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| FA10-5 | Detection of Dermis and Fascia on Skin Layers for Liposuction Surgery Robot using Texture and Geometric Information Sangha Song, Yo Kobayashi and Masakatsu G. Fujie | 1546 |
| FA10-6 | A Novel, Robust Method of Measuring IMT(intima-media thickness) Using Graph Cut and Snake Model in Ultrasound Imaging Jaeeun Seo and DeukHee Lee | 1552 |

FB01 : [OS] Rehabilitation Mechatronics

FB01-1 Effect on Exercise Instrument of Horseback Riding indoor for Basic Fitness Evaluation 1558

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| FB01-2 | Effect on Improvement of Muscle Strength Unbalance according to Load Deviation Pattern in Upper Limbs | 1562 |
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| | seung rok kang and Tae Kyu Kwon | |
| FB01-3 | Evaluation of Simplified Repeated Resistance Training System for Severe Hemiplegic Stroke Patient | 1566 |
| | Michito Yasukita, Yuki lida, Kazunori Yamazaki, Noritaka Sato, Yoshifumi Morita, Hiroyuki Ukai, Yoshiaki Takagi, Yoshitaka Aoki, Hirofumi Tanabe and Rumi Tanemura | |
| FB01-4 | Development of Anti-Gravity Control Model for Robot Gait Traing System | 1570 |
| | SungJae Kang, Hyunseok Cho, Seongyun Jung, GyoSeok Kim, JeiCheong Ryu and MunSeong Mun | |
| FB01-5 | Development of Knee Joint Robot for Students Becoming Therapists | 1573 |
| | Yoshie Maeda, Tatsuya Hirano, Noritaka Sato, Yoshifumi Morita, Hiroyuki Ukai, Kouji Sanaka, Keiko Takao and Ayako Satonaka | |
| FB01-6 | Design and Control of an Exoskeleton Device for Active Wrist Rehabilitation | 1577 |
| | Inhyuk Moon and Ju-hwan Bae | |

FB02 : PID Control

| FB02-1 | Synthesis of PD-type Anti-windup Compensators for LTI Systems with Asymmetric Input Saturation Yoshitaka Matsuda, Toshiki Haraguchi, Satoru Goto and Takenao Sugi | 1581 |
|--------|--|------|
| FB02-2 | Discrete-Time PIDA Controller Designed by Kitti's Method with Bilinear Transform Prapaisri La-orsri, Krit Smerpitak, Prapart Ukakimaparn and Thanit Trisuwannawat | 1585 |
| FB02-3 | Bilinear Discrete PID×(n-2) stage PD Cascade Controller for SISO Systems Krit Smerpitak, Prapart Ukakimaparn, Thanit Trisuwannawat and Prera Lavanprakai | 1591 |
| FB02-4 | PID controller with feedforward low pass filters for permanent magnet stepper motors Youngwoo Lee, Donghoon Shin, Wonhee Kim and Chungchoo Chung | 1597 |
| FB02-5 | DISCRETE TIME ROBUST INTEGRAL SERVO WITH PID \times (n-2)/2 STAGE PDA CONTROLLERS FOR UNSTABLE SYSTEMS | 1601 |
| | Prachaya Achariyapagon, Pittaya Pannil and Thanit Trisuwannawat | |
| FB02-6 | Proportional-Derivative (PD) controllers for Haptics subject to Distributed Time-Delays: A Geometrical Approach | 1605 |
| | Bogdan Liacu, Irinel-Constantin Morarescu, Silviu-Iulian Niculescu, Claude Andriot, Didier Dumur, Patrick Boucher and Frederic Colledani | |

