

2013 13th International Conference on Control, Automaton and Systems

(ICCAS 2013)

**Gwangju, South Korea
20 – 30 October 2013**

Pages 1-904



**IEEE Catalog Number: CFP1310D-POD
ISBN: 978-1-4799-0549-2**

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| | Byoungkyun Kim, Wnag-Heon Lee, Eui-Chol Lee, Byuhng-Munn Suhng and Dong-Yeon Ryu | |
| MC07-4 | Extrinsic Calibration of Rotating Laser Range Finder using Scene Structure | 701 |
| | Jong-Eun Ha, Dong-Whan Kim and Hee-Sung Kim | |
| MC07-5 | Global thresholding algorithm based on boundary selection | 704 |
| | Jin-won Jang, Sewon Lee, Hee-Jung Hwang and Kwang-Ryul Baek | |

MC08 : [OS] RF-Based Localization/Positioning

| | | |
|--------|---|-----|
| MC08-1 | A Robust Indoor Positioning System using Two-Stage EKF SLAM for First Responders in an Emergency Environment | 707 |
| | Gong Bo Moon, Sebum Chun, Moon-Beom Hur and Gyu-In Jee | |
| MC08-2 | GPR based Wi-Fi radio map construction from real/virtual indoor dynamic surveying data | 712 |
| | Youngsu Cho, Jooyoung Kim, Myungin Ji, Yangkoo Lee and Sangjoon Park | |
| MC08-3 | Fingerprint DB Generating System Exploiting PDR based Dynamic Collection for Indoor Localization of Smart-phone Users | 715 |
| | Jooyoung Kim, Myungin Ji, Youngsu Cho, Yangkoo Lee and Sangjoon Park | |
| MC08-4 | Development of Cellular Data Network Enabled Autonomous Rotary UAV | 719 |
| | Sangkyung Sung and Byungjin Lee | |
| MC08-5 | Estimation of Relative Ionospheric Delay By GNSS Algorithm for Accuracy and Safety | 723 |

TA01 : Identification and Estimation of Control

| | | |
|--------|--|-----|
| TA01-1 | Design of Dry Dual Clutch Transmission Actuator Controller for Simultaneous Kissing Point Identification Using Multiple Sliding Surfaces | 726 |
| | Jiwon Oh and Seibum B. Choi | |
| TA01-2 | A Direct Tuning from Input/Output Data of the Youla Parameter in Consideration of Some Deviated Plants | 733 |
| | Ken Sakakibara, Kazuhiro Yubai, Daisuke Yashiro and Junji Hirai | |
| TA01-3 | Gaussian Distribution Resampling Algorithm of Particle Filter | 738 |
| | HyunDuck Choi and MyoTaeg Lim | |
| TA01-4 | Comparison of Subspace-based System Identification Techniques | 741 |
| | Young Man Kim | |
| TA01-5 | Sliding Mode Observer for Vehicle States Estimation | 747 |
| | Chang Mook Kang, Bo-Ah Kim, Seung-Hi Lee and Chung Choo Chung | |
| TA01-6 | An IMM-Based Method for Reentry-Phase Tracking of Unknown Ballistic Missiles | 751 |
| | Sang Hyeon Kim and Han Lim Choi | |

TA02 : Linear/Nonlinear Control II

| | | |
|--------|---|-----|
| TA02-1 | A Simple Noise Reduction Disturbance Observer and Q-filter Design for Internal Stability | 755 |
| | Jerome Han, Hongkeun Kim, Youngjun Joo, Nam Hoon Jo and Jin Heon Seo | |
| TA02-2 | Thrust-Vector Control of a Three-Axis Stabilized Spacecraft with Fuel Slosh Dynamics | 761 |
| | Jaime Rubio Hervas, Mahmut Reyhanoglu and Hui Tang | |
| TA02-3 | Sliding mode control based on singular perturbation theory for position tracking of permanent magnet stepper motors | 767 |
| | Seungchul Shin, Donghoon Shin, Youngwoo Lee and Chung Choo Chung | |
| TA02-4 | Delay-dependent H^∞ control for linear systems with a time-delay and interval randomly varying disturbances | 771 |
| | Kihoon Kim, Myeongjin Park and Ohmin Kwon | |
| TA02-5 | Observer-Based Nonlinear Control of Slosh in Liquid Container Transfer via a PPR Robot | 777 |
| | Jaime Rubio Hervas and Mahmut Reyhanoglu | |

