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TB05-5	<a href="#">Pilot Cognitive State Recognition using Wavelet Singular Entropy and Gaussian Process Classification via Full Flight Simulation</a>	953
	<i>Zhengxiang Cai, Qi Wu, Shan Fu, Dan Huang, Biting Yu(Shanghai Jiao Tong University, China)</i>	
TB05-6	<a href="#">A Novel Flag-Language Remote Control Design for a Laparoscopic Camera</a>	959



## Holder Using Image Processing

*Kateryna Zinchenko, Kai-Tai Song(National Chiao Tung University, Taiwan), Wayne Shi-Wei Huang(Show Chuan Memorial Hospital, Taiwan), Kai-Che Liu(Asian Institute of TeleSurgery, IRCAD, Taiwan)*

### TB06 [OS] State Estimation and Applications

206, 13:00~14:30

TB06-1	<a href="#">Exponential Stabilization for Discret-Time Uncertain 2-D Switched Systems</a> <i>Rongni Yang(Shandong University, China), Peng Shi(The University of Adelaide, Australia)</i>	964
TB06-2	<a href="#"><math>H_{\infty}</math> FIR Filter Design With Missing Measurements</a> <i>Seo Won Lee, Chang Joo Lee, Myo Taeg Lim(Korea Univ., Korea, Republic of ), Choon Ki Ahn(Korea University, Korea, Republic of )</i>	971
TB06-3	<a href="#">Fault detection for a class of stochastic systems with unknown disturbance</a> <i>Yanhao Zhan, Zehui Mao, Bin Jiang, Mou Chen(Nanjing University of Aeronautics and Astronautics, China)</i>	975
TB06-4	<a href="#">Stabilization Analysis for Discrete-Time Fuzzy Systems via Nonuniform Delay Partitioning Technique</a> <i>Fengqin Xia, Xiaojie Su(Chongqing University, China), Peng Shi(The University of Adelaide, Australia)</i>	980
TB06-5	<a href="#">Observer-Based Control Design for a Class of Nonlinear Systems Subject to Unknown Inputs: LMI Approach</a> <i>Saleh Sayyadshad, Thomas Gustafsson(Luleå University of Technology, Sweden), Hamid Reza Karimi(University of Agder, Norway), Ali Zemouche(University of Lorraine, France)</i>	984

### TP01 Control Theory and Applications

201~204, 17:00~18:30

TP01-1	<a href="#"><math>H_{\infty}</math> State-Feedback Control for Continuous-Time Markovian Jump Systems with Partly Unknown Transition Probabilities</a> <i>In Seok Park, Nam Kyu Kwon, POOGYEON PARK(POSTECH, Korea, Republic of )</i>	990
TP01-2	<a href="#">Stochastic stability analysis of semi-Markovian jump linear systems via a relaxation technique for time-varying transition rates</a> <i>Sung Hyun Kim, Ngoc Hoai An Nguyen(University of Ulsan, Korea, Republic of )</i>	995
TP01-3	<a href="#">Improved <math>H_{\infty}</math> state-feedback control for discrete-time Markovian jump systems with incomplete knowledge of transition probabilities</a> <i>Nam Kyu Kwon, BumYong Park, POOGYEON PARK(POSTECH, Korea, Republic of )</i>	999
TP01-4	<a href="#">Analysis and Control of Capacitive-coupled Wireless Power Transmission System</a> <i>Hee-Su Choi, Jun-Young Park, Sung-Jin Choi(University of Ulsan, Korea, Republic of )</i>	1005
TP01-5	<a href="#">Grey prediction method for forecasting the capacity of lithium-ion batteries</a> <i>Daehyun Kim, Taedong Goh, Minjun Park, Minhwan Seo, Sang Woo Kim(POSTECH, Korea, Republic of )</i>	1010
TP01-6	<a href="#"><math>H_{\infty}</math> control based on LPV for load torque compensation of PMSM</a> <i>Hoonyoung Lee(Systems and control Lab. Hanyang University, Korea, Republic of ), Youngwoo Lee, Donghoon Shin(Hanyang university, Korea, Republic of ), Chung Choo Chung(Hanyang University, Korea, Republic of )</i>	1013
TP01-7	<a href="#">A New Filtering Method for Discrete-Time Delay Control</a> <i>Jong-Min Yoon, Wook Bahn(Seoul National University, Korea, Republic of ), Sang-Sub Lee, Sang-Hoon Lee(RS Automation Co., Ltd., Korea, Republic of ), Dong-II Dan Cho(Seoul National University, Korea, Republic of )</i>	1019

TP01-8	<a href="#">Scenario Based Robust Control Design for Uninterruptible Power Supplies</a> <i>Aisha Qamar</i> (College of E&ME, National University of Sciences and Technology, Pakistan), Asad Ullah Awan, Kunwar Faraz Ahmed Khan, Muwahida Liaquat(College of E&ME, National University of Sciences and Technology Islamabad, Pakistan)	1024
TP01-9	<a href="#">Robust Integrated Guidance and Control Design Method For UCAV Based on Trajectory Linearization Control</a> <i>Huan Zhou, Hui Zhao, Han Qiao Huang, Tong Han</i> (Aeronautics and Astronautics Engineering College, Air Force Engineering University, China)	1030
TP01-10	<a href="#">LuGre Model-Based Adaptive Robust Control of Mechanical Systems Using Only Position Measurement</a> <i>Cho Won Lee, In Hyuk Kim</i> (Myongji University, Korea, Republic of ), <i>Young Ik Son</i> (Myongji Univ., Korea, Republic of )	1036
TP01-11	<a href="#">On Performance Recovery and Bumpless Switch of Disturbance Observer based Control</a> <i>Li Sun, Donghai Li</i> (Tsinghua University, China), <i>Kwang. Y. Lee</i> (Baylor University, United States)	1042
TP01-12	<a href="#">State Estimation for a Carbon Nanotube-based Sensor Array System</a> <i>Hong Jang, Jay H Lee</i> (KAIST, Korea, Republic of ), <i>Richard D Braatz</i> (MIT, United States)	1046
TP01-13	<a href="#">System Identification and Parameter Estimation of a Multi-rotor flying Machine</a> <i>Mohammad Harun Or Rashid, Beom-Soo Kang</i> (Pusan National University, Korea, Republic of )	1052
TP01-14	<a href="#">Approximate Bisimulations for Constrained Discrete-Time Linear Systems</a> <i>Guoqi Ma, Linlin Qin, Xinghua Liu, Chun Shi, Gang Wu</i> (University of Science and Technology of China, China)	1058
TP01-15	<a href="#">Short-Term Prediction of Disturbance Inputs of the Greenhouse System: A Case Study on Outside Humidity</a> <i>Guoqi Ma, Linlin Qin, Liu Xinghua, Chun Shi, Gang Wu</i> (University of Science and Technology of China, China)	1064
TP01-16	<a href="#">Proportional multiple-Integral observer based Sliding Mode Control for Linear Systems with Mismatched Disturbance</a> <i>Hyoungh-woong Lee, Jaepil Ban, Sangchul Won</i> (POSTECH, Korea, Republic of )	1070
TP01-17	<a href="#">The Ultimate Bound of a Sampled-Data Sliding Mode Control System for a Second-Order Systems</a> <i>Ho Suk Yeon, Kang-Bak Park, Soon Hong Kwon</i> (Korea Univ., Korea, Republic of )	1075
TP01-18	<a href="#">Terminal sliding mode control of master-slave system with Markovian jump parameters</a> <i>Liu Xinghua, Ma Guoqi, Xi Hongsheng, Wang Weidong</i> (University of Science and Technology of China, China)	1078
TP01-19	<a href="#">Iterative Generalized-<math>\alpha</math> Method for the Dynamic Analysis of Flexible Multibody System</a> <i>Wei Sun</i> (Xijing University, China)	1084
TP01-20	<a href="#">Stability analysis of uncertain switched systems via delay partitioning</a> <i>Wenxiu Zhao, Yuangong Sun</i> (University of Jinan, China)	1088
TP01-21	<a href="#">New criteria on finite-time stability of nonautonomous systems with delay and disturbance</a> <i>Yanan Li, Yuangong Sun</i> (University of Jinan, China)	1092
TP01-22	<a href="#">Stabilization of an Inhomogeneous Heat Equation Subject to Constraint</a> <i>Shuang Zhang</i> (University of Electronic Science and Technology of China, China), <i>Chuan Yang, Shuangxi Nie</i> (University of Electronic and Technology of China, China), <i>Wei He</i> (University of Science and Technology Beijing, China)	1096
TP01-23	<a href="#">Sliding Mode Control with Friction Observer and Load Observer of PMSM</a>	1102