FB03 : Linear/Nonlinear Control $\, \Pi \,$

| FB03-1 | A Design of H∞ Model-matching Multivariable Controller by Spectral Analysis using Model-free Controller Tuning | 1611 |
|--------|---|------|
| | Masataka Ishizaki, Kazuhiro Yubai and Junji Hirai | |
| FB03-2 | Boundary control of marine risers with bending couplings Tung Lam Nguyen, Khac Duc Do and Jie Pan | 1615 |
| FB03-3 | Control of a Spacecraft with Time-Varying Propellant Slosh Parameters Jaime Rubio Hervas and Mahmut Reyhanoglu | 1621 |
| FB03-4 | Orbital and Attitude Control of a Spacecraft Around an Asteroid Mahmut Reyhanoglu, Niloofar Kamran and Takahiro Kuhara | 1627 |
| FB03-5 | A Method of the Diagnosis through Descriptor Model of a Constrained Dynamic Motion of a Robot Gripper by the Indirect Measurement rai wung park and rai wung park | 1633 |
| FB03-6 | Silk dryer oven for a comunity with close-loop contol nitipong somchaiwong and Wirot Ponglangka | 1639 |

FB04 : [OS] Special Environmnet Localization and Navigation

| FB04-1 | Development of Autonomous Vehicle Control Algorithm Based on DGPS(RTK) and Test Vehicle Performance Verification | 1644 |
|--------|--|------|
| | Young-Geun Moon, Moon-sik Kim and Min-cheol Lee | |
| FB04-2 | Accurate Velocity Control based on the distance of a Mobile Robot and Obstacle using a Haptic Joystick | 1649 |
| | Dong Hyuk Lee, Kyung Wook Noh, Sook Hee Park and JangMyung Lee | |
| FB04-3 | Performance Improvement and Height Estimation of Pedestrian Dead-Reckoning System using a Low Cost MEMS Sensor | 1655 |
| | Yun-Ki Kim, Seung-hwan Choi, Hyun-Woo Kim and Jang-Myung Lee | |
| FB04-4 | Abrasion Diagnosis and Assessment of Marine engine Using the Wavelet Transform Hyunseop Lim, Jia-Jun Liu, Jong-ho Han and Jangmyung Lee | 1661 |
| FB04-5 | Path-Tracking Control of a Laser Guided Vehicle using Fuzzy Inference System Hajun Song, Jungmin Kim, EunKook Jung, Junha Lee and Sungsin Kim | 1666 |
| FB04-6 | Improvement of Travel Distance at the Outdoor Environment by using IMU and Encoder Kyoung-hwan Kim, Beom-seok Seo, Gun-woo Jeong and Jang-myung Lee | 1669 |

FB05 : [OS] Measurement, Control and Systems in the Steel Industry

| FB05-1 | Modeling of DC Electric Arc Furnace Using Chaos Theory and Neural Network Kyu-hwan Kim, Jae Jin Jung, Sang Jun Lee, Seokbae Moon and Sang Woo Kim | 1675 |
|--------|--|------|
| FB05-2 | Development of The Real Time Hardware-in-the-Loop Simulator for 5 Stand Cold Rolling Mill Young-il Kang, Sung-Hoon Choi, Gyoo-taek Lee and Sang-Chul Won | 1679 |
| FB05-3 | Automated Surface Inspection System for Black Resin Coated Steel ChangHyun Park, HoMoon Bae, JongPil Yun and SungWook Yun | 1683 |
| FB05-4 | Application S/W re-engineering approach in the steel plant to improve productivity efficiently Youngbok Park, Jinseok Yang, Jinhee Lee and Kyyoung Shin | 1686 |
| FB05-5 | Measurement of Mechanical Properties of High Strength Steel Sheets using Laser-Based ultrasonics | 1691 |
| | Choongsoo Lim and Hyeongjun Huh | |

