

Table of Contents

TA01 : Identification and Estimation 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 |
| | Mohammed Sowket Ali, Jun-Sung Lee and Young-Il Lee | |
| TA01-3 | Observer Based Tip Tracking Control of Two-Link Flexible Manipulator | 9 |
| | Masoud Mosayebi, Mostafa Ghayour and Mostafa Shariati Nia | |
| 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 | |

TA03 : 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 |
| | Kyungmin Jeong | |
| TA04-2 | 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 |
| | Jung-Hoon Hwang, Sewoong Jun, Donghoon Cha, Kaehoon Jeon, Seung-Hun Kim and Jongbae Lee | |
| TA04-5 | Simulation Based for Intelligent Control System of Multi – Humanoid Robots for Dynamic Load Carrying | 101 |
| | Han Guen Kim, Jin Ung An, Jeon Il 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 |
| | Yohei Saika, Ken Okamoto and Fumiya Matsubara | |
| TA07-2 | Adaptive Local Model Networks with Higher Degree Polynomials | 168 |
| | Oliver Baenfer, Marlon Franke and Oliver Nelles | |
| TA07-3 | Chip Form Classification and Main Cutting Force Prediction of Cast Nylon in Turning Operation Using Artificial Neural Network | 172 |
| | Bandit Suksawat | |
| TA07-4 | A Reinforcement Learning System Embedded Agent with Neural Network-Based Multi-Valued Pattern Memory Structure | 176 |
| | Masanao Obayashi, Tomohiro Nishida, Takashi Kuremoto, Kunikazu Kobayashi and Liangbing Feng | |
| TA07-5 | Weight Decision Algorithm for Oversampling Technique on Class-Imbalanced Learning | 182 |
| | kang youngil | |

TA08 : [OS] Control and Sensing Application

| | | |
|--------|---|-----|
| TA08-1 | Estimation for a Hand Position and Orientation Robust to Motion of Fingers Using a Web Camera | 187 |
| | Yoshiaki Mizuchi, Hideki Kawai, Yoshinobu Hagiwara, Hiroki Imamura and Yongwoon Choi | |
| TA08-2 | A Hetero-Core Optical Fiber Dendrometer for measurement of a Tree growing condition | 191 |
| | Hoshito Uchida, Shohei Akita, Norikazu Kumekawa and Kazuhiro Watanabe | |
| TA08-3 | Modeling and Control Allocation for Ship Berthing System Design | 195 |
| | bui Van Phuoc, Young Bok Kim, Kwon Soon Lee, Jeong Soon Jeong and Dong Seok Lee | |
| 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 |
| | Jung-Su Kim | |
| TA09-4 | H∞ Finite Memory Controls for Linear Discrete-Time Systems | 223 |
| | Soohee Han and Hyoun-chul Choi | |
| TA09-5 | Design and Implementation of an Adaptive Predictive Controller for a Nonlinear Industrial Process Plant using Hysys and Matlab Simulation Packages | 227 |
| | Reza Sobhani Ahmadgurabi, Mohammad Ali Nekoui and Karim Salahshoor | |

TP01 : Identification and Estimaton II

| | | |
|--------|--|-----|
| TP01-1 | closed loop modelling method for non-linear system using laguerre polynomials | 231 |
| | yusuke hirama and hiroto hamane | |
| TP01-2 | On Equilibrium Probabilities in a class of Two Station Closed Queueing Networks | 237 |
| | Woo-Sung Kim and James Morrison | |
| TP01-3 | Disturbance Retrieving Unknown Input Proportional Integral Observer For Generalized Linear Systems: Application to fault diagnosis | 243 |
| | Mohammad Mahdy Share Pasand and Hamid D. Taghirad | |

| | | |
|--------|--|-----|
| 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 generalized Voronoi diagram | 309 |
| | MINGLEI SHAO and Ji-yeong Lee | |
| TP03-6 | Optimal Trajectory Planning of a Mobile Robot with Spatial Manipulator for Obstacle Avoidance | 314 |
| | Mostafa Shariati Nia, Mostafa Ghayour and Masoud Mosayebi | |

