the Operation of the Virtual Arm	1733 1737 1741 1745
FE09-1 FE09-2 FE09-3 FE09-4 FE09-5 FEP : FEP-1	: Unmanned Vehicle Systems - Sensors & Actuators  Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV  Changsun Yoo, Youngshin Kang and Bumjin Park  Development of a 3D Position Determination Device using PSD Sensor  Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee  Cross country terrain segmenation based on salient features  Artem Lenskiy and Jong-Soo Lee  A Study on Application of Sensor Fusion to Collision Avoidance System for Ships  Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park  Synthesis of Automatic System for Correction of Program Signal of  Dmitry Yukhimets and Vladimir Filaretov  Poster Session III  A Study of Calligraphic Skill by Virtual Brush-Writing with Haptic Device —Hidden Markov Modeling of Writing Strokes—  Toshio Hira and Kenichi lida  A Haptic Device Interface for the Operation of the Virtual Arm  Chang-Hoi Kim, Seong-Hyun Kim, Hyo-Jik Lee, Jong-Kwang Lee and Ki-Ho Kim Investigation of the relationship between visual information and interaction force on load-on task within	1733 1737 1741 1745 1751

	YUANLONG WEI, yo hwan Kang, chi yen Kim and min cheol Lee	4700
FEP-5	Behavioral performance of multi-robots driven by human drawing	1769
<b>FFD</b> 0	Young Rae Jo and Sungho Jo	4==0
FEP-6	ROHINI : Flower Shaped Robotic Creature As an Intuitive Smart Home Interface	1773
CED 7	Seongju Chang, Sungil Ham and Dongjun Suh	4777
FEP-7	A Robot Control Approach Based on Multi-level Data Fusion	1777
CCD 0	Sangseung Kang	1701
FEP-8	SITAT: Simulation-based Interface Testing Automation Tool for Robot Software Component	1781
EED 0	Jeong Seok Kang, Sang Woo Maeng, Si Wan Kim and Hong Seong Park	4705
FEP-9	Interaction without Programming: Effective Use of Pre-Programmed Reactions in a Creation & Expression Contest	1785
	Hye-Kyung Cho, Youngsun Ryuh and Byoungsoo Kim	
FEP-10	Interactive Virtual Reality Museum for Material Packaging Study	1789
	Ratchadawan Nimnual, settachai chaisanit and Surachai Suksakulchai	
FEP-11	Fuzzy Clustering of Temporal Parameters of Gait during Stance Phase for Walking Speed Estimation	1793
	AURALIUS MANURUNG and Jungwon Yoon	
FEP-12	Development of New Soft Actuator Using Magnetic Intelligent Fluids for Flexible Walking Robot	1797
	Hironari TANIGUUCHI, Masaki Miyake and Koichi Suzumori	
FEP-13	Recognition of Walking Intention Using Multiple Bio/Kinesthetic Sensors for Lower Limb Exoskeletons	1802
	Eun-Hye Jang, Young-Jo Cho, Su-Young Chi, Jae-Yeon Lee, Sang Seung Kang and Byung-Tae Chun	
FEP-14	A Novel Design for Lower Extremity Gait Rehabilitation Exoskeleton Inspired by Biomechanics	1806
	Sang-Hun Pyo and Yoon Jungwon	
FEP-15	Analysis on kinematics of robot fish	1812
	Dong Won Yun, Jin Ho Kyung, Young Su Son and Soo Hyun Kim	
FEP-16	Online Walking Pattern Generation for Biped Walking	1816
	Tetsuya Yoshida and Hun-ok Lim	
FEP-17	Stable Walking Algorithm using Tilting Motion for a Bipedal Robot	1822
	ko deok hyeon, Kim Gyu Ro and Soon Geul Lee	
FEP-18	Development of a Snake Robot Moving in a Small Diameter Pipe	1826
	Hocheol Shin, Kyung-Min Jeong and Jeongjoo Kwon	
FEP-19	Development of an Overhead Crane for Remote Handling Tasks at Nuclear Facility	1830
	Hyo Jik LEE, Jong Kwang Lee, Byung Suk Park, Kiho Kim and Ho Dong Kim	
FEP-20	Effects of torsional stiffness, knee angle, and link ratios on the design of a biologically inspired mobile	1835
	robot with two-segment legs	
EED 04	DongHwan Shin, Youngshik Kim and Jinung An	4000
FEP-21	Equation of motion of a wheeled inverted pendulum on an irregular terrain	1839
FEP-22	se-han lee, Soojun Lee and YongKwun Lee	1012
FEP-ZZ	Remote robotic systems for nuclear environment application	1843