FB06 : Bio-Systems and Control $\ I$

| FB06-1 | A Synthesis Method of Gene Regulatory Networks Having Cyclic Expression Pattern Sequences and Its Evaluation | 1694 |
|--------|--|------|
| | Yoshihiro Mori and Yasuaki Kuroe | |
| FB06-2 | Nano carriers based targeted drug delivery path planning using hybrid particle swarm optimizer and artificial magnetic fields | 1700 |
| | Syed Hassan and Jungwon Yoon | |
| FB06-3 | Hemodynamic Study for New Stent Design with Mesh-Typed Stents in a Cerebral Aneurysm Model using PIV | 1706 |
| | CHANG-HO YU, MAKOTO OHTA and TAE-KYU KWON | |
| FB06-4 | Biologically Inspired Grasp Primitives for a Dexterous Robotic Hand to Catch and Lift a Sphere John Lavery, Ben Kent and Erik Engeberg | 1710 |
| FB06-5 | Image-based Force Estimation of Deformable Tissue using Depth Map for Single-Port Surgical Robot | 1716 |
| | Seong Young Ko, Wooyoung Kim, Sungmin Seung, Hongseok Choi, Sukho Park and Jong-Oh Park | |
| FB06-6 | Design of Robotic Surgical Instrument for Minimally Invasive Surgical Robot System | 1720 |

Chul Sung Kim, Chang-Woo Park, Bong-Seok Kim, Jae-Bok Song and Jung-Hoon Hwang

FB07 : [OS] Navigation, Guidance, and Control $\, II \,$

| FB07-1 | A Terrain Referenced Precision Approach based on LiDAR for Lunar Landing Wonhee Lee, Young Min Yoo, Sun Min Lee and Chan Gook Park | 1724 |
|--------|--|------|
| FB07-2 | Vision-only UAV Navigation Aided by Terrain Elevation Map Yeongju Kim, Dongjin Lee and Hyochoong Bang | 1729 |
| FB07-3 | Integration of Terrain Rerenced Navigation System with INS using Kalman Filter Dongjin Lee, Hyochoong Bang and Cheonjoong Kim | 1734 |
| FB07-4 | Flight Test of Flight Control Performance for Airplane Mode of Smart UAV Youngshin Kang, Bumjin Park, Am Cho, Changsun Yoo and Samok Koo | 1738 |
| FB07-5 | Design of Self-Tuning Gain Depth Controller for an Autonomous Underwater Vehicle with Mass Shifter Mechanism Hyeungsik Choi | 1742 |
| FB07-6 | Design of Hovering Underwater Robotic Platform to Capture Harmful Marine Organisms TaeWon Seo, Jin Sangrok, Seokwoo Lee, Jihoon Kim and Jongwon Kim | 1747 |

FB08 : [OS] Medical Robotics and Simulation

| FB08-1 | Combined Kinematic Analysis of a Hybrid 7-DOF Rehabilitation Robot Hyun Soo Woo and Ohwon Kwon | 1752 |
|--------|--|------|
| FB08-2 | Multi-criteria Optimization of the 4 Links of an 8 DOF Haptic Master Device for a Surgical Robot Seung Gyu Kang, Hashim Iqbal and Doo Yong Lee | 1756 |
| FB08-3 | H∞ Control of Bilateral Telesurgical Systems with Communication Constraints Ayoung Hong, Jang Ho Cho and Doo Yong Lee | 1762 |
| FB08-4 | Affective Classification Using Bayesian Classifier and Supervised Learning Seong Youb Chung and Hyun Joong Yoon | 1768 |
| FB08-5 | Effects of Imperfect Communication Network on Haptic Teleoperator's Performance Hyoung II Son, Ayoung Hong, Heinrich H. Buelthoff and Dongjun Lee | 1772 |

FB09 : Power Systems

| FB09-1 | Building Power Management for Energy Saving: A Case Study of University Building Amphawan Julsereewong, Prasit Julsereewong and Satit Mangkalajan | 1778 |
|--------|---|------|
| FB09-2 | Model Predictive Control in Dynamic Economic Dispatch for Improving Grid Reliability Chung Hun Kim, Yonghao Gui, Young Ok Lee and Chung Choo Chung | 1783 |
| FB09-3 | Torque Control Methods for Wind Turbines and Their Responses Chae Wook Lim | 1788 |
| FB09-4 | Novel Unit Commitment Approach for Wind Farm Yonghao Gui, Chung Hun Kim, Young Ok Lee and Chung Choo Chung | 1791 |
| FB09-5 | Model Based PID Control Design for Bus Voltage Regulation in Multi-Machine Power Systems Seok-Kyoon Kim, Young II Lee, Hwachang Song and Jung-Su Kim | 1796 |
| FB09-6 | Comparison of Power Quality and Luminous Efficacy of Commercial Energy Saving Lamps in Thailand | 1800 |
| | nitipong somchaiwong, Ekkachai Chaidee and Prasan Ruchirasak | |