TA03 : Automotive Systems

| | | |
|--------|---|-----|
| TA03-1 | Adaptive Control of Autonomous Bicycle Kinematics | 783 |
| | Omar Al-Buraiki | |
| TA03-2 | Project Based Learning using Natural Energy Powered Small Electric Vehicle for Sustainable Technology Education | 788 |
| | Yoshihiko Takahashi and Kazufumi Uda | |
| TA03-3 | Robust semi-autonomous vehicle control for roadway departure and obstacle avoidance | 794 |
| | Changchun Liu, Jun Zheng and Jiluan Pan | |
| TA03-4 | Design and Evaluation of Hi-CAST and its Variants for Safety Message Dissemination in VANET | 800 |
| | Ihn-Han Bae | |

TA04 : [OS] Applications in Surgical Environments

| | | |
|--------|--|-----|
| TA04-1 | Surgery Scheduling in the Perioperative Planning: A preliminary study of a surgical readiness in a general hospital in South Korea | 807 |
|--------|--|-----|

| | | |
|--------|---|-----|
| | Lisa Wiyartanti, Myon Woong Park , Choon Hak Lim and Gyu Hyun Kwon | |
| TA04-2 | Laparoscopic Interaction Learning Model: Decomposing Expert Surgeon Knowledge to Develop Novice Surgeon Knowledge Comprehension | 812 |
| | Nurmaya . , Lisa Wiyartanti and Gyu Hyun Kwon | |
| TA04-3 | Image-guided Handheld HIFU Treatment System based on Real-Time Tracking of Ultrasound Imaging Probe and HIFU Probe | 818 |
| | Kyusic Park and Deukhee Lee | |
| TA04-4 | A Phantom Study on the Propagation of NIR Rays under the Skin for Designing a Novel Vein-Visualizing Device | 821 |
| | Sangjun Lee, Sehyung Park and Deukhee Lee | |
| TA04-5 | A New Method for Robotic calibration of HIFU Transducer | 824 |
| | Oh rum Cha, Sung-Hwan Lim and Deukhee Lee | |

TA05 : [OS] Robotics for Human Environment

| | | |
|--------|--|-----|
| TA05-1 | Audio-Visual Attention Control of a Pan-Tilt Telepresence Robot | 827 |
| | Keng Peng Tee, Rui Yan, Yuanwei Chua and Zhiyong Huang | |
| TA05-2 | Continuous Critic Learning for Robot Control in Physical Human-Robot Interaction | 833 |
| | Chen Wang, Yanan Li, Shuzhi Sam Ge, Keng Peng Tee and Tong Heng Lee | |
| TA05-3 | Automated Door Opening Scheme for Non-holonomic Mobile Manipulator | 839 |
| | Albertus Hendrawan Adiwahono, Yuanwei Chua, Keng Peng Tee and Bingbing Liu | |
| TA05-4 | A User Study of Web-based Teleoperation Robot, TeleBot | 845 |
| | Dilip Limbu, Hong Yee Alvin Wong , Yuanwei Chua , Albertus Hendrawan Adiwahono, Tran Anh Dung and Boon Siew Han | |
| TA05-5 | Shared Teleoperation of a Vehicle with a Virtual Driving Interface | 851 |
| | Jaeseok Kim and Jee-Hwan Ryu | |
| TA05-6 | Implementing Selective Attention using Canonical Correlation Analysis-based Auditory Steady State Response | 858 |
| | Seung-Min Park and Kwee-Bo Sim | |

TA06 : Robot Mechanism and Control I

| | | |
|--------|---|-----|
| TA06-1 | Error Compensation for a 2 DOF Bendable Endoscope Mechanism | 862 |
| | Hyun-Soo Yoon, Jiun Jeon, Jae Heon Chung and Byung-Ju Yi | |
| TA06-2 | A mechanism design of waist power assist suit for a caregiver by using torsion springs | 866 |
| | Mitsuhiro Tsuzura, Takashi Nakakuki and Daigo Misaki | |
| TA06-3 | Mechanism of One-Legged Jumping Robot With Artificial Musculoskeletal System | 869 |
| | Hideki Iijima, Keisuke Sayama, Hiroyuki Masuta, Atuo Takanishi and Hun-ok Lim | |
| TA06-4 | Conceptual Design of a New Stair-Climbing Mobile Platform Using a Hybrid Link Mechanism | 875 |
| | Heeseung Hong, Jangho Bae, Jongwon Kim and Hwa Soo Kim | |
| TA06-5 | Four-cable-driven parallel robot | N/A |
| | XueJun Jin, Dae Ik Jun, Andreas Pott, Sukho Park, Jong-Oh Park and Seong Young Ko | |