*Linyuan Chai, Fenxi Yao(Beijing Institute of Technology, China)*

TP01-24	<a href="#">Control capability : from two-loop autopilot to three-loop autopilot</a>	1107
	<i>Jun-fang FAN, Xiao-qian AN(Beijing Information Science &amp; Technology University, China)</i>	
TP01-25	<a href="#">T-S Fuzzy Control of IPMSM Using Backstepping Integral Sliding Mode</a>	1113
	<i>Seungkyu Park, Abner Asignacion(Changwon National University, Korea, Republic of )</i>	
TP01-26	<a href="#">Cluster Consensus for Heterogeneous Multi-agent Systems</a>	1119
	<i>Jae Man Kim, Jin Bae Park(Yonsei University, Korea, Republic of ), Yoon Ho Choi(Kyonggi University, Korea, Republic of )</i>	
TP01-27	<a href="#">Stochastic Stability of Dynamical Systems Driven by Levy Processes</a>	1123
	<i>T. Agustinus Tamba(Bandung Institute of Technology, Indonesia), Arjon Turnip(Indonesian Institute of Sciences, Indonesia)</i>	
TP01-28	<a href="#">Observer Design for a Class of Nonlinear Systems Driven by Stochastic ProcessWith Bounded Covariance</a>	1128
	<i>T. Agustinus Tamba(Bandung Institute of Technology, Indonesia), Arjon Turnip(Indonesian Institute of Sciences, Indonesia)</i>	
TP01-29	<a href="#">Adaptive Synergetic Control about Attitude Tracking of Rigid Spacecraft with Disturbances and Parameter Uncertainties</a>	1133
	<i>Yanlong Jia, Xuebo Yang(Bohai University, China)</i>	

## TP02 Robotics

201~204, 17:00~18:30

TP02-30	<a href="#">Inverse Dynamic Modeling of a Stair-Climbing Robotic platform with Flip Locomotion</a>	1139
	<i>Jae Neung Choi(Yeungnam Univ., Korea, Republic of ), Kyungmin Jeong(Korea Atomic Energy Research Institute, Korea, Republic of ), TaeWon Seo(Yeungnam Univ., Korea, Republic of )</i>	
TP02-31	<a href="#">Design of Roller-Cam Clutch Mechanism for Energy Efficiency and High BackDrivability of Lower Extremity Exoskeleton</a>	1144
	<i>Ho Jun Kim, Chang Soo Han(Hanyang Univ., Korea, Republic of )</i>	
TP02-32	<a href="#">Modeling and Dynamic Analysis of the Biped Robot</a>	1149
	<i>Muhammad Rameez(Air University, Pakistan), Liaquat Ali Khan(Muhammad Ali Jinnah University, Pakistan)</i>	
TP02-33	<a href="#">Design of a Heavy Duty Manipulator for Dismantling of a Nuclear Power Plant</a>	1154
	<i>Changhoi Kim, Yongchil Seo, Sung-uk Lee, Byung-seon Choi, Jei-kwon Moon(Korea Atomic Energy Research Institute, Korea, Republic of )</i>	
TP02-34	<a href="#">Stability Analysis of Reference Compensation Technique of Neural Network Control for Robot Manipulators</a>	1159
	<i>Seul Jung(Chungnam National University, Korea, Republic of )</i>	
TP02-35	<a href="#">Development of a New Hybrid Link Based Mobile Platform</a>	1162
	<i>Heeseung Hong(Seoul National University, Korea, Republic of ), Hwa Soo Kim(Kyonggi University, Korea, Republic of ), Jongwon Kim, Youngjae Jeon(Seoul National University, Korea, Republic of )</i>	
TP02-36	<a href="#">Inverse Optimal Design of Graphical Formation Control of Mobile Robots Considering Their Kinematics and Dynamics</a>	1166
	<i>Jae Young Lee(Yonsei University, Korea, Republic of ), Yoon Ho Choi(Kyonggi University, Korea, Republic of ), Jin Bae Park(Yonsei University, Korea, Republic of )</i>	
TP02-37	<a href="#">Tracking Control of Wheeled Mobile Robot Using Iterative Learning Controller</a>	1172
	<i>Xiaochun Lu, Juntao Fei(Hohai University, China)</i>	
TP02-38	<a href="#">Three Designs of Mobile Robot Traveling Simulator Using Optical Mice</a>	1177
	<i>Sungbok Kim, Chanhyeok Lee(Hankuk Univ. of Foreign Studies, Korea, Republic of )</i>	

TP02-39	<a href="#">Evolutionary Algorithm-based Formation Control and Collision Avoidance for Multiple Mobile Robots</a> <i>Seung-Mok Lee, Hyun Myung(KAIST, Korea, Republic of )</i>	1183
TP02-40	<a href="#">Polynomial Curve-based Longitudinal Motion Planning for Safe Deceleration</a> <i>Byungjae Park(ETRI, Korea, Republic of )</i>	1186
TP02-41	<a href="#">Fall detection algorithm for elderly based-on Human characteristic matrix and SVM</a> <i>Rui-dong Wang, Yong-liang Zhang, Ling-ping DONG , Jia-wei Lu , Zhi-qin ZHANG , Xia HE (Zhejiang University of Technology, China)</i>	1190
TP02-42	<a href="#">Fast object detection via re-use mechanism</a> <i>Daeha Lee(ETRI, Korea, Republic of )</i>	1196
TP02-43	<a href="#">Perimeter Intrusion Detection Based on Intelligent Video Analysis</a> <i>Zhang ZhiQin, Zhang YongLiang, Xiao Gang, Wang RuiDong, He Xia(Zhejiang University of Technology, China)</i>	1199
TP02-44	<a href="#">A Study on the Compensation of Image Rotation for Optical Three-Dimensional Microscope</a> <i>Yeon-Beom Choi, Jun-Ho Kim(Korea Polytechnic University, Korea, Republic of ), Woo-Jun Kim(Glonik, Korea, Republic of ), Doo-Hee Jung(Korea Polytechnic University, Korea, Republic of )</i>	1205
TP02-45	<a href="#">Vision Based Robot for Recognizing and Grasping Fast Moving Conveyor Products</a> <i>Jang Myung Lee, Longtan Wang, Zhitao Wang, Hoyun Yu, Hwimyung Ha, Yunki Kim(Pusan National University, Korea, Republic of )</i>	1211
TP02-46	<a href="#">Inverse Perspective Mapping Technique Based on a Virtual-Vertical Plane Model for Obstacle Detection with Mono Camera</a> <i>Dong-Hoon Yi, Tae-Jae Lee, Dong-Il Dan Cho(Seoul National University, Korea, Republic of )</i>	1216
TP02-47	<a href="#">Simplified Assistive Devices for Upper Limbs</a> <i>Ryoichi Suzuki, Nobuaki Fujiki, Shigehiko Furuya, Eidai Ito, Nobuaki Kobayashi, Eberhard P Hofer(Kanazawa Institute of Technology, Germany)</i>	1220
TP02-48	<a href="#">Evaluation of remote operability and maintainability of pyroprocessing equipment</a> <i>Kiho Kim(Korea Atomic Energy Research Institute, Korea, Republic of )</i>	1224
TP02-49	<a href="#">Ceiling Work Scenario Based Hardware Design and Control Algorithm of Supernumerary Robotic Limbs</a> <i>Changyeob Shin, Jangho Bae, Daehie Hong(Korea University, Korea, Republic of )</i>	1228
TP02-50	<a href="#">Variable impedance control with stiffness for human-robot cooperation system</a> <i>Jangho Bae, JongHyeon Ko, Daehie Hong(Korea University, Korea, Republic of )</i>	1231
TP02-51	<a href="#">Image Stabilization Using FIR Filters</a> <i>Myo Taeg Lim, Richard Y. Park, Jungmin Park, Choon Ki Ahn(Korea University, Korea, Republic of )</i>	1234
TP02-52	<a href="#">Mobile Robot Position Control Algorithm Based on Multiple Ultrasonic Distance Sensors</a> <i>Baeksuk Chu(Kumoh National Institute of Technology, Korea, Republic of )</i>	1238
TP02-53	<a href="#">A Robust Control of Mobile Robot Based on Sonar Sensors</a> <i>Byung Kyun Shim(Kyungnam University, Korea, Republic of )</i>	1241
TP02-54	<a href="#">A Study on Precise Control of Mobile Robot with Dual-Arm</a> <i>Woo-Song Lee(Sungsanam Deco Co.,Ltd, Korea, Republic of )</i>	1244
TP02-55	<a href="#">A Study on Grasping Control of Hand Fingers with 12 Joints</a> <i>Sang-Young Jo(Kyungnam University, Korea, Republic of )</i>	1247
TP02-56	<a href="#">A Study on Travelling Control of Mobile Robot by Voice Command</a>	1250