EED 22	Kiho Kim  Payalanment of a System Integration Method using Rehetic Intelligent Companyons	1847
FEP-23	Development of a System Integration Method using Robotic Intelligent Components  Young He Chair Ivan Wee Lee Lin He Sub-Sub-Sub-Ivan Kim and Super He Hear	1047
FEP-24	Young-Ho Choi, Jung-Woo Lee, Jin-Ho Suh, Suk-Jung Kim and Sung-Ho Hong  Development of a control system for master-slave operation	1851
FEF-24		1001
FEP-25	Jong Kwang Lee, Byung Suk Park, Hyo Jik Lee, Kiho Kim and Ho Dong Kim  Study of Feature-Based Image Capturing and Recognition Algorithm	1855
FEF-25		1000
FEP-26	Chih-Hong Kao, Sheng-Ping Hsieh and Chih-Cheng Peng Inspection of brazing joint defects in the heat exchanger using X-ray	1862
ı Lı <sup></sup> 20		1002
FEP-27	Sang-Woo Seo and Jin-Young Kim  Performance Analysis of Vision based Monitoring System for Passenger's Safety on Railway Platform	1867
. L. 21	Sehchan Oh and Hanmin Lee	1007
FEP-28	Camera Lens Radial Distortion Compensation by Illuminating the Epipolar Lines with a Projector	1871
	The state of the s	

	Yeonsoo Kim, Daesik Kim and Sukhan Lee	
FEP-29	Video Stabilization for Robot Eye Using IMU-Aided Feature Tracker	1875
0	Yeon Geol Ryu, Hyun Chul Roh and Myung Jin Chung	
FEP-30	Wide-Angle Laser Structured Light System Calibration with a Planar Object	1879
	Daesik Kim, Seongsoo Lee, Hyunwoo Kim and Sukhan Lee	
FEP-31	Optimal path planning with Holonomic mobile robot using localization vision sensor	1883
	DongSeok Lee, KilSoo Lee, HyungGyu Park and ManHyung Lee	
FEP-32	Design of Cursive Handwriting Characters Using Esthetic Evaluation	1887
	Shinya Miyata and Hiroyuki Fujioka	
FEP-33	Impedance control of robot manipulator using artificial intelligence	1891
	Han Me Kim and Kyoung Taik Park	
FEP-34	Master-slave Teleoperation Control using Time Delay Control	1895
	Hae Jin Lim, Jong Kwang Lee, Kiho Kim, Hyo Jik Lee and E-Sok Kang	
FEP-35	A Hybrid Data Association Approach for Mobile Robot SLAM	1900
	Baifan Chen, Zixing Cai and Zhirong Zou	
FEP-36	ICE Matching, a Novel Approach for Localization Problem	1904
	Maziar Ahmad Sherbafi, Sanaz Taleghani, Edriss Esmaeili, Abolfazl Toraghi Haghighat and Omid	
	Aghazadeh	
FEP-37	The loosely coupled integration system using a Pseudolite Ultrasonic System and a Dead-reckoning for	1908
	the Autonomous Mobile Robots Localization	
	Su Yong Kim, Kang Sup Yoon, Dong Hwal Lee and Man Hyung Lee	
FEP-38	Dynamic Localization based on EKF for Indoor Mobile Robots using Discontinuous Ultrasonic Distance	1912
	Measurements	
FFD 00	Seong Jin Kim and Byung Kook Kim	1010
FEP-39	Development of an autonomous outdoor patrol robot in private road environment	1918
FED 40	Jiyong Jin, Changbae Jung, Donghyeon Kim and Woojin Chung	4000
FEP-40	Development of High Precision Linear Transfer Module using Air Floating System for Flat Panel Display	1922
	MyungJin Chung	
0.04		
SA01	Control Systems & Applications	
SA01-1	Load Swing Control of an Overhead Crane	1926
	Pittaya Pannil, krit Smerpitak, Visitsak La-orlao and Thanit Trisuwannawat	
SA01-2	Collision avoidance and path following for multi-agent dynamical systems	1930
	Ionela Prodan, Sorin Olaru, Cristina Stoica and Silviu-Iulian Niculescu	
SA01-3	Transverse Vibration Control of Axially Moving Web Systems by Regulation of Axial Tension	1936
	Quoc Chi Nguyen, Quang Hieu Ngo and Keum-Shik Hong	
SA01-4	A New and Effective Controller for Induction Motors applying Direct-Decoupling Methodology based on	1941
	Exact Linearization Algorithm and Adaptive Backstepping Technology	
SA01-5	Anh - Tuan DINH, Phung Quang NGUYEN and Minh Duc LE	1946
3A01-3	Active Horizontal Suspension System Using Negative Stiffness Control	1940