TA07 : [OS] Biomimetic Underwater Robots

| | | |
|--------|--|-----|
| TA07-1 | Adaptive MAC Scheme using Queue Information for Underwater Environmental Monitoring System | 884 |
| | Nam-Yeol Yun, Ji-Eon Kim, Soo-Young Shin, Jin-Young Lee, Soo-Hyun Park and Changhwa Kim | |
| TA07-2 | Numerical Simulation for Biomimetic Robot Fish | 890 |
| | Ji Eun Lee, Hoon Chae Park, Hang Seok Choi, Jinho Kyung, Dongwon Yun, Sanghyun Jeong and Youngsun Ryu | |

| | | |
|--------|--|-----|
| TA07-3 | Design of High Speed Robotic Fish 'ICHTHUS V5.6' Gi-Hun Yang and Youngsun Ryuh | 894 |
| TA07-4 | Development of Turbidity Sensor Modules and Benchmark Testing from Biomimetic Underwater Robots Joongki Park, Juchan Sohn, Gipyung Han and Kwangro Park | 897 |
| TA07-5 | Stabilizing the Head Motion of a Robotic Dolphin with Varying the Stiffness of a Caudal fin Yong-Jai Park and Kyu-Jin Cho | 901 |

TA08 : Service and Field Robots

| | | |
|--------|---|-----|
| TA08-1 | Human Computer Interface Using the Recognized Finger Parts of Hand Depth Silhouette via Random Forests Dinh Dong Luong, Sungyoung Lee and Tae-Seong Kim | 905 |
| TA08-2 | Stability Control and Pattern Generation for Biped Humanoid Robot Yuki Kamogawa, Kouhei Yamada, Hiroyuki Masuta and Hun-ok Lim | 910 |
| TA08-3 | Design and Evaluation of a Fracture-type Protector for a Small Launching Reconnaissance Robot Bong-Soo Kang and Yeon-Woo Jung | 916 |
| TA08-4 | Development of Gliding Locomotion Robot by Single Servo Motor Yasuhiro Fuwa and Takashi Takimoto | 920 |
| TA08-5 | Development of spiral driven type mobile robot for the NDT inspection in small pipes of thermal power plants. Yeong-geol Bae, seungho kim, Chang Hoi Kim and saeyoung Jung | 924 |
| TA08-6 | An online complete coverage approach for a team of robots in unknown environments Hoang Huu Viet, SeungYoon Choi and TaeChoong Chung | 929 |

TA09 : [OS] Advances in Sensing and Control of Assistive Robotic Systems

| | | |
|--------|---|-----|
| TA09-1 | Force Controlled Robot Gripper with Flexible Joint for Delicate Assembly Task Chwan Hsen Chen | 935 |
| TA09-2 | Intelligent Adaptive Motion Control for Uncertain Seatless Electric Unicycles Ching-Chih Tsai and Hong-Seng Yap | 940 |
| TA09-3 | Semantic Recognition of Human Gestures Based on Spatial and Temporal Reasoning Hsien-I Lin, Wei-Kai Chen, C. N. Huang and H. W. Wang | 946 |
| TA09-4 | Image Tracking of Laparoscopic Instrument using Spiking Neural Networks Kai-Tai Song, Chun-Ju Chen and Wayne Shin-Wei Huang | 951 |
| TA09-5 | Determine the robot assistive forces based on human intent estimation in bone cutting applications Ping-Lang Yen and shang-wei hsu | 956 |
| TA09-6 | Human-Oriented Recognition for Intelligent Interactive Office Robot Li-Chen Fu and Yu-Chi Lin | 960 |

TB01 : Adaptive/Robust Control

| | | |
|--------|---|-----|
| TB01-1 | Design of a PID Controller based on H^∞ Loop Shaping Method using Frequency Responses Akihiro Doi, Kazuhiro Yubai, Daisuke Yashiro and Junji Hirai | 966 |
| TB01-2 | Design of Multivariable Fixed-structural Controller Satisfying Performance Constraint on Nyquist Diagram Using Frequency Responses Kazuki Senga, Kazuhiro Yubai, Daisuke Yashiro and Junji Hirai | 970 |
| TB01-3 | A Switching Control Strategy for Nonlinear Systems Under Uncertainty Jong Min Lee and Yu Yang | 976 |

| | | |
|--------|---|-----|
| TB01-4 | Vibration Control of Active Electromagnetic Levitation System with Three-Dimensional Position Estimation by Current and Magnetic Flux Yoshimitsu Kobayashi, Yoko Terai and Minoru Sasaki | 981 |
|--------|---|-----|