*Young-Mok Koo(KyungNam University, Korea, Republic of )*

TP02-57	<a href="#">A Study on Robust Control of Articulated Robot Arm with Seven Joints</a>	1253
	<i>Jun Seok Yang(KyungNam University, Korea, Republic of )</i>	
TP02-58	<a href="#">A Stable Control of Legged Robot Based on Ultrasonic Sensor</a>	1256
	<i>Eun-Tae Ha(Future Technology Institute Co., Ltd, Korea, Republic of )</i>	
TP02-59	<a href="#">A Reel-Time Control for Precise Walking of Bipeded Robot</a>	1259
	<i>In-Man Park(Intem Co., Ltd., Korea, Republic of )</i>	
TP02-60	<a href="#">A Study on Robust Motion Control of Humanoid Type Robot for Cooperative Working</a>	1262
	<i>Won-Jun Hwang(Gyeongnam Technopark Co. Ltd, Korea, Republic of )</i>	
TP02-61	<a href="#">A Precise Position Control of Robot Manipulator with Eight Joints</a>	1265
	<i>Yang-Keun Jeong(Sinla Information Technology Co., Ltd., Korea, Republic of )</i>	
TP02-62	<a href="#">A Study on Visual Feedback Control of SCARA Robot Arm</a>	1268
	<i>Hyun-Suk Sim(Dongsan Tech co.,Ltd, Korea, Republic of )</i>	
TP02-63	<a href="#">Active Safety System for Personal Mobility Vehicles</a>	1271
	<i>Changwon Kim(Korea Institute of Machinery and Materials, Korea, Republic of ), Kang Hyun Ye, Seung Kyu Park(Keimyung University, Korea, Republic of )</i>	
TP02-64	<a href="#">An automated Point-of-Care Instrument for Molecular Testing</a>	1275
	<i>Ohwon Kwon, Kangho Lee, Dongkyu Lee(Korea Institute of Machinery and Materials, Korea, Republic of )</i>	
TP02-65	<a href="#">An Alternating Current-driven Control for Biomolecule Detection</a>	1279
	<i>Kang-Ho Lee(Korea Institute of Machinery and Materials, Korea, Republic of )</i>	
TP02-66	<a href="#">Development of Prototype System for Robot-assisted Ultrasound Diagnosis</a>	1285
	<i>Joonho Seo, Jangho Cho, Hyunsoo Woo, Yongkoo Lee(Korea Institute of Machinery &amp; Materials, Korea, Republic of )</i>	
TP02-67	<a href="#">Hybrid Mode Impedance Control for Rehabilitation System</a>	1289
	<i>Youngwoo Kim(Korea Institute of Machinery &amp; Materials (KIMM), Korea, Republic of ), Goro Obinata(Chubu University, Japan, Japan)</i>	
TP02-68	<a href="#">Home-Legacy Device Intelligent Control Using ANFIS with Data Regeneration and Resampling</a>	1294
	<i>Jun ho Chung, In Hwan Choi, Sung Hyun Yoo, Myo Taeg Lim(Korea Univ., Korea, Republic of ), Hyun Kook Lee(eZEX Corporation, Korea, Republic of ), Moon Kyu Song(Wonkwang Univ., Korea, Republic of ), Choon Ki Ahn(Korea University, Korea, Republic of )</i>	
TP02-69	<a href="#">A Binary Based HMAX Model for Object Recognition</a>	1297
	<i>Tae-Koo Kang(Sangmyung University, Korea, Republic of ), HuaZhen Zhang, Dong-Sung Pae, Myo-Taeg Lim(Korea University, Korea, Republic of )</i>	
TP02-70	<a href="#">Humanoid Robot Based on the Middleware CORBA</a>	1302
	<i>Dong W. Kim(Inha Tech., Korea, Republic of )</i>	

### TP03 Signals and Intelligent Systems

201~204, 17:00~18:30

TP03-71	<a href="#">Bluetooth-based Tree Topology Network for Wireless Industrial Applications</a>	1305
	<i>Joonkyo Kim, Shin-kwang Kang, Jaehyun Park(Inha University, Korea, Republic of )</i>	
TP03-72	<a href="#">Development of methods for receiving analytical data from different SQL/ NoSQL databases and leading to uniform format</a>	1309
	<i>Nurzhan Kakenovich Mukazhanov, Raissa Kabilevna Uskenbayeva, Abu Abdykadyrovich Kuandykov(International Information Technology University, Kazakhstan)</i>	

TP03-73	<a href="#">Nolinear Multi-component Spectroscopy Analysis Based on Evolutionary Construction Optimazation</a>	1315
	<i><u>Boyan Cai</u>, Hui Cao, Yanbin Zhang, Lixin Jia, Gangquan Si(Xian Jiao Tong University, China), Zhongjian Li(Northwestern Polytechnical University, China)</i>	
TP03-74	<a href="#">Weak False Label Learning Model for Sensor Data Recognition</a>	1321
	<i><u>SUNG JUNE CHANG</u>, HUN JOO LEE(ETRI, Korea, Republic of )</i>	
TP03-75	<a href="#">Artificial Neural Network-Based Model for Quality Estimation of Refined Palm Oil</a>	1324
	<i><u>Nurul Sulaiha Sulaiman</u>, Khairiyah Mohd Yusof(Universiti Teknologi Malaysia, Malaysia)</i>	
TP03-76	<a href="#">Entropy Estimation of the Position of the Barrier Dimension: Applicability Nearsighted and Farsighted Iterative Algorithms for Processing High-Dimensional Data</a>	1329
	<i>Berik Akhmetov(Hoja Ahmet Yasaui International Kazakh-Turkish University, Kazakhstan), Alexander Ivanov(Penza Research Electrotechnical Institute, Russian Federation), Anis Gilmutdinov(A.N.Tupolev Kazan National Research Technical University, Russian Federation), Ivan Ognev(Moscow Power Engineering Institute (National Research University), Russian Federation), <u>Kaiyrkhan Mukapil</u>(Kazakh National Research Technical University named after K.I.Satpayev, Kazakhstan)</i>	
TP03-77	<a href="#">Perspectives of Multiple Reduction of Biometrical Test Selection Scopes While Increasing Network Dimension of Pearson's Private Criteria</a>	1333
	<i>Bakhytzhan Akhmetov(Kazakh National Research Technical University named after K.I.Satpayev, Kazakhstan), Alexander Ivanov(Penza Research Electrotechnical Institute, Russian Federation), Alexander Malygin(Penza State University, Russian Federation), <u>Zhibek Alibiyeva</u>, Kaiyrkhan Mukapil(Kazakh National Research Technical University named after K.I.Satpayev, Kazakhstan)</i>	
TP03-78	<a href="#">The Family of Chi-Square Molecules Pearson: Software-Continuum Quantum Accelerators of High-Dimensional Calculations</a>	1337
	<i><u>Bakhytzhan Akhmetov</u>(Kazakh National Research Technical University named after K.I.Satpayev, Kazakhstan), Alexander Ivanov(Penza Research Electrotechnical Institute, Russian Federation), Anis Gilmutdinov(A.N.Tupolev Kazan National Research Technical University, Russian Federation), Alexander Bezyaev(Penza Research Electrotechnical Institute, Russian Federation), Yulia Funtikova(Penza State University, Russian Federation)</i>	
TP03-79	<a href="#">Dynamic function allocation method for aircraft cockpit based on operator functional state</a>	1342
	<i><u>Wenhao Bi</u>, An Zhang, shuida bao(Northwestern Polytechnical University, China)</i>	
TP03-80	<a href="#">Performances Evaluation and Comparison of PID Controller and Fuzzy Logic Controller for Process Liquid Level Control</a>	1347
	<i><u>Deepa shivshant Bhandare</u>(Modern college of Engineering ,University of Pune, India)</i>	
TP03-81	<a href="#">Interval Type-2 Fuzzy Maximum Power Point Tracking for Solar Photovoltaic Power Charging Systems</a>	1353
	<i><u>Ching-Chih Tsai</u>(National Chung Hsing University, Taiwan)</i>	
TP03-82	<a href="#">Design of GNSS Jamming Propagation Simulator using ITU-R P.1546 Propagation Model</a>	1359
	<i><u>inone joa</u>(ETRI, Korea, Republic of )</i>	
TP03-83	<a href="#">GNSS Interference Signal Generation Scenario for GNSS Interference Verification Platform</a>	1363
	<i><u>Seongkyun Jeong</u>, Cheon Sig Sin, Jaehoon Kim(Electronics and Telecommunications Research Institute, Korea, Republic of )</i>	
TP03-84	<a href="#">Experimental Studies of Autonomous Driving of a Vehicle on the Road Using LIDAR and DGPS</a>	1366
	<i><u>Jeong Ku Kim</u>(Hyundai Mobis, Korea, Republic of ), Jin Wook Kim, Jin Hyung Kim, Yun Ho Ko(Chungnam National University, Korea, Republic of ), Tae Hyung Jung(Hyundai Mobis, Korea, Republic of ), Seul Jung, Young Jun Park(Chungnam National University, Korea, Republic of )</i>	
TP03-85	<a href="#">Calibration of the Drift Error in GPS using Optical Flow and Fixed Reference</a>	1370