FB10 : [OS] Medical Imaging

| FB10-1 | Temporal Subtraction Method for Abdominal Contrast and Non-contrast Image Based on Image Matching Techniques | 1805 |
|--------|--|------|
| | Masashi Minashima, Syouhei Ogihara, Hyoungseop KIM, Joo Kooi TAN, Seiji ISHIKAWA, Seiichi MURAKAMI and Takatoshi AOKI | |
| FB10-2 | A Temporal Subtraction Method for Thoracic CT Images Using Non Rigid Warping Technique | 1809 |
| | Takumi Tokisa, Hyoungseop Kim, Joo Kooi Tan, Seiji Ishikawa, Young Lae Moon, Sung Ho Yoon and Wontae Kim | |
| FB10-3 | Classification of Lung Nodules on Temporal Subtraction Image Based on Statistical Features and Improvement of Segmentation Accuracy | 1814 |
| | Takahiro Miyajima, Takumi Tokisa, Shinya MAEDA, Hyoungseop Kim, Joo Kooi TAN, Seiji ISHIKAWA, Seiichi MURAKAMI and Takatoshi AOKI | |
| FB10-4 | Detection of Bone Regions on Legs from CTA Image Using Concentration Gradients Kodai Wada, Akiyoshi Yamamoto, Hyoungseop Kim, Joo Kooi TAN and Seiji ISHIKAWA | 1818 |

FC02 : Control Theory

| FC02-1 | A Continuous Canonical Form for Static Output Feedback in Linear System Ho-Chan Kim and Sin Kim | 1822 |
|--------|---|------|
| FC02-2 | Robust Stabilization of Approximately Feedback Linearizable Time-varying Systems with Uncertainties Using Singular Perturbation | 1828 |
| | Young-Jun Cho, Kyungin Kang, Min-Sung Koo and Jong-Tae Lim | |
| FC02-3 | Stability analysis of standard and non-standard nonlinear singularly perturbed system with uncertainty | 1833 |
| | Kyun-Sang Park, Hyun-Wook Jo and Jong-Tae Lim | |
| FC02-4 | Analysis of input-output characteristics of boundary value linear systems | 1838 |
| | Yoshiki Kagitani, Naoyuki Hara and Keiji Konishi | |
| FC02-5 | Damping Characteristics of the K-Polynomial | 1842 |
| | Young Chol Kim and Jinghua Wu | |
| FC02-6 | Observer Design for a Class of Nonlinear Delayed Systems with Unknown Inputs and Markovian Jump Parameters | 1848 |
| | Amir H. Abolmasoumi and Saleh S. Delshad | |

FC03 : [OS] Assistive, Rehabilitative and Medical System

| FC03-1 | Force Transmission in Joint-less Tendon Driven Wearable Robotic Hand Brian Byunghyun Kang, HyunKi In and Kyujin Cho | 1853 |
|--------|--|------|
| FC03-2 | A Novel Registration Method for Total Knee Arthroplasty Using a Patient-Specific Registration Guide | 1859 |
| | Taeho Jang and Kunwoo Lee | |
| FC03-3 | Development of Actuation System for Wearable Robots using Spiral Spring Yongtae Kim, Changyong Song and Jaeheung Park | 1863 |
| FC03-4 | Application of EEG for Multimodal Human-Machine Interface Jangwoo Park, Il Woo and Shinsuk Park | 1869 |
| FC03-5 | Power-Assisted Wheelchair with Gravity Compensation Soon-Wook Hwang, Chang-Hyuk Lee and Young-bong Bang | 1874 |