SA01-6	Mhia Shahadat, Takeshi Mizuno, Yuji Ishino and Masaya Takasaki	1052
SAU1-0	Design and Implementation of Sliding Mode-State Feedback Control for Stabilization of Rotary Inverted Pendulum	1952
	samira mir mazhari anvar, Iraj Hassanzadeh and Ghasem Alizadeh	
	Carmia IIII IIIIZHAN ANYAN, IIAJ HACCANZAGON ANA CHIGOTH ANZAGON	
CAA2	Communication Systems I	
JAUZ I	Communication Systems I	
SA02-1	Design of Right Angle Slot Antenna for Dual Band and Dual Polarized with Wireless Network	1958

auttapon pomsathit, Chawalit Benjangkaprasert, Noppin Anantrasirichai, Toshio Wakabayashi and paitoon rakluea

SA02-2	Effective of Transmission Power for Wireless Ad-Hoc Networks	1962
	Paitoon Rakluea, auttapon pomsathit, Sirilak Areerachakul and aekkarat lorpichian	
SA02-3	Adaptive Space-Time Receiver for Cooperative Relay Networks	1966
	Rachaneegorn Chaisong, Chakree Tekapakvisit and Chawalit Benjangkaprasert	
SA02-4	Adaptive Equalizer for DS-CDMA Multi-User Communication System Based on Adaptive Laguerre	1970
	<u>Lattice Filter</u>	
	Adisaya Charoenphol, Mayuree Lartwatechakul and Chawalit Benjangkaprasert	
SA02-5	Performance Comparison of AODV and OLSR for MANET	1974
	Paitoon Rakluea and Jintana Nakasuwan	
SA02-6	Planar UWB Antenna with Single Band-Notched Characteristic	1978
	Paitoon Rakluea and Jintana Nakasuwan	
SA03	: Robot Navigation	
SA03-1	Robot Formation Control Based on a Multi-potential Approach	1982
	Santiago Cifuentes, Jose M. Giron-Sierra and Juan F. Jimenez	
SA03-2	MCL-based Global Localization of Cleaning Robot Using Fast Rotation-Invariant Corner Matching Method	1988
SA03-3	Tae-Bum Kwon, Jae-Bok Song and Sung-Chul Kang Symmetrical model based SLAM [M-SLAM] for a quick map-search	1993
3A03-3		1993
SA03-4	Jung-Suk Oh and Kwee-Bo Sim Hierarchical Optimal Time Path Planning Method for a Autonomous Mobile	1997
3A03-4		1991
	MinHyeok Kwon, GwiTae Park, ChangHwan Kim, YeonSik Kang and HeonYoung Lim	
SA04	: Biomechanic Modeling and Simulation	
SA04-1	Development of a particle simulator on cancer cell signaling network with PC cluster system	2002
	Makoto Ogawa, Takashi Nakakuki, Chiharu Ishii and Mitsuo Kobayashi	
SA04-2	Frequency Analysis of intracellular signal transduction systems	2006
	Hiroki Ishiyama, Takashi Nakakuki, Chiharu Ishii and Mitsuo Kobayashi	
SA04-3	Development of Model for Estimation of Knee Joint Extension Moment	2010
	Seongnam Kim and Yoonsu Nam	
SA04-4	Biomechanical analysis of dynamic behavior in human postural control	2014
	Youngkyun Shin and Samjin Choi	
SA04-5	A Study on the Bending Mechanism of the Flexible Ureteroscope	2019
	Man Cheong LEI and Ruxu Du	
SA04-6	Control of Lumbar Spine Flexion-Extension Movement By PD Controller And Feedback Linearization	2024
	<u>Method</u>	
	Maryam Abedi, Mohammad Parnianpour and Gholam Reza vosoughi	
SA05	: Signal Processing IV	
SA05-1	Firearm Identification System with Rotation Invariance	2030
	pitak thumwarin, Takenobu Matsuura, Chawarit Prasit and Kittisak Yakoompai	
SA05-2	Improvement of optical flow accuracy using oculomotor system	2036
	Yoshitaka Nishizaka	
SA05-3	Vision Tracking System For Mobile Robots Using Two Kalman Filters and a Slip Detector	2041
	Wonsang Hwang, Jaehong Park, Hyun-il Kwon, Muhammad Latif Anjum, Jong-hyeon Kim, Changhun Lee, Kwang-soo Kim and Dong-il Cho	
SA05-4	Method of measuring the parameter of objet's orientation using optical flow	2047

## SA06 : [OS] 3D Sound Applications in Robot and Virtual Reality

SA06-1	Cleansed PHAT GCC based Sound Source Localization	2051
	Sangmoon Lee, Youngjin Park and Youn-sik Park	
SA06-2	Evaluation of three different standard head-related transfer functions using an elevation discrimination	2055
	task for virtual sources displayed in the median plane	