TP04 : [OS] Instrumentation and Control Applications for Steel-Making 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 |
| | Witsarut Sriratana, Kreangkrai Nakmee and Lerdlekha Tanachaikhan | |
| TP05-2 | Walking on the Slopes with Tactile Sensing System for Humanoid Robot | 350 |
| | Kitti Suwanratchatamane, Mitsuharu Matsumoto and Shuji Hashimoto | |
| TP05-3 | A Prototype Measuring Set for Capturing Dissipated Force on Soft Armor | 356 |
| | Chatchai Suppitaksakul, Nara Chalermklin, Somprasong Parsapratet and Somnuk Sungnu | |
| TP05-4 | Modeling and Design of a Gripper for a Robotic Surgical System Integrating Force Sensing Capabilities in 4 DOF | 361 |
| | Mathieu Stephan, Giulio Rognini, Ali Sengul, Ricardo Beira, Laura Santos-Carreras and Hannes Bleuler | |
| TP05-5 | A Novel CuInS₂/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 Compensation Method of the Error in Palletizing Work Cell on the Conversion from an Off-Line Generated Program to a Real Job Program | 374 |
| | 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 system | 385 |
| | 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

| | | |
|--------|--|-----|
| TP07-1 | Adaptive T-S type Rough-Fuzzy Inference Systems (ARFIS) for Mobile Robot Navigation | 403 |
| | Chang Su Lee | |
| 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 |
| | 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 |
| | Duong Van Quang and Kyoung Kwan Ahn | |
| TP08-2 | A Generation Step to Develop Steel Rolling Machine Performance Using Electro-Hydraulic Actuator and Modified-Grey Fuzzy PID Controller | 423 |
| | Quang Truong Dinh, Kyoung Kwan Ahn and Jong Il 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 Il 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 Il Yoon | |

TP09 : [OS] Recent Advances in Process Control I

| | | |
|--------|---|-----|
| TP09-1 | Model Predictive Control based on ARX models | 448 |
| | Junichiro Kon and Yoshiyuki Yamashita | |
| TP09-2 | Dynamic tuning of PI-controllers based on model-free reinforcement learning methods | 453 |
| | Lena Abbasi Brujeni, Jong Min Lee and Sirish L. Shah | |
| TP09-3 | Approximate Dynamic Programming Approach for Process Control | 459 |
| | Jay Lee | |
| TP09-4 | Dynamic Study for Oscillatory Temperature in Methanol Partial Oxidation | 465 |
| | Jietae Lee, Jin-Su Kim, Jeonguk Byeon and Dong Hyun Kim | |
| TP09-5 | Combined Run-to-Run and Delta LQG Control: Controller Design and Application to 12-inch RTP Equipment | 469 |
| | 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 |
| | Sang-ik An and Dong-Soo Kwon | |
| TE01-5 | Robust Control of a pH Neutralization Process Plant Using QFT | 497 |
| | Raha Shabani, Ali Khaki Sedigh and Karim Salahshoor | |
| 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 |
| | Thepjit Cheypoca, Wandee Petchmaneelumka, Sirichai Tammaruckwattana and Vanchai Riewruja | |

| | | |
|--------|---|-----|
| 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 |
| | 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 Powered Ankle Exoskeleton | 576 |
| | Kyung Kim, Jae-Jun Kim, Seung-Rok Kang, Gu-Young Jeong and Tae-Kyu Kwon | |
| 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 | 600 |
| | Mohammad Mahdy Share Pasand and Hamid reza Taghirad | |

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 |
| | Dong-Hyuk Lee, Hyungpil Moon and Hyouk Ryeol Choi | |
| TE06-3 | Benefit/Cost Analysis of a Robot-based Construction Automation System | 616 |
| | Taehoon Kim and Ung-Kyun Lee | |
| TE06-4 | Remote mine sensing technology using a mobile wheeled robot RAT-1 | 622 |
| | Nobuhiro Shimoi | |
| TE06-5 | Metric Based Nonblocking Supervisory Control of Discrete Event Systems | 627 |
| | Jun-Sang Park, Hyun-Wook Jo, Jun-Han Oh and Jong-Tae Lim | |
| TE06-6 | Cost-based Cooperative Strategy to Search Mobile Evader in Roadmap based Environment | 631 |
| | Tareq Haque and ChangHwan Kim | |