## Station

*Kyukwang Kim, Whimin Kim, Duckyu Choi, Hyun Myung(KAIST, Korea, Republic of )*

TP03-86	<a href="#">INS Ground Alignment Through Observable Degree Analysis Based on Information Theory</a> <i>qiang fang(National University of Defense Technology, China)</i>	1374
TP03-87	<a href="#">EGI/IMU Integration Using Multiple IMUs and Error Damping Loop for SAR Motion Compensation</a> <i>Jin Woo Song, Chul Woo Kang, Young Bum Park, Yong-gonjong Park, Chan Gook Park(Seoul National University, Korea, Republic of )</i>	1380
TP03-88	<a href="#">Adaptive Code Decision Algorithm for Real-Time Software Signal Generator</a> <i>Tae Hee Kim(ETRI, Korea, Republic of )</i>	1384
TP03-89	<a href="#">Matching of Thermal and Color Images with Application to Power Distribution Line Fault Detection</a> <i>hahyoung jung, Joon Lyou(Chungnam National University, Korea, Republic of )</i>	1389
TP03-90	<a href="#">Afocal Optical Flow Sensor for Mobile Robot Odometry</a> <i>Dong-Hoon Yi, Tae-Jae Lee, Dong-Il Dan Cho(Seoul National University, Korea, Republic of )</i>	1393
TP03-91	<a href="#">Infrared System for Intermittent Automatic Train Protection</a> <i>Ahmad Sugiana(Kwangwoon University, Korea, Republic of ), Mulyo Sanyoto, Par Wito, M. Rachmat Gunawan(PT. Industri Telekomunikasi Indonesia, Indonesia), Key Seo Lee(Kwangwoon University, Korea, Republic of )</i>	1398
TP03-92	<a href="#">Mathematical modeling of a six-axis force/moment sensor</a> <i>Chao Yuan(Hanyang University/ CnR Lab, Korea, Republic of ), Gang Xue(Hanyang University, Korea, Republic of ), Mei-Zhi Yang(Hebei University, China), Lu-Ping Luo, Kyoo-Sik Shin(Hanyang University, Korea, Republic of ), Xue-Wei Zhang(China Academy of Aerospace Aerodynamics, China)</i>	1404
TP03-93	<a href="#">A computationally efficient suboptimal smoother for attitude and position estimation using inertial sensors</a> <i>Toan Huu Duong, Young Soo Suh(University of Ulsan, Korea, Republic of )</i>	1410
TP03-94	<a href="#">Performance Test and Analysis of Infrared Gas Sensors and a Combustible Gas Detector</a> <i>SEUNGHO HAN, Gyoutae Park, Geunjun Lyu, Yeonjae Lee(Korea Gas Safety Corporation, Korea, Republic of ), Hiesik Kim(University of Seoul, Korea, Republic of )</i>	1413
TP03-95	<a href="#">Field Test and Performance Analysis of Integrated Cathodic Protection Monitors</a> <i>Seung Lak Kim, Gyou Tae Park, Gyun jun Lyu, yeon jae Lee(Korea Gas Safety Corporation, Korea, Republic of )</i>	1417
TP03-96	<a href="#">Design of a Portable Ammonia Detector for Supporting Gas Safety Fields</a> <i>TAEHO NAM, Gyoutae Park, Geunjun Lyu, Yeonjae Lee(Institute of Gas Safety R&amp;d, Korea Gas Safety Corporation, Korea, Republic of )</i>	1421
TP03-97	<a href="#">Fast Magnetic Field Simulation with Linear System Approach</a> <i>Jaeho Lim, Chang-Beom Kim, Sunglok Choi, HyoBong Hong(Electronics and Telecommunications Research Institute (ETRI), Korea, Republic of ), Jong Won Park(ChungNam National University (CNU), Korea, Republic of )</i>	1425
TP03-98	<a href="#">Design of Mobile Sensor Robot using Non-Linear Fault Recognizer Algorithm</a> <i>Rajaram P.(Maha Barathi Engineering College, India), Prakasam Periasamy(United Institute of Technology, India)</i>	1429
TP03-99	<a href="#">SYNCHRONIZING NUMEROUS SAMPLING TASKS BY GEOMETRIC SERIES IN SENSOR FIELD</a> <i>Rajasekar Rangasamy(Tagore Institute of Engineering and Technology, India), Prakasam Periasamy(United Institute of Technology, India)</i>	1435

**FA01 Bio-inspired Robot Design**

101, 09:10~10:40

**FA02 Control Applications I**

102, 09:10~10:40

- FA02-1 [Control Strategy of Slack Enabling Tendon Actuator for the Soft Wearable Robot using Feedback Linearization](#) 1441  
*Useok Jeong, Haemin Lee, Hyunki In, Kyu-Jin Cho(Seoul National University, Korea, Republic of )*
- FA02-2 [Stability and Performance of Classical Digital Phase-Locked Loop in Discrete-time Settings](#) 1445  
*Nur Syazreen Ahmad, Widad Ismail(Universiti Sains Malaysia (USM), Malaysia)*
- FA02-3 [Research on Online rumor Based on SEIR Model with Nonlinear Incidence Rates](#) 1451  
*Xiaojing Lin, Yaming Zhuang(Southeast University, China)*
- FA02-4 [Backstepping and Backstepping Sliding Mode Controller for Droplet Position in Electrowetting on Dielectric System](#) 1457  
*Arsit Boonyaprapasorn, Eakachai Pengwang, Thavida Maneewarn, Parinya Sa Ngiamsunthorn, Chadchawarn Pongsomboon, Wishanuruk Wechsathol, Rardchawadee Silapunt(King Mongkut's University of Technology Thonburi, Thailand)*
- FA02-5 [A new method of synthetic jet actuator-based LCO suppression using an output feedback control strategy](#) 1463  
*Natalie Ramos Pedroza, William MacKunis, Vladimir Golubev(Embry Riddle Aeronautical University, United States)*
- FA02-6 [Model Predictive Control for Floating Offshore Wind Turbines with Failure Compensation using Individual Blade Pitch Control](#) 1469  
*THIERY Flavien, Naoyuki Hara, Keiji Konishi(Osaka Prefecture University, Japan)*