	Hyun Jo, William Martens and Youngjin Park	
SA06-3	Acoustic focusing headphone based on delay-sum beamforming	2061
	Jeeln Noh, Hyun Jo, Youngjin Park and Youn-sik Park	
SA06-4	Calibration of measured head-related transfer function database	2065
	Yongwon Ju, youngjin park, youn-sik park and Seokpil Lee	
SA06-5	Analysis of the PHAT technique for multiple sound source localization	2070
	Byoungho Kwon, Youngjin Park and Youn-sik Park	
SA07	: [OS] Image Processing and Pattern Recognition (IPPR)	
SA07-1	Segmentation Method for Cardiac Region in CT Images Based on Active Shape Model	2074
	Hiroki Takahashi, Masafumi Komatsu, Hyoungseop Kim, Joo Kooi Tan, Seiji Ishikawa and Akiyoshi Yamamoto	
SA07-2	Detection of Blood Vessel Regions Using Weighted MIP from Non-enhanced MR Imaging	2078
	Yuiko Koga, Akiyoshi Yamamoto, Hyoungseop Kim, Joo Kooi Tan and Seiji Ishikawa	
SA07-3	Segmentation Method for Phalanges in CR Image by Use of DCT	2082
	Yoshimichi Hozu, Seiichi Murakami, Hyoungseop Kim, Joo Kooi Tan, Seiji Ishikawa and Takatoshi Aoki	
SA07-4	An algorithm for smoke recognition for automatic forest fire detection	2086
	Ho-Woong Choi, In-Kyu Min, Eui-Seok Oh and Dong-Ho Park	
SA07-5	Automatic Extraction of Aortic Aneurysm from Thoracic CTA based on Fuzzy-based 3D Region	2090
	Growing Method	
	Tatsushi Tokuyasu	
SA08	: [OS] Robot Control and Application	
SA08-1	A Flexible Control of Robot Hand with Three Fingers	2094
	Sung Hyun Han, Jin Hwan Sok, Jun Hong Kim, In Man Park and Tae Hee An	
SA08-2	A Robust Neural Network Control of Robot Manipulator for Industrial Application	2099
	Sung Hyun Han, Huu Cong Nguyen, Jin Hwan Sok, Woo Song Lee and Tae Hee An	
SA08-3	A Robust Walking Control of Humanoid Robots for Industrial Application	2103
	Sung Hyun Han, Jin Hwan Sok, Byoung Kyun Shim, Young Ho Ha and Uk Gon Kim	
SA08-4	An Intelligent Control of Mobile Robot Based on Voice Command	2107
	Sung Hyun Han, Byoung Kyun Shim, Kwang Wook Kang, Woo Song Lee and Jong Baem Won	
SA08-5	An Intelligent control of Non-holonomic Mobile Robot Based on Fuzzy Perception	2111
	Sung Hyun Han, Byoung Kyun Shim, Jun Hong Kim, In Man Park and Min Sung Kim	
SA09	: [OS] Advances in GNC Technology for Aerospace Systems I	
SA09-1	A Novel Control Algorithm for Two-axis Motion in 3-DOF TVC Nozzle	2115
	SUNGJIN CHO, Eulgon Kim and HyungSik Lee	
SA09-2	Robust Gain Scheduling Technique for an Agile Missile Subject to Mass Variation	2119

	Dae-Yeon Won, Min-Jea Tahk and Kwang-Yeon Kim	
SA09-3	Decentralized Phase Angle Control for Standoff Tracking using Multiple Unmanned Aircraft	2124
	Seungho Yoon and Youdan Kim	
SA09-4	Two distributed guidance approaches for rendezvous of multiple agents	2128
	Jaemann Park, Je Hyun Yoo and H. Jin Kim	
SA09-5	Range Tracking Filter Using Measurements with Uncertian Delays	2133
	Ick-Ho Whang, SUNGJIN CHO and Dong-Kyun Choe	
SA09-6	Guidance and Control System Design for Impact Angle Control of Guided Bombs	2138
	Yongho Kim, Jongju Kim and Minsu Park	
SA10:	Process Systems	
SA10-1	Quality Monitoring of Laser Welding	2144
	Hee-Shin Kang, Jeong Suh, Tae-Hyun Kim and Taik-Dong Cho	
SA10-2	Centralized versus Market-based Workflow Coordination in the Presence of Uncertainty	2148
	Habin Lee and Karim AL-Yafi	
SA10-3	Pole piece properties evaluation in SEM	2152
	SUN JONG LIM and JAE HOON KANG	
SA10-4	Optimum design of planar redundant cable-suspended robots for minimum time trajectory tracking	2156
	Hamid Reza Fahham and Mehrdad Farid	
SA10-5	Game Theory Applied to Urban Traffic Control Problem	2164
	Israel Alvarez, Alexander Poznyak, Alejandro Malo and Juan Manuel Ibarra Zanata	
SA10-6	IEC Control Specification to HDL Synthesis: Considerations for Implementing PLC on FPGA and Scope	2170
	for Research	