FC04 : [OS] ROBOTICS

| FC04-1 | An Intelligent Control of Mobile Robot Based on Voice Command | 1878 |
|--------|---|------|
| | Sung Hyun Han, Sung-Won Jung, Jong-Baem Won, Won-Jong Hwang and Chang-Jae Cho | |

| FC04-2 | A Real-Time Implementation of Walking Control for Humanoid Robot | 1882 |
|--------|---|------|
| | Sung Hyun Han, Ki-Won Sung, In-Man Park, Min-Sung Kim and Le Xuan Thu | |
| FC04-3 | A Study on Visual Servoing Control of Industrial Robot | 1886 |
| | Sung Hyun Han, Woo-Song Lee, Jae-Hong Eom, Jong-Dae Won and Nguyen Huu Cong | |
| FC04-4 | A Robust Grasping Control of Robot Hand with Four Fingers | 1891 |
| | Sung Hyun Han, Yoo Ki Cho, Eok-Gon Kim, Young-Ho Ha and Nguyen Huu Cong | |
| FC04-5 | A Study on Real-Time Implementation of Obstacle Avoidance for Autonomous Travelling Robot | 1896 |
| | Sung Hyun Han, Byoung Kyun Shim, Won-Jun Hwang, Kyung-Sun Choi and Le Xuan Thu | |

FC05 : [OS] Control and Sensing System Application to Ocean Vehicle

| FC05-1 | Nonlinear Observer and Sliding Mode Control Design for Dynamic Positioning of a Surface Vessel Bui Van Phuoc, Sang Won Ji, Kwang Hwan Choi and Young Bok KIM | 1900 |
|--------|---|------|
| FC05-2 | The H∞ Controller Design Including Control Allocation for Marine Vessel Sangwon JI, YoungBok KIM, JiHyun Jeong and JiSeong JANG | 1905 |
| FC05-3 | Improvement of Template Matching for Distance Measurement System Based on Image Sensors akio kita, yoshinobu hagiwara, yongwoon choi and Kazuhiro Watanabe | 1908 |
| FC05-4 | Development of a learning support system with PaPeRo Nozomi Fujiwara, Yoshinobu Hagiwara and Yongwoon Choi | 1912 |
| FC05-5 | Indoor Human Navigation System on Smartphones using View-Based Navigation Mitsuaki Nozawa, Yoshinobu Hagiwara and Yongwoon Choi | 1916 |
| FC05-6 | Analysis of Motion Response of Barge Ships in Regular Waves Lee Seung Chul, Kim Young Bok and Goo Ja Sam | 1920 |

FC06 : Bio-Systems and Control $\, {\rm I\hspace{-0.5mm}I}$

| FC06-1 | Biomimetic Swimming Mini-Robots Using Electro-Magnetic Actuation (EMA) System | 1923 |
|--------|--|------|
| | Sukho Park, Hyunchul Choi, Semi Jeong, Cheong Lee, Youngho Ko, Seong Young Ko and Jong- Oh Park | |
| FC06-2 | Adaptive Synergy Control for a Dexterous Artificial Hand Based on Grasped Object Orientation Nareen Karnati, Benjamin A. Kent and Erik Engeberg | 1927 |
| FC06-3 | Direction of Slip Detection For A Biomimetic Tactile Sensor Erik Engeberg, Morteza Vatani and Jae-Won Choi | 1933 |
| FC06-4 | Simple Structured Tactile Sensor for Tissue Recognition in Minimal Invasion Surgery Joon Ho Kwon, Daehie Hong and Jung-Hoon Hwang | 1938 |
| FC06-5 | Arm exoskeleton rehabilitation robot with assistive system for patient after stroke Guan-De Lee, Wei-Wen Wang, Kai-Wen Lee, Sheng-Yen Lin, Li-Chen Fu, Jin-Shin Lai, Wen- Shiang Chen and Jer-Junn Luh | 1943 |
| FC06-6 | Distributed Series Elastic Actuator: analysis and simulations Hamed Ali Yaghini Bonabi, Majid Nili Ahmadabadi and Fariba Bahrami | 1949 |