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 controller design of polynomial matrix polytopes | 641 |
| | Dong Hwan Lee, Jin Bae Park and Young Hoon Joo | |
| TE07-3 | 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

| | | |
|--------|---|-----|
| TE08-1 | Interpolation and Tracking of Rigid Body Orientations | 668 |
| | Jonghoon Park | |
| TE08-2 | Development of Smart Actuator for Lightweight Modular Robot | 674 |
| | Young Jin Lee, Min Gyu Park and Seok-Jo Go | |
| TE08-3 | Development of an industrial robot manipulator for the easy and safe | 678 |
| | Chanhun Park | |
| TE08-4 | Implementation of IEC61800 based EtherCAT Slave Module for Real-time Multi-axis Smart Driver System | 682 |
| | 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 ChangKyo 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 Magnetic Levitation System | 719 |
| | 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 WiBro | 748 |
| | 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 e-paper | 761 |
| | Seungtaek Kim, Hyungtae Kim, Sangho Lee and Jongseok Kim | |
| TEP-13 | Noise Reducing Railway Door System for High Speed Operation | 763 |
| | Eui-jin Joung, Han-min Lee, Gil-dong Kim and Jae-sung Hong | |
| TEP-14 | A Study on Quality Improvement of Railway Software | 767 |
| | Eui-jin Joung | |
| 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 Il Kim | |
| TEP-27 | Reducing Weight of the Power Supply Systems for Rolling Stock by Using Resonance DC-DC Converter | 819 |
| | 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 Embedded 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 Hyoujin 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, Il 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 |
| | Fumihiko Inoue, Satoru Doi, Tatsuya Ishizaki and Yutaka Ohta | |
| FA05-3 | Study Of Acquisition Streetlights Background Signal By Multi-Sensor Array | 1000 |
| | wu yue | |
| 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 Development of the Platform | 1021 |
| | Akhtaruzzaman Akhter and Amir A. Shafie | |
| FA06-2 | A Vertically Intersected, Dual-Axis Modularized Actuator System (DAMA) | 1029 |
| | renjeng wang, Han-Pang Huang, Tz-How Huang and His-Fan Liao | |
| FA06-3 | Proposal of a flexible translational joint mechanism for humanoid robots | 1034 |
| | Takehiro Yoneyama and Kazuyuki Ito | |
| FA06-4 | Development of Computer Integrated Testing Systems for Humanoid Robot Ex-work Inspection | 1040 |
| | Chi-Sheng Tsai | |

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 |

| | | |
|--------|---|------|
| FA07-3 | Daewon Lee and Hyounjin Kim A Particular Object Tracking in an Environment of Multiple Moving Objects | 1053 |
| FA07-4 | hyung bok kim and Kwee-Bo Sim Effective Covariance Tracker based on Adaptive Changing of Tracking Window | 1057 |

FA08 : [OS] Wind Turbine Control System

| | | |
|--------|--|------|
| FA08-1 | Monitoring of small wind turbine blade using FBG sensors changhwan Kim | 1059 |
| FA08-2 | Control System of a MW-class Wind Turbine Jeonggi Kim, Janghwan Cho, Hansoon Choi and Yoonsu Nam | 1062 |
| FA08-3 | A Comparative Study on Responses in the Optimal Region According to Torque Control Methods for Wind Turbines Chae-Wook Lim and Kang-Yoon Seo | 1066 |
| FA08-4 | LVRT and Power Smoothing of DFIG Wind Turbine System using Energy Storage Devices Dong-Choon Lee and THANHHAI NGUYEN | 1070 |
| FA08-5 | Active Yaw Control of MW class Wind Turbine hansoon choi, Jeonggi Kim, Janghwan Cho and Yoonsu Nam | 1075 |
| FA08-6 | Sliding Mode Controller for Torque and Pitch Control of Wind Power System based on PMSG Sung-Hun Lee, Young-Jun Joo, Juhoon Back and Jin Heon Seo | 1079 |