	Manish Patil	
0001		
SP01 :	PID Controllers	
<b>SP01</b> :	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator	2175
	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and	2175
SP01-1	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid	
	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller	2175 2181
SP01-1 SP01-2	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat	2181
SP01-1	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method	
SP01-1 SP01-2 SP01-3	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li	2181 2185
SP01-1 SP01-2	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method	2181
SP01-1 SP01-2 SP01-3	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS	2181 2185
SP01-1 SP01-2 SP01-3	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR	2181 2185
SP01-1 SP01-2 SP01-3 SP01-4	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat	2181 2185 2190
SP01-1 SP01-2 SP01-3 SP01-4	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control	2181 2185 2190
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control  Yali Xue, Donghai Li and Jinggong Liu	2181 2185 2190
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control	2181 2185 2190
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control  Yali Xue, Donghai Li and Jinggong Liu  Communication Systems II	2181 2185 2190
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control  Yali Xue, Donghai Li and Jinggong Liu	2181 2185 2190 2194
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control  Yali Xue, Donghai Li and Jinggong Liu  Communication Systems II  Design of CPW Wide Slot Antenna with Tuning Stub for Wideband Applications	2181 2185 2190 2194
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5 SP02:	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control  Yali Xue, Donghai Li and Jinggong Liu  Communication Systems II  Design of CPW Wide Slot Antenna with Tuning Stub for Wideband Applications  Tuanjai Archevapanich  Modification of Data transmission Filter with Generalized Bessel Transformation	2181 2185 2190 2194 2198
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5 SP02:	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control  Yali Xue, Donghai Li and Jinggong Liu  Communication Systems II  Design of CPW Wide Slot Antenna with Tuning Stub for Wideband Applications  Tuanjai Archevapanich	2181 2185 2190 2194 2198
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5 SP02: SP02-1 SP02-2	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control  Yali Xue, Donghai Li and Jinggong Liu  Communication Systems II  Design of CPW Wide Slot Antenna with Tuning Stub for Wideband Applications  Tuanjai Archevapanich  Modification of Data transmission Filter with Generalized Bessel Transformation  Virote Pairajnanchai, Vanvisa Chutchavong and Kanok Janchitrapongvej  Trapezoid-Stub Fed Rectangular Slot Antenna for WLAN and WiMAX Applications	2181 2185 2190 2194 2198 2202
SP01-1 SP01-2 SP01-3 SP01-4 SP01-5 SP02: SP02-1 SP02-2	Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator  Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid  Discrete Robust PIDx(n-2) Stage PD Cascade Controller  Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat  Calculation of PI Controller Stable Region Based on D-Partition Method  Jinggong Liu, Yali Xue and Donghai Li  DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS  Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat  DDE-based PI Controller and its Application to Gasifier Temperature Control  Yali Xue, Donghai Li and Jinggong Liu  Communication Systems II  Design of CPW Wide Slot Antenna with Tuning Stub for Wideband Applications  Tuanjai Archevapanich  Modification of Data transmission Filter with Generalized Bessel Transformation  Virote Pairajnanchai, Vanvisa Chutchavong and Kanok Janchitrapongvej	2181 2185 2190 2194 2198 2202