FC07 : Navigation, Guidance, and Control ${\rm III}$

| FC07-1 | Optimal Geometric Allocation of Ground Stations for Navigation Satellites | 1955 |
|--------|---|------|
| | Young Hoon Kim, Jin Young Suk, Young-Rock Kim, Sang-Young Park, Myeong-Jong Yu and Young-Bum Park | |
| FC07-2 | A Hybrid Differentiator for Strapdown Guidance System Jun-fang Fan, Zhong SU, Qing LI and Jiang WANG | 1960 |
| | Jun-rang Fan, Zhong SO, Qing Li and Jiang WANG | |
| FC07-3 | Development of driving support system for electric vehicle by using image processing technology | 1965 |

YUXIANG SUN, NAN WU, Shigeyuki TATENO and Harutoshi OGAI

| FC07-4 | Low-Thrust Guidance Scheme for the Spacecraft using B-plane Targeting and Lyapunov Feedback control | 1969 |
|--------|---|------|
| | Dong-Hyun Cho and Hyochoong Bang | |
| FC07-5 | Model Predictive Planning and Control of Rotary-wing Unmanned Aerial Vehicle Kwangjin Yang and Salah Sukkarieh | 1974 |
| FC07-6 | An Improved Method to Integrate Low-Cost Sensors for the Navigation of Small UAVs fei liu | 1980 |

FC08 : [OS] Tele-Robot System

| FC08-1 | Remote Variable Access Protocol for Data-Centric TeleRobotics Jeong Seok Kang, Jong Whan Kim and Hong Seong Park | 1985 |
|--------|---|------|
| FC08-2 | Field of View Deficiency-based Dominance Distribution for Collaborative Teleoperation Boris Gromov, Galina Ivanova and Jee-Hwan Ryu | 1990 |
| FC08-3 | Development of a Master Station for Remote Control of Rescue Robots Jae-Hee Kim, Jae-Cheol Lee and You-Rack Choi | 1994 |
| FC08-4 | 3D-based Visual Assistance System for Tele-operation Ga-Ram Jang, Moon-Hong Baeg, Yong-Deuk Shin, Jae-Shik Yoon, Ji-Hun Bae and Jae-Han Park | 1998 |
| FC08-5 | An improved speed ratio control Soohee Han, Kwangsik Woo, Dooam Lee, Donguen Jung and Sanghun Oh | 2001 |
| FC08-6 | Implementation of a Work Distribution Function for Tele-operation under Multi-User and Multi-Robot Environments | 2004 |
| | Joomin Kim, Sekwon Oh and Daewon Kim | |

FC09 : Robotic Applications

| FC09-1 | Slope Driving Experiment of Front Drive Type Electric Wheelchair with Casters using Yaw-rate Compensation | 2008 |
|--------|---|------|
| | Aydin Tarik Zengin, Yutaro Maruno, Hiroshi Okajima and Nobutomo Matsunaga | |
| FC09-2 | Development of Lane Estimator using the Vehicle's Kinematic Motion Youngseop Son, Young Ok Lee, Chung Choo Chung and Seung-Hi Lee | 2014 |
| FC09-3 | Master-slave mapping and slave base placement optimization for intuitive and kinematically robust direct teleoperation Joao Rebelo and Andre Schiele | 2017 |
| FC09-4 | Sensorless Torque Control of Humanoid Arm having Highly Back-drivable Joints KyungWon Moon, Youngbo Shim, Yong-Jae Kim, Dong-Hun Lee, JongDo Choi, YoonSoo Kim and Kyungsik Roh | 2023 |
| FC09-5 | A Three Degree of Freedom Force/Torque Sensor to Measure Foot Forces CHAO YUAN and Changsoo Han | 2028 |
| FC09-6 | Design of an Intelligent Duct Cleaning Robot with Force Compliant Brush Seung Woo Jeon, Wootae Jeong, Duckshin Park and Soon-Bark Kwon | 2033 |