TB02 : Linear/Nonlinear Modeling

| | | |
|--------|---|------|
| TB02-1 | Probabilistically Robust Model Predictive Control Young Man Kim | 987 |
| TB02-2 | Modelling and Control of Unmanned Flying Boat with Sensor Offsets Takumi Fukuda and Takashi Takimoto | 991 |
| TB02-3 | Quantitative Measures of Controllability for Descriptor systems Haemin Lee and Youngjin Park | 996 |
| TB02-4 | Design of Nonsingular Terminal Sliding Mode Controller for DC Motor Systems Bo-Ram Kim, Kang-Bak Park and Ji Wung Jeong | 999 |
| TB02-5 | Dynamic response of an under-water fuel transfer system Muhammad Umer Hameed Shah and Keum-Shik Hong | 1003 |
| TB02-6 | On the Nonlinear Modeling of Systems with Higher-Order Nonholonomic Constraints Jaime Rubio Hervas and Mahmut Reyhanoglu | 1009 |

TB03 : [OS] Intelligent Control and Measurement System for Marine Vessel I

| | | |
|--------|---|------|
| TB03-1 | Monocular 3D Palm Posture Estimation Based on Feature-Points Robust against Finger Motion Yoshiaki Mizuchi, Yoshinobu Hagiwara, Akimasa Suzuki, Hiroki Imamura and Yongwoon Choi | 1014 |
| TB03-2 | Distance Measurement System using Stereo Camera for Automatic Ship Control Tadashi Ogura, Yoshinobu Hagiwara, Youngbok Kim, Akimasa Suzuki, Yongwoon Choi and Kazuhiro Watanabe | 1020 |
| TB03-3 | Experimental Approach for Mooring Winch Control System Design Sang-Won Ji and Young-Bok Kim | 1025 |
| TB03-4 | Effectiveness Evaluation of View Based Navigation for Obstacle Avoidance Yoshinobu Hagiwara | 1029 |
| TB03-5 | A Solution for Contrstrained Control Allocation Problem by Using Multi-parametric Quadratic Programming Algorithm Bui Van Phuoc and Kim Young Bok | 1034 |

TB04 : Biorobotics and Medical Robots

| | | |
|--------|---|------|
| TB04-1 | Model Predictive Energy-Bounding Approach for the perception of Multiple Degree-of-Freedom objects in bilateral teleoperation with online Geometry and Parameter of Remote Environment: A Feasibility Te RIAZ UDDIN, Sangsoo Park, Sangyun Baek and Jeha Ryu | 1039 |
| TB04-2 | Gravity Compensation of a Force/Torque Sensor for a Bone Fracture Reduction System Woo Young Kim, SangHoon Han, Sukho Park, Jong-Oh Park and Seong Young Ko | N/A |
| TB04-3 | Prototyping the Flexible Solenoid-Coil Artificial Muscle. for Exoskeletal Robots Asuka Takai, Nouf Alanizi, Kazuo Kiguchi and Thrishantha Nanayakkara | 1046 |
| TB04-4 | Conceptual Design of a Robotic Patient Positioning System for Heavy Ion Therapy Hongseok Choi, Xuejun Jin, Lephon Hung, Yong Kyun Park, Wongyun Jung, Sukho Park, Seong Young Ko and Jong-Oh Park | N/A |
| TB04-5 | The rehabilitation system of finger joints Hsi-Chuan Huang, Jih-Cian Siao and Guan-Ying Chen | 1055 |
| TB04-6 | Toward 2D-3D Registration for Fractured Bone Reduction Surgery: A Chamfer Distance Matching | N/A |

Approach

SangHoon Han, Sukho Park, Jong-Oh Park and Seong Young Ko

TB05 : Human-Robot Interaction I

| | | |
|--------|--|------|
| TB05-1 | Vibrotactile Cues Using Tactile Illusion for Motion Guidance | 1064 |
| | Yeonsub Jin, Hanyong Chun, Gi-Hun Yang, Euntai Kim and Sungchul Kang | |
| TB05-2 | Power-Assist Transportation Based on Virtual Impedance Control for Self-balancing Robotic Cart | 1068 |
| | seonghee Jeong and Taisei Hayashi | |
| TB05-3 | Fuzzy based Emotion Generation Mechanism for an Emoticon robot | 1073 |
| | Napha Daosodsai and Thavida Maneewan | |
| TB05-4 | Preliminary evaluation of multi-vibration haptic feedback on a steering wheel spinner | 1079 |
| | Sunyoung Oh and Jeha Ryu | |
| TB05-5 | Development of the Support System for Manual Operations of a Multi-rotor helicopter | 1083 |
| | Masanori Tsuzaki and Takashi Takimoto | |
| TB05-6 | A Scheduling for Periodic Robot Software Components | 1087 |
| | Liudmila Kan, Mi-sook Kim, Jeong Seok Kang and Hong Seong Park | |