FA09 : [OS] UGV(Unmanned Ground Vehicle) System

| | | |
|--------|--|------|
| FA09-1 | Research of Velocity Control on the Slope road for Unmanned Ground Vehicle Jaehoon Jang, Seung ho Bae, Myung Wook Park and Jung Ha Kim | 1085 |
| FA09-2 | The Research of Dead Reckoning Stabilization Algorithm Bokjoong Yoon and Ja-Kyung Koo | 1089 |
| FA09-3 | The research of parking mission planning algorithm for unmanned ground vehicle Jae hwan Kim and Chung-kyeom Kim | 1093 |
| FA09-4 | The Unmanned Ground Vehicle's Local Path Plan Algorithm that Adapting Weight According to Obstacles in Local Area Jae hwan Kim and Kyung-il Lim | 1097 |
| FA09-5 | Design of Failsafe Architecture for Unmanned Ground Vehicle Jae ung park and Byung hyu Bae | 1101 |
| FA09-6 | The Research of Dynamic Network Architecture for Platooning UGVs Doo Yong Oh, Hoon Je Woo and Jung Ha Kim | 1105 |

FAP : Poster Session II

| | | |
|-------|--|------|
| FAP-1 | Mechanism and Control of Coaxial Double Contra-Rotation Flying Robot Shoji Machida and Hun-ok Lim | 1109 |
| FAP-2 | Advanced Obstacles Detection and Tracking by Fusing Millimeter Wave Radar and Image Sensor Data Xianru Liu and Zixing Cai | 1115 |
| FAP-3 | Modeling and Robustic Control of Reduction Car Using the Ultrasonic Satellite System Hyung Gyu Park, Kil Soo Lee, Hyung Jun Park, Su Yong Kim and Man Hyung Lee | 1121 |
| FAP-4 | Pseudolite Ultrasonic System(PUS) and Gyro Integrated System Using Kalman Filter Kil Soo Lee, Su Yong Kim, Hyung Gyu Park and Man Hyung Lee | 1125 |
| FAP-5 | Function Model of Train Control System for Unmanned Operation of Urban Transit System Young-Hoon Lee | 1129 |

| | | |
|--------|---|------|
| 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 |

| | | |
|--------|--|------|
| FAP-30 | Dong Hwa Chung, Sung Jun Kang, Jae Sub Ko, Jung Sik Choi and Jung Woo Baek Maximum Torque Control of IPMSM Drive with Multi-MFC | 1242 |
| FAP-31 | Dong Hwa Chung, Jung Woo Baek, Jae Sub Ko, Jung Sik Choi and Sung Jun Kang Model-Deviation Compensation Control for Uncertain Systems with Time Delay | 1248 |
| FAP-32 | xiao-jie sun, hua ye and shu-min fei Kalman Filtering in Position Control using a Vision Sensor | 1252 |
| FAP-33 | Eun-Hyeon Ha and Kiheon Park A Tracking Control Method for a PPR Underactuated Manipulator | 1255 |
| FAP-34 | Licheng Wu, Guosheng Yang and Zengqi Sun On Performance Enhancement of a Following Tracker using Stereo Vision | 1259 |
| FAP-35 | Nam-Gyu Oh, Kiheon Park and Jae-II Cho The Control of Collaboration for Comprehensive Transportation Corridor | 1263 |
| FAP-36 | yong liao NONLINEAR PREDICTIVE CONTROL BASED ON FLATNESS PROPERTIES | 1267 |
| FAP-37 | Abdeldjebbar bektache 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 predicitive 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 | |

FP02 : Automotive Systems II

| | | |
|--------|---|------|
| FP02-1 | Steering Angle-Disturbance Observer (SA-DOB) Based Yaw Stability Control for Electric Vehicles with In-wheel Motors | 1303 |
| | 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 Fumihiko 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 |
| | sittisak chaisotthee and Jirawath Parnklang | |
| 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 |
| | Watcharaporn Lertsalee and Jirawath Parkklang | |
| 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 | |

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 | |

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 Using Centipede Locomotion Pattern | 1482 |
| | 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 Han | |
| FP09-4 | Analysis of Data Structures used for Storing and Processing 3D LADAD Data | 1496 |
| | Carl Crane, Ryan Chilton and Kuk Cho | |
| 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 Han | |
| FP09-6 | Development of a Sensor Knowledge Store Using a Quadtree Algorithm | 1508 |

FE01 : Linear/Nonlinear 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 Component

| | | |
|--------|--|------|
| 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 Applications | 1580 |
| | Iman Maysa zendjebil, fakhr-eddine ababsa, jean-yves didier and malik malleem | |