FC10 : [OS] Recent Advances in Brain Engineering

| FC10-1 | Investigation of cortical activation patterns in response to the inter-digit vibrotactile stimulation | 2038 |
|--------|---|------|
| | Sung-Phil Kim, Yoon Gi Chung, Junsuk Kim, Hyung-Sik Kim, Soon-Cheol Chung and Jang-Yeon Park | |
| | T div | |

FC10-2 Imaging of Functional Network Properties in Intractable Epilepsy Based on Neural Signal Analysis High DE Chang-Hwan Im

| FC10-3 | Analysis of fNIRS Data in the Prefrontal Cortex by Blind Separation into Independent Components | 2046 |
|--------|---|------|
| | Keum-Shik Hong, Hendrik Santosa and Xiaosu Hu | |
| FC10-4 | FNIRS based functional connectivity during task state and resting state | 2049 |
| | Keum-Shik Hong, Xiaosu Hu and Shuzhi Ge | |
| FC10-5 | Feasibility of hybrid BCI using ERD- and SSSEP- BCI | 2053 |
| | Sung-Chan Jun and Sangtae Ahn | |

FDI : Interactive Session $\, II \,$

| FDI-1 | Global Set Point Robust Regulation for a PVTOL Vehicle With Bounded Inputs Obregón-Pulido Guillermo, Meda-Campaña J. A, Solis-Perales Gualberto and Castillo-Toledo B. | 2057 |
|--------|---|------|
| FDI-2 | Semi-autonomous Navigation of an Unmanned Ground Vehicle for Bird Expellant in an Airport Chang-hoi Kim, Tae-won Jeong and Kyung-Min Jeong | 2063 |
| FDI-3 | Object and ground classification for a mobile robot in urban environment Jeong Hyo Ha, Sijong Kim and Myung Jin Chung | 2068 |
| FDI-4 | Design of T-S Fuzzy-Model-Based Diving Control of Autonomous Underwater Vehicles : Line of Sight Guidance Approach | 2071 |
| | Sung Woo Jun, Do Wan Kim and Ho Jae Lee | |
| FDI-5 | Combinatorial Optimization Using FOA and GA in Futures Market Technical Analysis yuwen zhang and Chen Fang | 2074 |
| FDI-6 | Design Analysis of Precision Navigation System | 2079 |
| | Seongkyun Jeong, Taehee Kim, Jae-Eun Lee, Sanguk Lee and Jiyun Lee | |
| FDI-7 | Analysis of Effect of Spoofing Signal in GPS Receiver Tae-Hee Kim, Cheon Sig Sin and Sanguk Lee | 2083 |
| FDI-8 | Modeling and Simulation of a Launch Vehicle Thrust Vector Control System Choong-Seok Oh | 2088 |
| FDI-9 | Improved Accelerometer and Magnetometer-Based Solution to Solve Quaternion Feng Zhou and Yanxuan Wu | 2093 |
| FDI-10 | E1 Signal Processing of Galileo IOV-1 PFM Satellite Inone Joo and Sanguk Lee | 2097 |
| FDI-11 | Accurate Calibration Method for SDINS Incorporating Earth-Rate Injection Technique Kyung-Jun Han, Byung-Su Park, Sang-Woo Lee and Myeong-Jong Yu | 2100 |
| FDI-12 | Real Time Inspection Method for Laser Welding Process | 2106 |
| | Hee Shin Kang, Ji Whan Noh and Kyung Han Kim | |
| FDI-13 | The Assessment of Remote Accessibility for Processing Equipment Using the Graphic Simulator Sung-Hyun Kim | 2110 |
| FDI-14 | Study on the Requirements of Joint Torque Sensors considering Mechanical Condition of the Joint Mechanism of a manipulator Chanhun Park | 2114 |
| FDI-15 | Analysis of large range rotational flexure in precision 6-DOF tripod robot Dongwoo Kang and Daegab Gweon | 2117 |
| FDI-16 | Handling Gripper Using Multi Links Mechanism Kyoung Taik Park, Doo Hyung Kim and Hanme Kim | 2121 |
| FDI-17 | Design and Modeling of an Image Stabilizing Device for Small Unmanned Ground Vehicle Dooyeol Koh, Soohyun Kim and Kyungsoo Kim | 2125 |
| FDI-18 | Vibration simulation of hybrid type substrate handling robot in the vacuum environment DONG IL PARK, Cheolhoon Park and Yijun Yoo | 2131 |
| FDI-19 | Assembly phase estimation in the square peg assembly process | 2135 |