TB06 : Robot Mechanism and Control II

| | | |
|--------|--|------|
| TB06-1 | Development of Throw Type Automatic Photographing Device | 1090 |
| | Sho Katayama and Takashi Takimoto | |
| TB06-2 | Path planning of multiple robots using concurrent algorithm with shared cycles | 1094 |
| | Gwang Tae Kim, Hyun-Wook Jo and Jong-Tae Lim | |
| TB06-3 | Definition of Linearly Dependent Screws in Singularity Configurations of Parallel Mechanisms and Experimental based on Computing of the System | 1100 |
| | Le Hoai Quoc and Nguyen Minh Thanh | |
| TB06-4 | Slippage Detection and Pose Recovery for Upward-Looking Camera-Based SLAM Using Optical Flow | 1108 |
| | Heewon Chae and Jae-Bok Song | |
| TB06-5 | 3D Point Cloud Map Construction Based on Line Segments with Two Mutually Perpendicular Laser Sensors | 1114 |
| | Rui-Jun Yan | |
| TB06-6 | Three Dimensional Locomotion Control of Single-Legged Robot | 1117 |
| | Tae Hun Kang and Jeon Il Moon | |

TB07 : Robot Vision

| | | |
|--------|--|------|
| TB07-1 | Optical flow estimation method to determine compensation by multi resolution of hierarchical structure | 1123 |
| | Takeshi Tsusue, Teruo Yamaguchi and Hiroshi Harada | |
| TB07-2 | Hardware Design and Implementation of Disparity Image Post-processing for Noise Reduction by Standard Deviation | 1128 |
| | Yongwoon Ji, SangJun Lee and Jae wook Jeon | |
| TB07-3 | Human Behavior Recognition System Based on 3-dimensional Clustering | 1133 |
| | MAIERDAN MAIMAITIMIN, Keigo Watanabe and Maeyama Shoichi | |
| TB07-4 | Real-time correction system for improving the disparity image | 1138 |
| | Song Sunmin, Lee SangJun and Jae wook Jeon | |
| TB07-5 | Implementation of An Image-based Visual Servoing Structure in Contour Following of Objects with Unknown Geometric Models | 1143 |

TB08 : [OS] Smart Mobile Robot

| | | |
|--------|--|------|
| TB08-1 | Technology Trend of Smart Mobile Robot Kyoung Taik Park and Doo Hyung Kim | 1149 |
| TB08-2 | Study on Development of Easy Operating System for Field Robot in Virtual Reality Environment Quang Hoan Le, Kyoung Taik Park and Soon Yong Yang | 1152 |
| TB08-3 | The Energy Stability Margin for Tracked Vehicle mounted Manipulator Chi Thanh Nguyen, Joo-Hyun Ko, Hyun-Cheol Kim and Soon-Yong Yang | 1156 |
| TB08-4 | Development Platform for the three-wheeled electric vehicle Unmanned Young-hyeon Lee, Young-man Jeong, Chan-se Jeong, Kyoung-Taek Park and Soon-yong Yang | 1160 |
| TB08-5 | Stereo AoA system for indoor SLAM Hee Joong Kim and Jihong Lee | 1164 |
| TB08-6 | Trajectory Tracking Control Of Omnidirectional Mobile Robot Using Sliding Mode Controller Pham Hung Kim Khanh and Nguyen Hung | 1170 |

TB09 : [OS] Micro/Nano Robotics

| | | |
|--------|---|-----|
| TB09-1 | 3D Helical Motion of Capsule Endoscope Microrobot using Electromagnetic Actuation System Cheong Lee, Sukho Park, Hyunchul Choi, Semi Jeong, Kiduk Kwon, Gwangjun Go, Jong-oh Park, Seong Young Ko, Donghai Li and Zhen Jin | N/A |
| TB09-2 | Characteristics of Patterned Ferropaper Actuator based on Cellulose using Electromagnetic Actuation System Kisu Kim, Youngho Ko, Doyeon Hwang, Seong Young Ko, Jong-oh Park and Sukho Park | N/A |
| TB09-3 | A Microrobot for Manipulation of Micro-particles using an Electromagnetic Actuation (EMA) System GwangJun Go, Hyunchul Choi, Semi Jeong, Cheong Lee, Seong Young Ko, Jong-oh Park and Sukho Park | N/A |
| TB09-4 | Wireless Biomimetic Swimming Mini-Robots Using Electro-Magnetic Actuation (EMA) System Hyunchul Choi, Sukho Park, Semi Jeong, Cheong Lee, Gwangjun Go, Kiduk Kwon, SeongYoung Ko and Jong-Oh Park | N/A |