**FA03 [OS] Time Delay and Their Applications**

103, 09:10~10:40

- FA03-1 [State Dependent Disturbance Compensation Method for Motor Control Systems with Unknown Input Time Delay](#) 1474  
*junmin Park(postech, Korea, Republic of ), Daesung Jung(Samsung Electronics, Korea, Republic of ), Wookyong Kwon, Soohee Han, Sangchul Won(postech, Korea, Republic of )*
- FA03-2 [A New Adaptive Sliding Mode Control Scheme](#) 1480  
*Jaemin Baek(POSTECH, Korea, Republic of )*
- FA03-3 [A Robust Extended Kalman Filtering with Linearization Error](#) 1485  
*Bokyu Kwon(Kangwon National University, Korea, Republic of ), Soohee Han(Postech, Korea, Republic of )*
- FA03-4 [Delay-dependent Stability Analysis of Time-delay Systems by Utilizing A New Integral Inequality and Delay-decomposition Approach](#) 1488  
*Haiyang Zhang(Yunnan Minzu University, China), Lianglin Xiong(Yunnan University, China)*
- FA03-5 [Unfalsified Adaptive Controller Design for Pilot-Aircraft System](#) 1494  
*Wei Liming, Fu Shan, Huang Dan(Shanghai Jiao Tong University, China)*

**FA04 [OS] Medical Robotics and Simulation**

104, 09:10~10:40

- FA04-1 [Control Configuration for Upper Limb Rehabilitation Robotic Systems](#) 1500



*Jang Ho Cho, Hyun Soo Woo, Hyuk Jin Lee, chul seung Kim(KIMM, Korea, Republic of )*

FA04-2	<a href="#">Friction-Model-Based Estimation of Interaction Force of a Surgical Robot</a>	1503
	<i>Subon Kim, Doo Yong Lee(KAIST, Korea, Republic of )</i>	
FA04-3	<a href="#">Improvement of Robotic Mechanism for Automated Biopsy</a>	1508
	<i>Youngjin Moon(Asan Medical Center, Korea, Republic of ), Jongseok Won(Seou National University, Korea, Republic of ), Sanghoon Park, Jaesoon Choi(Asan Medical Center, Korea, Republic of )</i>	
FA04-4	<a href="#">3D Registration Using Inertial Navigation System And Kinect For Image-Guided Surgery</a>	1512
	<i>JoonYoung Bang(Kyungpook National University, Korea, Republic of )</i>	
FA04-5	<a href="#">Endoscopic Camera Manipulation Planning of a Surgical Robot using Rapidly-Exploring Random Tree Algorithm</a>	1516
	<i>Jaehyeon Park, Woojung Park, Chiwon Lee, Myungjoon Kim, Sungwan Kim, H. Jin Kim(Seoul National University, Korea, Republic of )</i>	
FA04-6	<a href="#">Design of an MRI-Compatible Modularized Needle Driver for In-bore MRI-Guided Prostate Interventions</a>	1520
	<i>Kiyoung Kim(Imperial college London, Hamlyn Centre, United Kingdom), Meng Li, Berk Gonenc(Johns Hopkins University, United States), Weijian Shang(Worcester Polytechnic Institute, United States), Sohrab Eslami, Iulian Iordachita(Johns Hopkins University, United States)</i>	

#### FA05 [OS] Health Care Technology

105, 09:10~10:40

FA05-1	<a href="#">Research Trend and Future Perspective of Plasma-Assisted Health Care Technology</a>	1526
	<i>Hae June Lee(Pusan National University, Korea, Republic of ), Kiwon Song(Yonsei University, Korea, Republic of )</i>	
FA05-2	<a href="#">Medical device industry and the medical cluster in Daegu, Korea</a>	1529
	<i>Jeong-Woo Sohn, Suk Tae Seo, Sang Il Lee(Daegu-Gyeongbuk Medical Innovation Foundation, Korea, Republic of )</i>	
FA05-3	<a href="#">Design of A Microneedles Array With Swellable Tips For Mechanical Interlocking With Soft Tissues</a>	1532
	<i>Keum-Yong Seong, Seung Yun Yang(Pusan National University, Korea, Republic of )</i>	
FA05-4	<a href="#">Effective and Long-lasting Tooth Bleaching by Non-Thermal Atmospheric Pressure Plasma: A 6-month Evaluation</a>	1535
	<i>Seoul Hee Nam, Jin Woo Hong, Gyoo-Cheon Kim(Pusan National University, Korea, Republic of )</i>	

#### FA06 [OS] Signal and Image Processing

206, 09:10~10:40

FA06-1	<a href="#">Posture Estimation from Kinect Image Using RVM Regression Analysis</a>	1540
	<i>hiroyuki fujimura, Hyounseop Kim, Joo Kooi Tan, Seiji Ishikawa(Kyushu Institute of Technology, Japan)</i>	
FA06-2	<a href="#">Development of Image Viewer for Analyzing of Temporal Subtraction from Chest CT Images</a>	1543
	<i>Masashi Kondo, Hyounseop Kim, Yuriko Yoshino, Joo Kooi Tan, Seiji Ishikawa(Kyushu Institute of Technology, Japan), Seiichi Murakami(Univerty of Occupational &amp; Environmental Health, Japan), Takatoshi Aoki(University of Occupational &amp; Enviromental Health, Japan)</i>	
FA06-3	<a href="#">Automatic Segmentation of Phalanges Regions on MR Images Based on MSGVF Snakes</a>	1547
	<i>Koji Shigeyoshi, Hyounseop Kim(Kyushu Institute of Technology, Japan), Seiichi</i>	

Murakami(University of Occupational & Environmental Health, Japan), Joo Kooi Tan, Seiji Ishikawa(Kyushu Institute of Technology, Japan)

FA06-4	<p><a href="#">Development of A Supporting System for Visual Inspection of IGBT Device Based on Statistical Feature and Complex Multi-Resolution Analysis</a>  <u>daisuke yuki</u>(kyushu institute of technology, Japan), Hyoungseop Kim(kyutech institute of technology, Japan), Joo Kooi Tan, Seiji Ishikawa, Masanori Tsukuda, Ichiro Omura(kyushu institute of technology, Japan)</p>	1551
FA06-5	<p><a href="#">A Glove-Based Gesture Recognition System for Vietnamese Sign Language</a>  <u>Lam Tung Phi</u>(Institute of Information Technology-VAST, Viet Nam), Hung Duc Nguyen(The College of Mechanics and Metallurgy, Viet Nam), Quyên T.T. Bui(Institute of Information Technology, Vietnam Academy of Science and Technology, Viet Nam), Thang Tat Vu(Institute of Information Technology -VAST, Viet Nam)</p>	1555
FA06-6	<p><a href="#">3D Vision for Mobile robot Manipulator on Detecting and Tracking Target</a>  <u>Hieu Trong Luu</u>, Hung Thanh Tran(Can Tho University, Viet Nam)</p>	1560

### FB01 fNIRS Forum : Toward a Mobile Brain Imager

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### FB02 Control Applications II

102, 13:30~15:00

FB02-1	<p><a href="#">Hybrid Magnetic Bearing Regulation via Super Twisting Control</a>  <u>Mohamed S. Kandil</u>(Universite de Sherbrooke, Canada), Philippe Micheau(Université de Sherbrooke, Canada), João P. Trovão(Universite de Sherbrooke, Canada), Loicq S. Bakay(Alstom Power, Canada), Maxime R. Dubois(Universite de Sherbrooke, Canada)</p>	1566
FB02-2	<p><a href="#">Decentralized H-infinity Control of Large-scale Descriptor Systems using Proportional-plus-derivative State Feedback</a>  <u>SungBin Kim</u>, woogyong Kwon, Jaepil Ban, Sangchul Won(POSTECH, Korea, Republic of )</p>	1572
FB02-3	<p><a href="#">Image Stitching Algorithm for Camber Measurement in Hot Rolling Process : Cross-Correlation Approach</a>  <u>Min Su Kim</u>, Won Il Lee, JinWoo Yoo, POOGYEON PARK(POSTECH, Korea, Republic of )</p>	1577
FB02-4	<p><a href="#">To Prevent Crack for Thin-wall Workpieces during Milling Process by Torque Feedback</a>  <u>Mu-Ping Tsai</u>, Nan-Chyuan Tsai, Chun-Chi Lin, <u>Hsin-Lin Chiu</u>(National Cheng Kung University, Taiwan)</p>	1581
FB02-5	<p><a href="#">Efficient Algorithm for Evacuation Problem Solving</a>  <u>Ainur Kholdasovna Kozbakova</u>, Aliya Kalizhanova(Kazakh National Technical University after K.I.Satpaev, Kazakhstan), Zhazira Amirgaliyeva(Kazakh National University named after al-Farabi, Kazakhstan), Yedilkhan Amirgaliyev(Institute of Information and Computing technologies, Kazakhstan)</p>	1587
FB02-6	<p><a href="#">Experimental Analysis of Electromagnetic Vibration Damping of a Cantilever Beam</a>  <u>Muhammad Rizwan Siddiqui</u>, Iftikhar Ahmad, Masroor Khan, Sarwat Mushtaq Ahmad(Ghulam Ishaq Khan Institute of engineering sciences and technology, Pakistan)</p>	1593