| | DONG IL PARK, Chanhun Park, Hyunmin Do, Taeyong Choi and Jin-Ho Kyung | |
|--------|---|------|
| FDI-20 | Design and Control of High-Speed Parallel Robot | 2139 |
| FDI-21 | Hyun Min Do, Chan Hun Park, Byung In Kim, Gwang Jo Chung and Jin Ho Kyung | 0140 |
| FDI-21 | Motion Analysis of Lizard Locomotion Using Motion Capture Chang-hoi Kim, Ho-Cheol Shin and Tae-won Jeong | 2143 |
| FDI-22 | Simple and Complex Obstacle Detection Using an Overlapped Ultrasonic Sensor Ring Hyunbin Kim and Sungbok Kim | 2148 |
| FDI-23 | Adaptive Sliding Window for Hierarchical Pose-Graph-Based SLAM Seungwook Lim, Tae-kyeong Lee, Seongsoo Lee, Shounan An and Se-young Oh | 2153 |
| FDI-24 | Sliding Mode Control for a Two-Wheeled Inverted Pendulum Mobile Robot Driving on Uniform Slopes | 2159 |
| | Dong Sang Yoo, Min-Sun Key and Chang-Gook Jeon | |
| FDI-25 | Occlusion Filling in Dynamic Programming with Simple Index Treatment JeongMok HA and Hong JEONG | 2163 |
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| FDI-27 | Vision-based metric topological SLAM Jihong Min, Jungho Kim, In So Kweon and Yong Woon Park | 2171 |
| FDI-28 | Online 3D World Reconstruction with Independently Moving Point Detection Using Stereo Vision Jungwon Kang, Bo Gil Seo and Myung Jin Chung | 2177 |
| FDI-29 | Monocular Vision based Independently Moving Feature Detection using Image Correspondences Sijong Kim, Jungwon Kang and Myung Jin Chung | 2181 |
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| FDI-33 | Endoscopic Vision Based Tracking of Multiple Surgical Instruments in Robot-assisted Surgery Jaesoon Choi | 2195 |
| FDI-34 | DSP-based motion control of master-slave manipulator system developed for use in pyroprocess research facility | 2199 |
| | Jong Kwang Lee, Byung Suk Park, Kiho Kim and II-Je Cho | |
| FDI-35 | PRIDE remote handling systems KIHO KIM, Jongkwang Lee, Byungsuk Park and Ilje Cho | 2203 |
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| FDI-37 | Augmented Reality Based Teaching Pendant for Industrial Robots syed mohsin abbas, syed hassan and Jungwon Yoon | 2210 |
| FDI-38 | A Predictive Collision-Free Fuzzy Algorithm for Mobile Robots to Avoid Obstacles Moving at Variable Speeds | 2214 |
| | Jin-Woo Jung and Hoang Minh Do | _ |
| FDI-39 | A Proposal of User Friendly Alive Human Detection Robot to Tackle Crisis Situation shuddha Chowdhury and Mahmud Rafiq | 2218 |
| FDI-40 | Optimization of Driver Selection for Minimizing Cost on LNG Plant Considering Risk Factor Inkyu Lee, Kyungjae Tak, Wonsub Lim, Kwang-ho Choi and Moon II | 2222 |