	Napop Arsusiri, Ornlarp sangaroon, Sutheera Puntheeranurak and Noppin Anantrasirichai	
SP02-5	Improvement Microstrip Patch Antenna for Ultra-Wideband by C-Shaped Wide Slot	2214
	Sutham Satthamsakul, Sutheera Puntheeranurak, Chawalit Benjankaprasert, Noppin Anantrasirichai and Toshio Wakabayashi	
SP03	: Navigation Applications	
SP03-1	Low-Cost Sensor-based Exploration in Home Environments with Salient Visual Features	2218
	Joong-Tae Park and Jae-Bok Song	
SP03-2	Route Selection Algorithm for Blind Pedestrian	2223
	Slim Kammoun, Florian Dramas, Bernard Oriola and Christophe Jouffrais	
SP03-3	Tourism Information Navigation System Based on SoftMan	2229
	Yipeng Zhou and Junping Du	
SP03-4	Application of Maritime AIS (Automatic Identification System) to ADS-B (Automatic Dependent Surveillance – Broadcast) Transceiver	2233
	Jae-Hoon Song, Kyung-Ryoon Oh, In-Kyu Kim and Jang-Yeon Lee	
SP04	: Brain Signal Processing and Its Applications	
SP04-1	Recognition of Brain Hemodynamic Mental Response for Brain Computer Interface	2238
	Berdakh Abibullaev, Won Seok Kang, Seung-Hyun Lee and Jinung An	
SP04-2	Orthogonal functions based estimation of fNIRS signal strength as GLM parameters, in the course of real-time brain activation detection	2244
	Muhammad Aqil, Keum-Shik Hong and Myung-Yung Jeong	
SP04-3	Brain-Computer Interface using Near-Infrared Spectroscopy for Rehabilitation	2248
	kazuki yanagisawa, Kyohei Asaka, Hideyuki Sawai, Hitoshi Tsunashima, Takafumi Nagaoka, Takeo Tsujii and Kaoru Sakatani	
SP04-4	NIRS based brain activation mapping: a real-time application	2254
	Xiaosu Hu, Keum-Shik Hong and Shuzhi Sam Ge	
SP04-5	Non-invasive brain signal interface for a wheelchair navigation	2257
	Bong Gun Shin, Sungho Jo and Taesoo Kim	
SP05	: Hydraulic/Pneumatic System and MEMS	
SP05-1	Vibration Control of a High-Speed Air-Bearing Spindle using an Active Aerodynamic Bearing	2261
CDOE O	Hiroshi Mizumoto	2205
SP05-2	The Implementation of Hydraulics System and Solar Energy in The Tennis Balls Collecting Machine	2265
SP05-3	nanthawan am-eam AFM as a Robot for Automated Nanohandling	2271
OI 00-0	Florian Krohs, Sergej Fatikow, Malte Bartenwerfer, Uwe Mick, Florian Niewiera and Michael Weigel-	2211
	Jech	
SP05-4	Nanoporous Silicon Metal-Semiconductor-Metal Visible Light Photodetector	2277
	Narin Atiwongsangthong	
SP05-5	Robust Control of a MEMS Optical Switch Using Fuzzy Tuning Sliding mode	2281
	Amin Hassani and Arash Khatamianfar	
SP06	: Human-Robot Interaction	
SP06-1	Generating Music Using a Picture and a Transform System	2285

	GiHoon Go, TaeHoon Song, SoonMook Jung, HyunUk Jeong, MyungJin Kim, MinKyung Kim, HyungMin Kim, MiYoung Kang, KeyHo Kwon and JaeWook Jeon	
SP06-2	PC Application Remote Control via Mobile Phone	2290
3F 00-2		2290
SP06-3	Haeil Hyun, Jonghyun Park, Yunchan Cho and Jae Wook Jeon  Motion Classification using IMU for Human-Robot Interaction	2295
SF00-3		2293
CD0C 4	Kawroong Saktaweekulkit and Thavida Maneewarn	0000
SP06-4	Compact Robot Face with Simple Mechanical Components	2300
0000 5	Yoshihiko Takahashi and Hayato Sato	0004
SP06-5	A Voice Activity Detection System Based on FPGA	2304
	Junhee Jung, Seunghun Jin, Dongkyun Kim, Hyung Soon Kim, Jong Suk Choi and Jae Wook Jeon	
SP06-6	Development of Immersive Augmented Reality Interface System	2309
	Sangwoo Lee, Hoiju Jung, Hyunjong Song and Shinsuk Park	
SP07 Learr	: [OS] Computer Vision Applications to Robotics and Machine ning	
SP07-1	Simple Calibration Method for Omni-stereo Camera System	2315
	Jong-Eun Ha and Isak Choi	
SP07-2	Learning-based Human Detection Using Difference Image in Visual Surveillance	2318