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 |
| | APINAI RERKRATN, Wandee Petchmaneelumka, Prasit Julsereewong and Vanchai Riewruja | |

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, Il 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 Quadraped 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 |
| | Fariz Ali, Aliza Che Amran and Atsuo Kawamura | |

FE09 : Unmanned Vehicle Systems - Sensors & Actuators

| | | |
|--------|---|------|
| FE09-1 | Hardware-In-the-Loop Simulation Test for Actuator Control System of Smart UAV | 1729 |
| | Changsun Yoo, Youngshin Kang and Bumjin Park | |
| FE09-2 | Development of a 3D Position Determination Device using PSD Sensor | 1733 |
| | Jin-Young Suk, Do-Myung Kim and Jeong-Gi Lee | |
| FE09-3 | Cross country terrain segmenation based on salient features | 1737 |
| | Artem Lenskiy and Jong-Soo Lee | |
| FE09-4 | A Study on Application of Sensor Fusion to Collision Avoidance System for Ships | 1741 |
| | Jonggu Kang, Minjung Jin, Jeehoon Park and Dongho Park | |
| FE09-5 | Synthesis of Automatic System for Correction of Program Signal of | 1745 |
| | Dmitry Yukhimets and Vladimir Filaretov | |

FEP : Poster Session III

| | | |
|-------|---|------|
| FEP-1 | A Study of Calligraphic Skill by Virtual Brush-Writing with Haptic Device —Hidden Markov Modeling of Writing Strokes— | 1751 |
| | Toshio Hira and Kenichi Iida | |
| FEP-2 | A Haptic Device Interface for the Operation of the Virtual Arm | 1755 |
| | Chang-Hoi Kim, Seong-Hyun Kim, Hyo-Jik Lee, Jong-Kwang Lee and Ki-Ho Kim | |
| FEP-3 | Investigation of the relationship between visual information and interaction force on load-on task within virtual environment | 1759 |
| | Lee JAEHOON and KIM JAEHYO | |
| FEP-4 | Application of Signal Compression into Medical Surgery Robot with Cable-Pulley System | 1765 |

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

| | | |
|--------|--|------|
| FEP-29 | Yeonsoo Kim, Daesik Kim and Sukhan Lee Video Stabilization for Robot Eye Using IMU-Aided Feature Tracker | 1875 |
| FEP-30 | Yeon Geol Ryu, Hyun Chul Roh and Myung Jin Chung Wide-Angle Laser Structured Light System Calibration with a Planar Object | 1879 |
| FEP-31 | Daesik Kim, Seongsoo Lee, Hyunwoo Kim and Sukhan Lee Optimal path planning with Holonomic mobile robot using localization vision sensor | 1883 |
| FEP-32 | DongSeok Lee, KilSoo Lee, HyungGyu Park and ManHyung Lee Design of Cursive Handwriting Characters Using Esthetic Evaluation | 1887 |
| FEP-33 | Shinya Miyata and Hiroyuki Fujioka Impedance control of robot manipulator using artificial intelligence | 1891 |
| FEP-34 | Han Me Kim and Kyoung Taik Park Master-slave Teleoperation Control using Time Delay Control | 1895 |
| FEP-35 | Hae Jin Lim, Jong Kwang Lee, Kiho Kim, Hyo Jik Lee and E-Sok Kang A Hybrid Data Association Approach for Mobile Robot SLAM | 1900 |
| FEP-36 | Baifan Chen, Zixing Cai and Zhirong Zou ICE Matching, a Novel Approach for Localization Problem | 1904 |
| FEP-37 | Maziar Ahmad Sherbafi, Sanaz Taleghani, Edriss Esmaeili, Abolfazl Toraghi Haghighat and Omid Aghazadeh The loosely coupled integration system using a Pseudolite Ultrasonic System and a Dead-reckoning for the Autonomous Mobile Robots Localization | 1908 |
| FEP-38 | Su Yong Kim, Kang Sup Yoon, Dong Hwal Lee and Man Hyung Lee Dynamic Localization based on EKF for Indoor Mobile Robots using Discontinuous Ultrasonic Distance Measurements | 1912 |
| FEP-39 | Seong Jin Kim and Byung Kook Kim Development of an autonomous outdoor patrol robot in private road environment | 1918 |
| FEP-40 | Jiyong Jin, Changbae Jung, Donghyeon Kim and Woojin Chung Development of High Precision Linear Transfer Module using Air Floating System for Flat Panel Display MyungJin Chung | 1922 |