TIP : Interactive Poster Session II (15:40~16:30)

| | | |
|-------|---|------|
| TIP-1 | A Proposal on Support for Reading of Novels Using Question Answering Technology Satoru Okada and Tatsuya Arakawa | 1193 |
| TIP-2 | A Study on Output Sentence Generation Method for Question Answering Using Statistical Machine Translation Tessei Yamada and Tatsuya Arakawa | 1199 |
| TIP-3 | Bayesian Inference in Optical Measurement Due to Synthetic Aperture Radar Interferometry Yohei Saika, Hiroki Sakaematsu and Shota Akiyama | 1203 |
| TIP-4 | Probabilistic Inference of Environmental Factors Via Time Series Analysis Using Mean-Field Theory of Ising Model Atsushi Asami and Yohei Saika | 1209 |
| TIP-5 | Recognition of Gait Motion by Using Data Mining WOONG CHOI, Liang Li, Hiroyuki Sekiguchi and Kozaburo Hachimura | 1213 |
| TIP-6 | Replica Analysis of CDMA Multiuser-demodulator for Correlated Data Toshiaki Aida and Takuya Matsumoto | 1217 |
| TIP-7 | Interactive manipulation of 3D objects using Kinect for visualization tools in education Jaehong Lee, Hakil Kim, Heon Gu, Hyungchan Kim, Jungmin Kim and Hyoungrae Kim | 1220 |

| | | |
|--------|---|------|
| TIP-8 | Parameter Estimation Method for Coupled Tank System using Dual Extended Kalman Filter Jihoon Seung, kilto chong and Deokjin Lee | 1223 |
| TIP-9 | Scale-Invariant Isotropy of an Optical Mouse Array for Mobile Robot Velocity Estimation Sungbok Kim, Geunhyung Lim and Hyungjin Kim | 1229 |
| TIP-10 | Features Fusion with Adaptive Weights for Pedestrian Classification Junbo Zhao, Shuoshuo Chen, Weizi Liu and Xiaoxiao Chen | 1234 |
| TIP-11 | Evaluation of Vocabulary Trees for Localization in Robot Applications Soonmin Hwang, Chaehoon Park, Yukyung Choi, donggeun Yoo and In So Kweon | 1239 |
| TIP-12 | Map building and path generation for Indoor mobile robot Hyun Jun Ko and Jeong Hyeong Kim | 1243 |
| TIP-13 | Trotting Gait Analysis of a Lizard Using Motion Capture Chang-hoi Kim, Ho-cheol Shin and Heung-Ho Lee | 1247 |
| TIP-14 | Experimental Characterisation of a Biologically Inspired 3D Steering Needle Christopher Burrows, Riccardo Secoli and Ferdinando Rodriguez y Baena | 1252 |
| TIP-15 | Analysis of Domestic and International Development Trend for Horse Riding Simulator Keun-Chang Kwak and Yeong Hyeon Byeon | 1258 |
| TIP-16 | Dynamics Analysis and Optimal Control of a Marine Diesel Engine Toshihiko Nakatani, Takashi Miwa, Naohiro Yamatani, Keiji Sasaya, Daiki Okada, Taizo Kaneda, Emi Kanayama and Erika Ura | 1261 |
| TIP-17 | Self - Organizing Migrating Algorithm used to control a semi-batch chemical reactor David Novosad and Lubomír Macků | 1266 |
| TIP-18 | Performance Analysis of IMM-PDAF Method for Multiple Target Tracking in an Autonomous Emergency Braking Scenario Jeong-jae Yoo and Yeon-Sik Kang | N/A |
| TIP-19 | Motor Frequency Estimation by using Instrumental Variable method Yong Hwi Kim, Ka Hyung Choi, Tae Sung Yoon and Jin Bae Park | 1274 |
| TIP-20 | 24 GHz Doppler Radar Sensor for Robotic Applications Hyun-Seung LEE, Eun-Gyu Lee, Ji-Hoon Kim, Hyongho Ko and Choul-Young Kim | 1277 |
| TIP-21 | Localization of the Impedance Discontinuities for Nuclear Control Cable Using Instantaneous Frequency Estimation Seung Jin Chang, Jin Bae Park, Yong June Shin and Yoon Ho Choi | 1280 |
| TIP-22 | Practical Direction of Arrival Estimator using Constrained Robust Kalman Filtering Seul-Ki Han, Won-Sang Ra and Jin Bae Park | 1284 |
| TIP-23 | Development of Smartphone-based Stethoscope System JI YUN SHIN, Sehi Lee, Dong Hyun Jo, Seong Yong Moon, Jin Ho Bae and Tae Soo Lee | 1288 |
| TIP-24 | Smartphone-based Pupillary Light Reflex Test System JI YUN SHIN, Dong Hyun Jo, Sehi Lee, Seong Yong Moon, Jin Ho Bae and Tae Soo Lee | 1292 |
| TIP-25 | Application of Aircraft Interval Management Concepts based on the Optimized Scheduling Algorithm Jae-Hoon Song | 1296 |
| TIP-26 | 3D Dynamics Analysis of a Golf Full Swing by Fusing Inertial Sensor and Vision data Nguyen Khoa Nam Cao, Young Soo Suh and Quoc Khanh Dang | 1300 |
| TIP-27 | The SoC Design for Voice Recognition with Adaptive Speedy Discriminate Algorithm In Jung Lee | 1304 |
| TIP-28 | Area-efficient RC Low Pass Filter using T-networked Resistors and Capacitance Multiplier Changho Seok, Kyomuk Lim, Jindeok Seo, Hyeunho Kim, Seunghyun Im, Hyoungho Ko, Ji-Hoon Kim and Choul-Young Kim | 1308 |
| TIP-29 | An Analog Front-end IC with Regulated R-I Amplifier and CDS CTIA for Microbolometer Jindeok Seo, Gyungtae Kim, Kyomuk Lim, Changho Seok, Hyeunho Kim, Seunghyun Im, Hyoungho Ko, Ji-Hoon Kim and Choul-Young Kim | 1312 |