	Jong-Eun Ha, Dong-Joong Kang and Wang-Heon Lee	
SP07-3	Prototype Selection using Reinforcement Learning and Minimal Consistent Subset Identification guide	2320
	Boontee Kruatrachue and Teeratorn Choowong	
SP07-4	Vision-based Obstacle Avoidance System for Unmanned Vehicle	2324
	Jieun Jeung	
SP07-5	Object Modeling for Environment Perception through Human-Robot Interaction	2328
	Soohwan Kim, Donghwan Kim and Sung-Kee Park	
SP07-6	Real-time Lane Detection by using Multiple Cues	2334
	Zhu Teng, Jeong-Hyun Kim and Dong-Joong Kang	
SDOS	: [OS] Robotic Technologies for Construction Automation	
3700	. [03] Robotic Technologies for Construction Automation	
SP08-1	Safety and Productivity Analysis on Alternative Steel Column-Girder Joint for Automated Construction	2338
	Dong-In Kim and Hunhee Cho	
SP08-2	Bolting robot assistance system using image processing	2342
	Mo Yung Hak and Woo Byung-Wook	
SP08-3	Design of Network Framework for Network-Based Humanoid	2346
	Ho-Dong Lee, Joo-Hyung Kim and Gwi-Tae Park	
SP08-4	Mechanism and Analysis of a Robotic Bolting Device for Steel Beam Assembly	2351
	Baeksuk Chu, Kyungmo Jung, Kang Ho Ko and Daehie Hong	
SP09	: [OS] Advances in GNC Technology for Aerospace Systems II	
SP09-1	Multiple UAV Tracking Algorithm for the Multi-Camera System	2357
	Dae-Yeon Won, Hyondong Oh, Sung-Sik Huh, Hyunchul Shim and Min-Jea Tahk	
SP09-2	Distributed Control For Multi-target Surveillance Using Limit Cycle	2361
	Jehyun Yoo, Jaemann Park and Hyounjin Kim	
SP09-3	Operational Study for Earth Observation Satellites by Minimum Command Effort	2365
	Jaehwan Pi, Donghun Lee, Hee Seob Kim and Hyochoong Bang	
SP09-4	A Path Planning Algorithm for Suveillance UAVs with Timing Constrains	2371

0000 5	Chan-Wook Lim, Chang-Kyung Ryoo, Keeyoung Choi, Sanghyuk Park and Jung-Hee Cho	0070
SP09-5	Guidance Law for a Modern Munition	2376
	Woosung Park, Joongsup Yun, Chang-Kyung Ryoo and Yongho Kim	
SE01 :	: [OS] Novel Sliding Mode Control for High Performance	
SE01-1	Design of Guidance Law for Passive Homing Missile using Sliding Mode Control	2380
	Chang-Hun Lee, Tae-Hun Kim, Min-Jea Tahk and Kyung-Soo Kim	
SE01-2	A sliding mode control of discharge air temperature in automotive HVAC using nonlinear sliding surface in input-delay system	2386
	Jeong Hoon Lee	
SE01-3	Sliding Mode Control of Locomotion for a Biomimetic Robot Inspired by Pillbugs	2392
	Jongwon Park, Kyung-soo Kim and Soohyun Kim	
SE01-4	Terminal Sliding Mode Control in Reaching and Sliding Dynamics with Input Limit	2397
	Ji Chul Kim, Kyung-Soo KIM, Soo-Hyun KIM, Jae-Kwan Ryu and Joo-Hyun Baek	
SE01-5	Nonlinear sliding surface design for optical image stabilizer of digital camera	2402
	Ju-yeon Cho and Kyung-Soo KIM	
SE02 :	: Communication Systems III	
SE02-1	Implementation of Physical Platform for Networked Control Systems based on GPC	2404
	Zaiping Chen, Fan Wu, Jianyun Ni and Jia Chao	
SE02-2	Implementation of Embedded System for Ethernet/IP Protocol	2409
	Zaiping Chen, Xia Shao, Chao Jia and Jianyun Ni	
SE02-3	Embedded Linux Platform Several Slave Communication	2413
	Eui Chan Jung and Jae-Wook Jeon	
SE02-4	Implementation and Analysis of the Embedded master for EtherCAT	2418
	IL-Seuk Song, Yong-Han Jeon, Jin-Ho Kim, Suk-Hyun Seo, Key-Ho Kwon, Jung-Hoon Chun and Jae-Wook Jeon	
SE03 :	: [OS] Navigation and Integrated System	
SE03-1	Real-Time Performance Test of an Vision-based Inertial SLAM	2423
	Sangkyung Sung, Sukchang Yun, Young Jae Lee and Byoungjin Lee	
SE03-2	Attitude Estimation using accelerometers with constrained external acceleration	2427
	TRI NHUT DO, Sang Kyeong Park and Young Soo Suh	
SE03-3	An Efficient GPS Parameter Prediction Method using GPS Ephemeris	2431