SA01 : Control Systems & Applications

| | | |
|--------|--|------|
| SA01-1 | Load Swing Control of an Overhead Crane | 1926 |
| SA01-2 | Pittaya Pannil, krit Smerpitak, Visitsak La-orlao and Thanit Trisuwannawat Collision avoidance and path following for multi-agent dynamical systems | 1930 |
| SA01-3 | Ionela Prodan, Sorin Olaru, Cristina Stoica and Silviu-Iulian Niculescu Transverse Vibration Control of Axially Moving Web Systems by Regulation of Axial Tension | 1936 |
| SA01-4 | Quoc Chi Nguyen, Quang Hieu Ngo and Keum-Shik Hong A New and Effective Controller for Induction Motors applying Direct-Decoupling Methodology based on Exact Linearization Algorithm and Adaptive Backstepping Technology | 1941 |
| SA01-5 | Anh - Tuan DINH, Phung Quang NGUYEN and Minh Duc LE Active Horizontal Suspension System Using Negative Stiffness Control | 1946 |
| SA01-6 | Mhia Shahadat, Takeshi Mizuno, Yuji Ishino and Masaya Takasaki Design and Implementation of Sliding Mode-State Feedback Control for Stabilization of Rotary Inverted Pendulum samira mir mazhari anvar, Iraj Hassanzadeh and Ghasem Alizadeh | 1952 |

SA02 : Communication Systems I

| | | |
|--------|---|------|
| SA02-1 | Design of Right Angle Slot Antenna for Dual Band and Dual Polarized with Wireless Network auttapon pomsathit, Chawalit Benjangkaprasert, Noppin Anantrasirichai, Toshio Wakabayashi and paitoon raklua | 1958 |
|--------|---|------|

| | | |
|--------|--|------|
| SA02-2 | Effective of Transmission Power for Wireless Ad-Hoc Networks | 1962 |
| | Paitoon Rakluea, auttapon pomsathit, Sirilak Areerachakul and aekkarat Iorpichian | |
| 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 Lattice Filter | 1970 |
| | 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 |
| | Tae-Bum Kwon, Jae-Bok Song and Sung-Chul Kang | |
| SA03-3 | Symmetrical model based SLAM [M-SLAM] for a quick map-search | 1993 |
| | Jung-Suk Oh and Kwee-Bo Sim | |
| SA03-4 | Hierarchical Optimal Time Path Planning Method for a Autonomous Mobile | 1997 |
| | 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 Method | 2024 |
| | 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 objct'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 task for virtual sources displayed in the median plane | 2055 |
| | 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 Growing Method | 2090 |
| | 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 |

| | | |
|--------|---|------|
| SA09-3 | Dae-Yeon Won, Min-Jea Tahk and Kwang-Yeon Kim Decentralized Phase Angle Control for Standoff Tracking using Multiple Unmanned Aircraft | 2124 |
| SA09-4 | Seungho Yoon and Youdan Kim Two distributed guidance approaches for rendezvous of multiple agents | 2128 |
| SA09-5 | Jaemann Park, Je Hyun Yoo and H. Jin Kim Range Tracking Filter Using Measurements with Uncertain Delays | 2133 |
| SA09-6 | Ick-Ho Whang, SUNGJIN CHO and Dong-Kyun Choe 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 for Research | 2170 |
| | Manish Patil | |

SP01 : PID Controllers

| | | |
|--------|--|------|
| SP01-1 | Composite PD and Fuzzy Logic Approach for Vibration Control of Elastic Joint Manipulator | 2175 |
| | Mohd Ashraf Ahmad, Raja Mohd Taufika Raja Ismail, Mohd Syakirin Ramli, Mohd Anwar Zawawi and Mohd Helmi Suid | |
| SP01-2 | Discrete Robust PIDx(n-2) Stage PD Cascade Controller | 2181 |
| | Pittaya Pannil, Prachaya Achariyapagon and Thanit Trisuwannawat | |
| SP01-3 | Calculation of PI Controller Stable Region Based on D-Partition Method | 2185 |
| | Jinggong Liu, Yali Xue and Donghai Li | |
| SP01-4 | DISCRETE TIME INTEGRAL SERVO WITH PID x (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS | 2190 |
| | Pittaya Pannil, Patsamol Chotechuangchutchawa and Thanit Trisuwannawat | |
| SP01-5 | DDE-based PI Controller and its Application to Gasifier Temperature Control | 2194 |
| | Yali Xue, Donghai Li and Jinggong Liu | |