| | | |
|--------|---|------|
| TIP-30 | An Effective Method for Corner Detection Jian Jiang and Bo Lin | 1316 |
| TIP-31 | Airflow Angle and Wind Estimation Using GPS/INS Navigation Data and Airspeed Am Cho, Young-shin Kang, Bum-jin Park and Chang-sun Yoo | 1321 |
| TIP-32 | Performance Verification of Korean Tilting-Train Experimental and Running-Time Estimation of its Imaginary Production Version on the Gyeongbu line Hag Lae Rho | 1325 |
| TIP-33 | Design of ATP functions and Communication Interface Specifications for Korean Radio-based Train Control System Sehchan Oh, Yongki Yoon, Kyunghee Kim and Yongkyu Kim | 1330 |
| TIP-34 | A Modeling and Attitude Control of Robot for Wind Turbines jinyoung kong, yeonsik kang, kyungchul han, jinseop song, kyungho sun and baekkyu cho | 1334 |
| TIP-35 | Fault Detection and Handling for Sensor and Communication Faults of an Automatic Valet Parking System Heejae Choi, Jimin Lee and Bongsob Song | 1338 |
| TIP-36 | Vehicle Recognition Based on Radar and Vision Sensor Fusion for Automatic Emergency Braking Heong-tae Kim and Bongsob Song | 1342 |
| TIP-37 | Auto-Guidance System for Tillage Tractor HeeChang Moon, Xiong-Zhe Han, HoonJe Woo, HakJin Kim, JungHun Kim, YoungJoo Kim and JoongEup Kye | 1347 |
| TIP-38 | Research of Vision System for Perception in UGV Kyung In Min, Jin-Beom Jeong, Jae-Saek Oh and Jung-ha Kim | 1351 |
| TIP-39 | A CA Model for Target Tracking in Distributed Mobile Wireless Sensor Network Sang-Ki Ko, Hwee Kim and Yo-Sub Han | 1356 |
| TIP-40 | Efficient Environmental Monitoring Using Cost-Aware Path Planning Junghun Suh | 1362 |
| TIP-41 | Serviceable Intelligent Agent for Ubiquitous Dong W Kim | 1366 |
| TIP-42 | A Robot system and Virtual Environment for Therapeutic Exercise in Upper Limb Rehabilitation: Virtual Environment Modeling Seungyeol Lee, Hyungjoon Sim and Jeon Il Moon | 1369 |
| TIP-43 | Intelligence detection of target zone by using cone-shaped laser beam Hyun Jun Ko and J. H. Kim | 1371 |

TC01 : [OS] Opto-mechatronics for Instrumentation

| | | |
|--------|--|------|
| TC01-1 | Ultraprecision machining based micro-hybrid lens fabrication for scanning device Dongyoon Yoo, Dong-Ho Lee and Sun-Kyu Lee | 1374 |
| TC01-2 | Development of a three-dimensional vibration measurement system Dongkyu Kim and Kyihwan Park | 1378 |
| TC01-3 | Characteristic Analysis and Improvement of VCM/PZT Driven XY Nanostage for Atomic Force Microscope Jiseong Jeong, Junhyun Jo and Kyihwan Park | 1381 |
| TC01-4 | A High-Resolution Laser Beam Collimator System for a High-Density Ternary Barcode Detection System Hiroo Wakaumi | 1384 |
| TC01-5 | Study on Laser Hybrid Welding Process Monitoring Heeshin Kang and Jiwhan Noh | 1388 |