### FB03 Identification and Estimation

103, 13:30~15:00

FB03-1	<p><a href="#">Evaluation of a Possibility of Estimation of Reaction Force of Simple Hydraulic System using Sliding Perturbation Observer</a></p>	1598
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*Hyun Cheol Lee, Keum Gang Cha, Min Cheol Lee(Pusan National University, Korea, Republic of )*

- FB03-2 [Average Consensus of Multi-agent System With Binary-valued Observations](#) 1601  
*Ximei Wang, Ting Wang, Changbao Xu, Yanlong Zhao(Chinese Academy of Sciences, China)*
- FB03-3 [Inequality Constrained Kalman Filter for Bearing-Only Target Motion Analysis](#) 1607  
*jonghoek kim, Taeil Suh, Jonha ryu(agency for defense development, Korea, Republic of )*
- FB03-4 [Performance Comparison of Sliding Mode Observers for Back EMFs based Speed Estimation in PMSM](#) 1612  
*Suneel Kumar Kommuri, Jagat Jyoti Rath, Kalyana Chakravarthy Veluvolu(Kyungpook National University, Korea, Republic of ), Michael Defoort(Univ. Lille Nord de France, France), Sivanagaraja Tatinati(Kyungpook National University, Korea, Republic of )*
- FB03-5 [Road Profile Modeling by Subspace Identification Methods](#) 1618  
*semiha turkay(anadolu university, Turkey)*
- FB03-6 [The Identification Method of Robot Actuator Parameters](#) 1624  
*Alexander Laray(Far Eastern Federal University, Russian Federation), Dmitry Yukhimets(Institute of automation and control processes, Russian Federation)*

#### FB04 Human-Robot Interaction and Visual Servoing

104, 13:30~15:00

- FB04-1 [Sensitivity Analysis of Detection and Discrimination Transparency for Haptic Teleoperation](#) 1629  
*Sangsoo Park, Riaz Uddin, Jeha Ryu(Gwangju Institute of Science and Technology, Korea, Republic of )*
- FB04-2 [A Psychological Framework to Objectively Evaluate Socially Capable Robots for Interactive Tutoring Systems](#) 1633  
*Barnabas Takacs, Klara Csizinszky, Lajos Simon(Semmelweis Medical University, Hungary), Daniele Mazzei(University of Pisa, Italy)*
- FB04-3 [Design and development of the sorting system based on robot](#) 1639  
*Tuong Phuoc Tho, Nguyen Truong Thinh(Ho Chi Minh City University of Technology and Educational, Viet Nam)*
- FB04-4 [CAD-Based Pose Estimation for Random Bin-Picking of Multiple Objects Using a RGB-D Camera](#) 1645  
*Cheng-Hei Wu, Sin-Yi Jiang, Kai-Tai Song(National Chiao Tung University, Taiwan)*
- FB04-5 [Kinect Camera Sensor-based Object Tracking and Following of Four wheel Independent Steering Automatic Guided Vehicle Using Kalman Filter](#) 1650  
*Amruta Vinod Gulalkari(Pukyong National University, Korea, Republic of ), Dongbo Sheng, Pandu Sandi Pratama, Hak Kyeong Kim, Gi Sig Byun, Sang Bong Kim(Pukyong National Univesity, Korea, Republic of )*

#### FB05 Civil and Urban Systems

105, 13:30~15:00

- FB05-1 [Research on Decoupling and Driving Factors of Industrial Ecosystem in Jiangsu Province](#) 1656  
*wenwen Li, wenping wang, tiantian zhou, yingbo qin(Southeast University, China)*
- FB05-2 [Transforming unitary habitats to multi-habitats in the Ladkrabang District of Bangkok Metropolitan Area](#) 1662  
*Pastraporn - Thipayasothon(King Mongkut's Institute of Technology Ladkrabang, Thailand)*
- FB05-3 [Countermeasure Research of Green Logistics Development in Shandong Province](#) 1672

*Li Xue(Linyi University, China)*

- FB05-4 [Flux Oriented Control of Active Mass Damper Induction Motor for of Buildings Under Seismic Excitation](#) 1676  
*Lakhdar GUENFAF(USTHB University of Technology, Algeria), Sofiane Allaoua(University of etchnology, Algeria)*
- FB05-5 [Development of Electronic Library for Mobile Devices on Android Platforms](#) 1682  
*Aliya Ualievna Kalizhanova, Ainur Kozbakova, Samal Tolepbergenova(Kazakh National Technical University after K.I.Satpaev, Kazakhstan)*
- FB05-6 [GMV Control Algorithm for Structures under Recorded Strong Earthquakes including Soil Characteristics](#) 1687  
*Mohamed AZIRA, Lakhdar GUENFAF(LSEI/USTHB, Algeria)*

## FB06 Sensors and Instrumentation

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- FB06-1 [Implementation of Input Shaping Control to Reduce Residual Vibration in Industrial Network Motion System](#) 1693  
*Ha Quang Thinh Ngo(Ho Chi Minh city University of Technology, Viet Nam), Quoc Chi Nguyen(Ho Chi Minh City University of Technology, Viet Nam), Won-Ho Kim(Dong-Eui University, Korea, Republic of )*
- FB06-2 [Low-Cost Resolver-to-DC Converter](#) 1699  
*Jakkapun Tongcharoen, Wandee Petchmaneelumka, Vanchai Riewruja(Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Thailand)*
- FB06-3 [Design of an Advanced Wearable Sensor Platform for Multi Applications](#) 1703  
*Anh-Tuan Nguyen, Tung Hoang(Institute of Information Technology-Vietnam Academy of Science and Technology, Viet Nam), Quang-Vinh Thai, Quyen T.T. Bui(Institute of Information Technology, Vietnam Academy of Science and Technology, Viet Nam)*
- FB06-4 [Paddy Rice Moisture Content Meter](#) 1709  
*Wirot - Ponglangka(Faculty of Electrical Engineering, Rajamangala University of Technology Lanna ChiangRai,57120, Thailand)*

## FP01 Autonomous Vehicles

201~204, 16:30~18:00

- FP01-1 [The Cognitive Driving Framework: Joint Inference for Collision Prediction and Avoidance in Autonomous Vehicles](#) 1714  
*Alan J Hamlet, Patrick O Emami, Carl D Crane(University of Florida, United States)*
- FP01-2 [On-Road Vehicle Detection based on Appearance Features for Autonomous Vehicles](#) 1720  
*Tae young Lee, Jung ha Kim(University, Korea, Republic of )*
- FP01-3 [Night time Vehicle Detection By Using Color Information Based on Tail-Light](#) 1724  
*ZHANG JUNJIE junger, Jung-Ha Kim(Kookmin Unmanned vehicle reserch Lab(KUL), Korea, Republic of )*
- FP01-4 [Lateral Control for Autonomous Lane Keeping System on Highways](#) 1728  
*Chang Mook Kang, Jeehyung Lee, Sung Gu Yi, Soo Jung Jeon(Hanyang University, Korea, Republic of ), Youngseop Son(MANDO corporation, Korea, Republic of ), Wonhee Kim(Dong-A University, Korea, Republic of ), Seung-Hi Lee, Chung Choo Chung(Hanyang University, Korea, Republic of )*
- FP01-5 [Estimation of the Maximum Lateral Tire-Road Friction Coefficient Using the 6-DoF Sensor](#) 1734  
*Kyoungseok Han, Eunjae Lee, Seibum Choi(KAIST, Korea, Republic of )*