	Sangkyung Sung, Jongsun Ahn, Jin-bok Kim and Young Jae Lee	
SE03-4	UKF Based Vision Aided Navigation System with Low Grade IMU	2435
	Sangkyung Sung, Daehee Won and Young Jae Lee	
SE04 :	: Biosignal Processing and Analysis	
SE04-1	Analysis of attention deficit hyperactivity disorder in EEG using wavelet transform and self organizing maps	2439
	Seung Hyun Lee, Won-seok Kang, Berdakh Abibullaev, Yunhee Shin and Jinung An	
SE04-2	Multichannel Temporal Data Classification of Motor Imagination Using fNIRS	2443
JLU <del>1</del> -2		∠ <del>++</del> 3
SE04-3	Sei Takahashi, Hideo Nakamura and Hitoshi Tsunashima  Medical Image Processing and Analysis for Nuclear Medicine Diagnosis	2448
JLU4-3	<u>wiedical image Frocessing and Analysis for Nucleal Wedicine Diagnosis</u>	<b>4440</b>

#### **SE05**: Power System and Control

SE05-1	Harmonic Analysis of Grid-Connected Photovoltaic System with Adjustable Speed Drives	2452
	Muhammad Ikram Mohd Rashid, Makbul Anwari and Taufik null	
SE05-2	Genetic Algorithms-Based Gain Optimization of a Simple Learning Control for Single-Phase Shunt  Active Filters	2457
	Wanchak Lenwari	
SE05-3	Nine-Level Inverter for Induction Motor	2462
	Vittaya Tipsuwanporn	
SE05-4	A Variable Gains PI Speed Controller In a Simplified Scalar Mode Control Induction Machine Drive -	2467
	Design and Implementation -	
	Azeddine DRAOU	
SE06	: [OS] Mechatronics System Design and Control	
SE06-1	Paired Vision-based Structural Health Monitoring System	2472
	Hae-Min Jeon, Seung-Mok Lee, Seong-Han Choi and Hyun Myung	
SE06-2	Indoor User Localization Using Particle Filter with Multipath Compensation	2476
	Jongdae Jung and Hyun Myung	
SE06-3	Novel Design and Position Control of an Omni-directional Flying Automobile (Omni-Flymobile)	2480
	Seul Jung and seung ho Jeong	
SE06-4	A Case Study as a Class Project of Master-Slave Line Tracer Competition for Undergraduate Student	2485
	Education	
	Seul Jung and Kwang Gi Shim	
SE07	: [OS] Printed Electronics Systems and Processes	
SE07-1	The Influence of Aspect Ratio of Dots on Ink Transfer in Gravure Printing Using Conductive Ink	2490
OLO7 1	Kyung Joon Han, Byung Joon Ahn and Sung Lim Ko	2400
SE07-2	Compensation of Machine Directional Register in a Multi-layer Roll-to-Roll Printed Electronics	2494
OLU1-Z	HyunKyoo Kang, Kee-Hyun Shin and Chang-Woo Lee	2434
SE07-3	Analysis of Ink Transfer Process for R2R Printing Applications with Non-Newtonian Ink Property	2498
3L07-3	Kyunghun Kim, Taewon Nam and Yang Na	2430
SE07-4	Fuzzy Control of the Lateral Position of Web Using a Steering Guide	2502
3L07-4	SANGYOON LEE and Nguyen Hoang	2302
SE08	: [OS] Robotics Technology Application	
SE08-1	Robust DV-hop Algorithm for Localization in Wireless Sensor Network	2506
	Jaehun Lee, Wooyong Chung, Euntai Kim and In Wha Hong	
SE08-2	Ultrasound Simulation With The Bat-like Signal In Clutter Backgound.	2510
	SangWook Park and DaeEun Kim	
SE08-3	Analysis of collective behavior and grasp motion in human hand	2514
	Jongwoo Park and Joono Cheong	
SE08-4	Driving Control of Mobile Robot with Mecanum Wheel using Fuzzy Inference System	2519
	Jungje Park, Sudae Kim, Jungmin Kim and Sungshin Kim	
SE08-5		

## **SE09**: Unmanned Vehicle Systems - Flight Control

SE09-1	Small scale rotorcraft UAS flight control using MPC	2529
	Stefano Colautti and Henk Haverdings	
SE09-2	Ground Test Results of Flight Control System for the Smart UAV	2533
	Youngshin Kang, Bumjin Park, Changsun Yoo, Yushin Kim and Samok Koo	
SE09-3	Reinforcement Learning based Neuro-control Systems for an Unmanned Helicopter	2537
	Dongjin Lee and Hyochoong Bang	
SE09-4	Evolutionary Design of the Controller for the Search of Area with Obstacles using Multiple UAVs	2541
	Soohun Oh and Jinyoung Suk	