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<a href="#">Development of a Braille Unit using Piezoelectric Linear Motors</a>	1916
Jae-Bok Song, Hyun-Cheol Cho and Byeong-Sang Kim	
<a href="#">Tactile Sensing using a Force Model of a Finger Tip</a>	1921
Oh Seungyong, Choi Junho, Kang Sungchul and Kim Euntai	
<a href="#">Quantitative Analysis of Vibrotactile Threshold and the Effect of Vibration Frequency Difference on Tactile Perception</a>	1926
Seungchan Kim, Soo-Chul Lim, Ki-Uk Kyung and Dong-Soo Kwon	
<a href="#">Design and Psychophysical Evaluation of Pneumatic Tactile Display</a>	1932
Yeongmi Kim, Ian Oakley and Jeha Ryu	

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<a href="#">Adaptive Subpixel Estimation of Land Cover in a Remotely Sensed Multispectral Image</a>	1938
Senya Kiyasu, Kazunori Terashima, Seiji Hotta and Sueharu Miyahara	
<a href="#">Development of a Flexible Displacement Sensor using Nylon String Coated with Carbon and Its Application for McKibben Actuator</a>	1942
Iku Hamamoto, Tetsuya Akagi, Shujiro Dohta and Hisashi Matsushita	
<a href="#">Sensor Node Localization Based on Inequalities of Radio Field Intensity -Comparison of Simulation and Experiments-</a>	1946
Shintaro Yamada, Jun-ya Takayama and Shinji Ohyama	
<a href="#">Precise Oscillation Loop for a Resonant Type MEMS Inertial Sensors</a>	1952
Chul Hyun, Jang Gyu Lee and Taesam Kang	
<a href="#">Design of Capacitive Sensor for Concentration Measurement</a>	1958
Witsarut Sriratana, Lerdlekha Tanachaikhan and Natee Thong-un	
<a href="#">Minimization of L2-Sensitivity for Linear Discrete-Time Systems Subject to L2-Scaling Constraints Using a Lagrange Function and a Bisection Method</a>	1962
Takao Hinamoto and Toru Oumi	

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Jeonghong Park, Dongin Park, Seungki Cho, Youngwoo Park, Yunho Ko and Jihong Lee	
<a href="#">Measurement of the 3-D Shape and Refractive Index of a Transparent Object by a Laser Rangefinder</a>	1973
Daisuke Narita and Mitsuru Baba	
<a href="#">Measurement of the Speed, the Height and the Direction of Sea Waves Using an Optical Range Sensor</a>	1979
Kentaro Oka	
<a href="#">Onboard Measurement Technology on Probe Train for Signaling Equipment</a>	1985
Sei Takahashi and Hideo Nakamura	

[Measuring Myoelectric Potential Patterns Based on Two-Dimensional Signal Transmission Technology](#)

1990

Yasutoshi Makino, Akimasa Okada and Hiroyuki Shinoda

[The low-cost Instrument with LabVIEW And DB25](#)

1995

Nitipong Somchaiwong, Witoon Prommee and Suchitha Jeenawong

## TE11 : OS056 Navigation Technologies for Intelligent Mobile Robot

[Obstacle Detection and Feature Extraction using 2.5D Range Sensor System](#)

1999

Sooyong Lee, Hyunwoong Park and Wan Kyun Chung

[Visual SLAM by Single-Camera Catadioptric Stereo](#)

2004

Jungho Kim

[Angular Uncertainty Reduction of Sonar Range Data for a Grid-based Map Building](#)

2009

Byung Jae Park, Se-Jin Lee, Jong-Hwan Lim and Dong-Woo Cho

[A Practical Solution to SLAM and Navigation in Home Environment](#)

2014

Jinwoo Choi, Kyoungmin Lee, Sunghwan Ahn, Minyong Choi and Wan Kyun Chung

[A Practical Roadmap for the Path Planning of Mobile Robots in Rectilinear Environments](#)

2021

Nakju Doh, Chanki Kim, Sang Ik Na, Wonpil Yu, Youngjo Cho and Wan Kyun Chung

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[Robot Middleware and its Standardization in OMG -- Report on OMG Technical Meeting in St. Louis --](#)

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Tetsuo Kotoku and Makoto Mizukawa