TC02 : [OS] Recent Advances in Chemical Process Control

| | | |
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| TC02-1 | IMC Based PI/PID Controller Tuning Rule for Time Delay Processes Mohammad Shamsuzzoha | 1391 |
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| TC02-3 | Web Cam for Easy-Monitoring of the Growth of Organisms younghoon Na, sin Kim and jietae Lee | 1400 |
| TC02-4 | NEW REMOTE OPERATION AND MAINTENANCE SYSTEM FOR OFFSHORE PLATFORM APPLICATION Prachaya Achariyapagon, Smornchai Khoonrak, Damnoen Ketpetch and Sittinon Kongsontana | 1403 |
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| TC07-2 | Development of bacteria-encapsulated alginate microbead using microfluidic channel and airflow nozzle Yu Kyung Lee, Sung Jun Park, Sunghoon Cho, Yeonkyung Lee, Seong Young Ko, Jong-Oh Park and Sukho Park | N/A |
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| WB03-4 | A Time-Delayed Control Method for Robust Balancing Performance of a Two-Wheel Mobile Robot Seul Jung | 1769 |
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| WB04-2 | A Method of Using Open-loop and Adaptive Control for reducing MRI Noise Nokhaeng Lee and Youngjin Park | 1781 |
| WB04-3 | Development of a System for Measurement of Postural Bias in Sitting JIYONG JUNG, INSIK PARK, YONGGWAN WON and JUNGJA KIM | 1784 |
| WB04-4 | Design and Analysis of a 6-DOF Force/Torque Sensor for Human Gait Analysis CHAO YUAN and Chang-Soo Han | 1788 |

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| WB05-2 | Static Balancer for the Rectilinear Motion Changhyun Cho | 1799 |
| WB05-3 | Proposition of Reconfigurable Wall Climbing Robot Using 6DOF Force Torque Sensor Based on Flexible Structure for Real Environment Woosub Lee | 1802 |
| WB05-4 | A Proposal Idea for a non-Active Variable stiffness Spring-Clutch Jushin Seok, Dong-Eun Choi, Changhyun Cho and Sungchul Kang | 1807 |
| WB05-5 | Development of a Safe Manipulator using Spring-Clutches SeongHun Hong, Junho Choi, Woosub Lee, Sungchul Kang and Hyeongcheol Lee | 1811 |

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| WB06-1 | Cooling control based on model predictive control using temperature information of IT equipment for modular data center utilizing fresh-air Masatoshi Ogawa, Hiroshi Endo, Hiroyuki Fukuda, Hiroyoshi Kodama, Toshio Sugimoto, Takeshi Horie, Tsugito Maruyama and Masao Kondo | 1815 |
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| WB06-3 | Lp-Norm-Based All-Pass System Design with Improved Convergence and Robustness Wei Qin and Noboru Ito | 1825 |
| WB06-4 | Modelling and Control of Double Generator Type Wind Turbine (DGWT) kooksun Lee, Seung-wook Kim, Juhoon Back, Ick Choy and Whang Cho | 1830 |
| WB06-5 | Economic Dispatch for Wind Farm Using Model Predictive Control Method Yonghao Gui, Chunghun Kim and Chung Choo Chung | 1836 |

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| WB07-1 | Analysis of Adaptive Control Using On-line Neural Networks for a Quadrotor UAV | 1840 |
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| | Byung-Yoon Lee, Hae-In Lee and Min-Jea Tahk | |
| WB07-2 | Simultaneous Task Assignment and Path Planning Using Mixed-Integer Seil An and H.Jin Kim | 1845 |
| WB07-3 | Mode Changing Tracker for Ground Tracking on Aerial images from UAVs Jeon Byoung il, Baek Kwangyul, Kim Chanho and Bang Hyochoong | 1849 |
| WB07-4 | Sea Wave Modeling and Shipboard Landing Simulation of Tilt Rotor Unmanned Aerial Vehicle Changsun Yoo, Am Cho, Bumjin Park and Youngshin Kang | 1854 |
| WB07-5 | PID based sliding mode controller design for the micro quadrotor Long Luong Tuan and Sangchul Won | 1860 |
| WB07-6 | Envelop Expansion Flight Test of Flight Control Systems for TR-60 Tilt-rotor UAV Youngshin Kang, Bumjin Park, Am Cho, Changsun Yoo and Seongwook Choi | 1866 |