FP01-6	<a href="#">Power Management Strategy of Hybrid Electric Vehicle using Power Split Ratio Line Control Strategy based on Dynamic Programming</a> <i>Heeyun Lee, Sukwon Cha(Seoul National University, Korea, Republic of ), Yeong-il Park(Seoul National University of Science and Technology, Korea, Republic of )</i>	1739
FP01-7	<a href="#">Computed Torque Control of an Aerospace Craft Using Nonlinear Inverse Model and Rotation Matrix</a> <i>Jong Tai Jang, Hyeon Cheol Gong(Korea Aerospace Research Institute (KARI), Korea, Republic of ), Joon Lyoo(Chungnam National University (CNU), Korea, Republic of )</i>	1743
FP01-8	<a href="#">Simulation based on Motion Platform for Tilt Rotor UAV Shipboard Landing</a> <i>Changsun Yoo(Korea Aerospace Research Institute, Korea, Republic of )</i>	1747
FP01-9	<a href="#">Reducing Routing Overhead of AODV Protocol in Multi-hop Tactical Airborne Networks</a> <i>Modassir Ishfaq, Hasan Wajahat, Hyung Seok Kim(Sejong University, Korea, Republic of )</i>	1751
FP01-10	<a href="#">Mechanism and system design of MAV(micro aerial vehicle)-type wall-climbing robot for inspection of wind blades and non-flat surfaces</a> <i>Sungwook Jung, Hyun Myung(KAIST, Korea, Republic of ), Jae-Uk Shin(Rastech Inc., Korea, Republic of ), Wancheol Myeong(KAIST, Korea, Republic of )</i>	1757
FP01-11	<a href="#">Study on Multi-path Planning and Tracking Control of the UCAV Based on Evolutionary Algorithm</a> <i>Hanqiao Huang, Huan Zhou, Ya Wei Cai(Aeronautics and Astronautics Engineering College, Air Force Engineering University, China)</i>	1762
FP01-12	<a href="#">Actuator reconfiguration control of a robotic vehicle with four independent wheel driving</a> <i>Taewan Kim, Jaemann Park, Hyoujin Kim(Seoul National University, Korea, Republic of )</i>	1767
FP01-13	<a href="#">Vehicle Backward Driving Control with Obstacle Avoidance</a> <i>ChangWoo Son, Changsun Ahn(Pusan National University, Korea, Republic of )</i>	1771
FP01-14	<a href="#">Ground Vehicle Localization based on Inertial Measurement Signals</a> <i>JUHUI GIM, Changsun Ahn(Pusan National University, Korea, Republic of )</i>	1775
FP01-15	<a href="#">Pattern Recognition for Underwater Docking of Unmanned Underwater Vehicle (UUV)</a> <i>Jung-Tae Kim, Ji-Hong Li, Sung Chul Jee, Mun-Jik Lee, Hyung-Joo Kang(Korea Institute of Robot and Convergence, Korea, Republic of ), Min-Jae Kim(Agency of Defense Development, Korea, Republic of )</i>	1780
FP01-16	<a href="#">Sonar Image Processing Algorithms for Object Recognition using Hovering-type AUV "Cyclops"</a> <i>Jeonghwe Gu, Juhyun Pyo, Son-Cheol Yu(Pohang university of science and technology, Korea, Republic of )</i>	1785

## FP02 Bio-Systems

201~204, 16:30~18:00

FP02-17	<a href="#">EEG Characteristics Related to Prediction of What Others Prefer</a> <i>Jonghyeok Park, Taeyang Yang(UNIST, Korea, Republic of ), Hakjin Kim(Korea university, Korea, Republic of ), Sung-phil Kim(UNIST, Korea, Republic of )</i>	1790
FP02-18	<a href="#">Classification performance analysis of combined fNIRS-polygraph system using different temporal windows</a> <i>Muhammad Raheel Bhutta, Keum-Shik Hong(Pusan National University, Korea, Republic of ), Melissa Jiyoun Hong(FIRST 5 Santa Clara County, United States), Yun-Hee Kim(Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea, Republic of )</i>	1795
FP02-19	<a href="#">EEG Signal Analysis for Measuring the Quality of Virtual Reality</a>	1801

*Jinsung Chun, Netiwit Kaongoen(Korea Advanced Institute of Science and Technology, Korea, Republic of ), Sungho Jo(KAIST, Korea, Republic of )*

- FP02-20 [Experiments on classification of electroencephalography \(EEG\) signals in imagination of direction using a wireless portable EEG headset](#) 1805  
*Kenta Tomonaga, Sou Wakamizu, Jun Kobayashi(Kyushu Institute of Technology, Japan)*
- FP02-21 [Drowsiness Detection in Dorsolateral-Prefrontal Cortex using fNIRS for a Passive-BCI](#) 1811  
*Muhammad Jawad Khan, Keum-Shik Hong, Noman Naseer, Muhammad Raheel Bhutta(Pusan National University, Korea, Republic of )*
- FP02-22 [Comparison of Artificial Neural Network and Support Vector Machine Classifications for fNIRS-based BCI](#) 1817  
*Noman Naseer, Keum-Shik Hong, Muhammad Jawad Khan, Muhammad Raheel Bhutta(Pusan National University, Korea, Republic of )*
- FP02-23 [Separation of the Hemodynamic Responses in a Simultaneous Audio-Stimuli using ICA: An fNIRS Study](#) 1822  
*Hendrik Santosa, Keum-Shik Hong(Pusan National University, Korea, Republic of )*
- FP02-24 [Multi-Optodes Configuration for Measuring the Absolute Hemodynamic Response Using Spatially Resolved Spectroscopy Method: An fNIRS Study](#) 1827  
*Hoang-Dung Nguyen, Keum-Shik Hong(Pusan National University, Korea, Republic of )*
- FP02-25 [Ferrofluid Soft-robot Bio-inspired by Amoeba Locomotion](#) 1833  
*Hernando Leon-Rodriguez, Le Viet Ha, Seong Young Ko, Jong-Oh Park, Sukho Park(Chonnam National University, Korea, Republic of )*
- FP02-26 [Design and Evaluation Setup of a Novel Steerable Flexible Needle for Percutaneous Therapy](#) 1839  
*Van Khuyen Bui, Sukho Park(Chonnam National University, Korea, Republic of ), Jong Oh Park(Robot Research Initiative, Chonnam National University, Korea, Republic of ), Seong Young Ko(Chonnam National University, Korea, Republic of )*
- FP02-27 [A Paddling Mechaism based Robotic Colonoscope Harnessing Flexible Shaft](#) 1843  
*Seonggun Joe, Dongkyu Lee, Byungkyu Kim(Korea Aerospace University, Korea, Republic of )*
- FP02-28 [Characterization of polymer electrolyte membranes for application of glucose biofuel cell](#) 1846  
*Bohee Maeng, Jungyul Park(Sogang University, Korea, Republic of )*
- FP02-29 [BACTERIA-BASED MICROROBOT FOR CHEMOTAXIS DELIVERY](#) 1848  
*Keon Huh, Darong Oh, Hyung Jung Yoo, Byeonghwa Song, Dong-il Dan Cho, Jong-Mo Seo, Sung Jae Kim(Seoul National University, Korea, Republic of )*
- FP02-30 [Heat Transfer Simulation for Design of Electrothermal Bipolar Vessel Sealing Device](#) 1853  
*Seongjun Kim, Jaesoon Choi(Asan Medical Center, Korea, Republic of )*
- FP02-31 [Paper-Based Printed Circuit Boards](#) 1857  
*Kyungjin Kim, Hyangwon Jang, Chan Won Park(Kangwon National University, Korea, Republic of ), Hun-Kuk Park, Samjin Choi(Kyung Hee University, Korea, Republic of )*
- FP02-32 [A Low-Cost Ion Detecting Device with Paper-Based Disposal Sensor](#) 1860  
*Hyangwon Jang, Kyeongjin Kim, Chan Won Park(Kangwon National University, Korea, Republic of ), Gi-Ja Lee, Samjin Choi(Kyung Hee University, Korea, Republic of )*
- FP02-33 [High speed optical coherence tomography image guided femto-second laser cataract surgery system](#) 1863  
*Tae Joong Eom(Gwangju Institute of Science and Technology, Korea, Republic of ), Chang-Seok Kim(Pusan National Universtiy, Korea, Republic of ), Beop-Min Kim(Korea University, Korea, Republic of ), Choun Ki Joo(Seoul St. Mary's Hospital, Korea, Republic of )*
- FP02-34 [Triple cascade high output impedance current stimulator with dynamic element](#) 1866

### matching for retinal prostheses

*Haryong Song*(Chungnam National University, Korea, Republic of ), *Gyungtae Kim*(National Nanofab Center, Korea, Republic of ), *Hyounggho Ko*(Chungnam National University, Korea, Republic of )