SP02 : Communication Systems II

| | | |
|--------|---|------|
| SP02-1 | Design of CPW Wide Slot Antenna with Tuning Stub for Wideband Applications | 2198 |
| | Tuanjai Archevapanich | |
| SP02-2 | Modification of Data transmission Filter with Generalized Bessel Transformation | 2202 |
| | Virote Pairajanchai, Vanvisa Chutchavong and Kanok Janchitrapongvej | |
| SP02-3 | Trapezoid-Stub Fed Rectangular Slot Antenna for WLAN and WiMAX Applications | 2206 |
| | Napop Arsusiri, ornlarp Sangaroon, Sutheera Puntheeranurak and Noppin Anantrasirichai | |
| SP02-4 | A Study on Tuning-Stub of Slot Antenna for Ultra-Wideband Applications | 2210 |

| | | |
|--------|--|------|
| SP02-5 | Napop Arsusiri, Ornlarp sangaroon, Sutheera Puntheeranurak and Noppin Anantrasirichai Improvement Microstrip Patch Antenna for Ultra-Wideband by C-Shaped Wide Slot | 2214 |
| | Sutham Saththamsakul, 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 |
| | Hiroshi Mizumoto | |
| SP05-2 | The Implementation of Hydraulics System and Solar Energy in The Tennis Balls Collecting Machine | 2265 |
| | nanthawan am-eam | |
| SP05-3 | AFM as a Robot for Automated Nanohandling | 2271 |
| | Florian Krohs, Sergej Fatikow, Malte Bartenwerfer, Uwe Mick, Florian Niewiera and Michael Weigel-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 |
| | Haeil Hyun, Jonghyun Park, Yunchan Cho and Jae Wook Jeon | |
| SP06-3 | Motion Classification using IMU for Human-Robot Interaction | 2295 |
| | Kawroong Saktaweekulkit and Thavida Maneewarn | |
| SP06-4 | Compact Robot Face with Simple Mechanical Components | 2300 |
| | Yoshihiko Takahashi and Hayato Sato | |
| 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 : [OS] Computer Vision Applications to Robotics and Machine Learning

| | | |
|--------|---|------|
| 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 Teeratom 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 | |

SP08 : [OS] 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 Surveillance UAVs with Timing Constrains | 2371 |

| | | |
|--------|--|------|
| SP09-5 | Chan-Wook Lim, Chang-Kyung Ryoo, Keeyoung Choi, Sanghyuk Park and Jung-Hee Cho 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 |
| | Sei Takahashi, Hideo Nakamura and Hitoshi Tsunashima | |
| SE04-3 | Medical Image Processing and Analysis for Nuclear Medicine Diagnosis | 2448 |

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 - Design and Implementation - | 2467 |
| | 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 Education | 2485 |
| | 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 |
| | Kyung Joon Han, Byung Joon Ahn and Sung Lim Ko | |
| SE07-2 | Compensation of Machine Directional Register in a Multi-layer Roll-to-Roll Printed Electronics | 2494 |
| | HyunKyoo Kang, Kee-Hyun Shin and Chang-Woo Lee | |
| SE07-3 | Analysis of Ink Transfer Process for R2R Printing Applications with Non-Newtonian Ink Property | 2498 |
| | Kyunghun Kim, Taewon Nam and Yang Na | |
| SE07-4 | Fuzzy Control of the Lateral Position of Web Using a Steering Guide | 2502 |
| | SANGYOON LEE and Nguyen Hoang | |

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 Background. | 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, Sudaek Kim, Jungmin Kim and Sungshin Kim | |
| SE08-5 | Stochastic Observer Based H Control of Networked Control Systems with Packet Dropouts | 2524 |

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 | |