FP02-35	<a href="#">EEG-SSVEP Signals Extraction with Nonlinear Adaptive Filter for Brain-Controlled Wheelchair</a>	1870
	<i>Arjon Turnip</i> , <i>Demi Soetraprawata</i> (Indonesian Institute of Sciences, Indonesia), <i>T. Agustinus Tamba</i> (Bandung Institute of Technology, Indonesia)	
FP02-36	<a href="#">Development of a Multi-nozzle Bioprinting System for 3D Tissue Structure Fabrication</a>	1874
	<i>Sanghoon Park</i> , <i>Seongjun Kim</i> , <i>Jaesoon Choi</i> (ASAN Medical Center, Korea, Republic of )	
FP02-37	<a href="#">Development of a Dance Rehabilitation System using Kinect and a Vibration Feedback Glove</a>	1878
	<i>Hyunkyoo Park</i> , <i>Jeongsoo Lee</i> , <i>Joonbum Bae</i> (UNIST, Korea, Republic of )	
FP02-38	<a href="#">Human-Machine Interaction Tool Review in Defense Area: Introduction of AWARE and DaViTo</a>	1881
	<i>Ji Hyun Yang</i> (Kookmin University, Korea, Republic of )	
FP02-39	<a href="#">Trajectory Image based Dynamic Gesture Recognition with Convolutional Neural Networks</a>	1885
	<i>Jiting Hu</i> , <i>Chunxiao Fan</i> , <i>Yue Ming</i> (Beijing University of Posts and Telecommunications, China)	
FP02-40	<a href="#">Development of a Postural Analysis System for Dinghy Yacht Simulators</a>	1890
	<i>Sangseung Kang</i> (ETRI, Korea, Republic of )	
FP02-41	<a href="#">Spasticity Mathematical Modeling in compliant with Modified Ashworth Scale and Modified Tardieu Scale</a>	1893
	<i>Noor Ayuni binti Che Zakaria</i> (Shibaura Institute of Technology, Japan)	
FP02-42	<a href="#">Study on Automatic Speed Adaptation Treadmills</a>	1898
	<i>Hee Jin Park</i> , <i>Hyun Ju Lee</i> (DGIST, Korea, Republic of ), <i>Tae Hun Kang</i> (Daegu Gyeongbuk Institute of Science & Technology, Korea, Republic of ), <i>Jeon IL Moon</i> (DGIST, Korea, Republic of )	
FP02-43	<a href="#">Trends in National Standardization of Usage Environment Safety and Performance Evaluation of Gait Training Equipment</a>	1901
	<i>Hyun Ju Lee</i> (DGIST, Korea, Republic of ), <i>Tae Hun Kang</i> (Daegu Gyeongbuk Institute of Science & Technology, Korea, Republic of ), <i>Hee Jin Park</i> , <i>Jeon IL Moon</i> (DGIST, Korea, Republic of )	
FP02-44	<a href="#">Towards a Unified Control Framework for Humanoid Robots and their Virtual Avatars in Physical and Virtual Reality-based Interactions</a>	1905
	<i>Barnabas Takacs</i> , <i>Gergely Richter</i> , <i>Klara Csizinszky</i> , <i>Lajos Simon</i> (Semmelweis Medical University, Hungary), <i>Daniele Mazzei</i> (University of Pisa, Italy)	

## FP03 Industrial Applications

201~204, 16:30~18:00

FP03-45	<a href="#">An Study on the Energy Regeneration System of Boom for Hybrid Hydraulic Excavator</a>	1910
	<i>YU YINGXIAO</i> , <i>Debdattta Das</i> , <i>B. N. M Truong</i> , <i>Kyoung Kwan Ahn</i> (University of Ulsan, Korea, Republic of )	
FP03-46	<a href="#">Investigation on optimization the performance of a wave energy converter using Dielectric electro-active polymers</a>	1915
	<i>Phan Cong Binh</i> , <i>Kyoung Kwan Ahn</i> (Ulsan University, Korea, Republic of )	
FP03-47	<a href="#">Modeling and Controlling the Descent Operation of a Fish Robot using Neural Networks</a>	1920
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FP03-69	<a href="#">Nonlinear Tire Inverse Model for Integrated Chassis Control System</a> <i>Boryeon Kang(Pusan University, Korea, Republic of ), Wanki Cho(Hyundai Motor Group, Korea, Republic of ), Changsun Ahn(Pusan National Univ., Korea, Republic of )</i>	2026
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FP03-72	<a href="#">Bridge for Exchange of Data/Service between Robot Software Platforms - OPRoS and ROS</a> <i>KiWon Lee, Hong Seong Park(Kangwon National University, Korea, Republic of )</i>	2043
FP03-73	<a href="#">Wireless packet header compression techniques for Ship Area Sensor Network(SASN)</a> <i>Sang-Joon Nam, Jonggu Kang, Daekeun Moon(Hyundai Heavy Industries, Korea, Republic of )</i>	2048
FP03-74	<a href="#">The Development of Remote Maintenance Technology based on Voyage Data Recorder</a> <i>Chanmin Jung, Jonggu Kang, Minjung Jin(Hyundai Heavy Industries, Korea, Republic of )</i>	2053
FP03-75	<a href="#">3-Dimensional Position Control Scheme for Mobile Harbor Crane</a> <i>Dongho Kim(KAIST, Korea, Republic of )</i>	2058
FP03-76	<a href="#">A Study on Controlling of Vibration Characteristic of the Harmonic Drive to Obtain the Optimized Performance</a> <i>In-Gyu Park, Il-Kyeom Kim, Min-Gyu Kim(Korea Institute of Robot and Convergence, Korea, Republic of )</i>	2062
FP03-77	<a href="#">A Field Calibration Method of Robotic Inspection System for Coating Thickness</a> <i>Xiang WU, Tianfei CHEN(Henan University of Technology, China)</i>	2066

FP03-78	<a href="#">Model Predictive Control for the Power Control of Three-Phase AC/DC Converters using a Disturbance Observer</a> <i>Seok-Kyoon Kim(LG Electronics, Korea, Republic of ), <u>Young Il Lee</u>(SeoulTech, Korea, Republic of )</i>	2070
FP03-79	<a href="#">Applying of Process Management in the “e-license” project</a> <i><u>Didar Yedilkhan</u>, Gulnara Bektemysova(International Information Technology university, Kazakhstan)</i>	2076
FP03-80	<a href="#">A study on temperature control of induction brazing coil</a> <i><u>Sung Ho Ahn</u>, Jntae Hong, Chang Young Joung, Sung Ho Heo, Tae Ho Yang, Seo Yun Jang(Korea Atomic Energy Research Institute, Korea, Republic of )</i>	2080
FP03-81	<a href="#">Automatic Cell Production for Cellular Phone Packing Using Two Dual-arm Robots</a> <i><u>Hyunmin Do</u>(KIMM, Korea, Republic of )</i>	2083
FP03-82	<a href="#">Analysis of Precision Positioning Of Multi-Axis Robot System</a> <i><u>Youn-Ho Choi</u>(DGIST, Korea, Republic of ), Duck-Han Sun(Presto Solution, Korea, Republic of ), Oh-Seok Kwon(DGIST, Korea, Republic of )</i>	2087
FP03-83	<a href="#">Operation Reliability Evaluation with Control Patterns of Digital Control Systems</a> <i><u>Kwang Dae Lee</u>, Hee Taek Lim(Central Research Institute, KHNP, Korea, Republic of )</i>	2091
FP03-84	<a href="#">Performance Testing of Harmonic Reduction Gear with Plastic Mechanical Components</a> <i><u>In-Gyu Park</u>, Min-Gyu Kim(Korea Institute of Robot and Convergence, Korea, Republic of )</i>	2093
FP03-85	<a href="#">eCAT based teaching pendant for collaborative robots</a> <i><u>geun-youn kim</u>, daesik kwak(DAINCUBE, Korea, Republic of )</i>	2095
FP03-86	<a href="#">HANBACK ELECTRONICS COMPANY PROFILE</a> <i><u>Angela Yoon</u>(HANBACK ELECTRONICS.CO., LTD., Korea, Republic of )</i>	2101
FP03-87	<a href="#">Smart Teaching Pendant for On/Offline Programming and Direct Teaching of Industrial Robots</a> <i><u>Jonghoon Park</u>, Guhee Jung(Neuromeka, Korea, Republic of )</i>	2108