[Enhancement of Versatility of the Agent Robot Operation Environment in the Physical Agent System- Proposal of Data Server Framework-](#)

2031

Sumiko Takeda, Takenori Tsukikawa, Toshihiro Inukai, Hirohisa Tezuka, Ken-ichiro Shimokura and Makoto Mizukawa

[Development of RT-Middleware for Image Recognition Module](#)

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[Development of the Robot Power Management System Adapting to Tasks and Environments -The design guideline of the Power Control System Applied to the Distributed-Control Robot-](#)

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[Multi-functional Capsule Endoscope for Gastro-intestinal Tract](#)

Sukho Park, Jongoh Park, Hyunjun Park, Sungjin Park, Changyeol Jee, Sangkyu Park and Byungkyu Kim

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[An Approach to the Next Generation Robot System](#)

Yasuo Kishi, Kazuhiko Yokoyama and Kenji Matsukuma

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[Mobile Robot Localization Using a Gyroscope and Constrained Kalman Filter](#)

Hyun Myung, Hyoung-Ki Lee, Kiwan Choi, Seokwon Bang, YeunBae Kim and Sangryong Kim

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[Evolutionary Approach to design Behavior Generator of Communication Robot](#)

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Kyoung Dal Kim, Moon Sik Kim, Young Geun Moon and Min Cheol Lee

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[The Foundation-Applied Skin Color Prediction Via SVD-Based Neural Network](#)

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Kazuyuki Kobayashi, Kajiro Watanabe, Naruhito Toyoda and Hironobu Yoshikawa

[Fire Detection using Neural Network](#)

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Vittaya Tipsuwanporn and Viriya Krongratana

[An Approach to Plant Identification Technology: Development of Lignin Pyrolysis Gas Chromatography and Pattern Recognition](#)

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Tomoo Aoyama, Ryo Akashi, Hidenori Umeno Umeno and Umpei Nagashima

[Stock Price Forecasting using Back Propagation Neural Networks with Time and Profit Based Adjusted Weight Factors](#)

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Hoon Heo, Shingo Mabu, Kotaro Hirasawa and Jinglu Hu	
<a href="#"><u>Optimal PWM for Minimization of Total Harmonic Current Distortion in High-Power Induction Motors using Genetic Algorithms</u></a>	1780
Arash Sayyah, Mitra Aflaki and Alireza Rezazade	
<a href="#"><u>Multiobjective Fitness Functions for Stable Marriage Problem System using Genetic Algorithm</u></a>	1786
Anh Vien Ngo and Tae Choong Chung	
<a href="#"><u>Evolutionary method of Genetic Network Programing Considering Breadth and Depth</u></a>	1790
Shinji Eto	
<a href="#"><u>Constrained Global Optimization Problems by RasID-GA</u></a>	1795
Dongkyu Sohn, Shingo Mabu, Kotaro Hirasawa and Jinglu HU	
<a href="#"><u>Adaptive Genetic Algorithm Observer and its Application to a Trailer Truck Control System</u></a>	1801
Hiroshi kinjo, Moriyoshi Maeshiro, Eiho Uezato and Tetsuhiko Yamamoto	

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<a href="#"><u>An Emergence Support System with Variable Structure based on Discrete Event Models</u></a>	1806
Makoto Katoh	
<a href="#"><u>The Energy Navigation System and Its Aapplication Eexample</u></a>	1811
Mitsunori Fukuzawa, Ken-ichi Ohara and Tetsuya Ohtani	
<a href="#"><u>A New Topology of Fault Current Limiter and Its Control Strategy</u></a>	1816
Mehrdad Tarafdar and Mehdi Abapour	
<a href="#"><u>Adaptive Nonlinear Backstepping Control of SEDCM under Velocity Constraint</u></a>	1821
Sun Im and Byeong-Seok Lee	
<a href="#"><u>On a Support System for Finding Icons by Estimating User's Recognition on Structure of Folders</u></a>	1827
Kohei Matsuda, Tomoyuki Watanabe, Norikazu Ikoma, Hideaki Kawano and Hiroshi Maeda	
<a href="#"><u>Development of a Controller Area Network Interface Unit and Its Application to a Fuel Cell Hybrid Electric Vehicle</u></a>	1831
Bong-Ju Ahn, Gu-Min Jeong, Hyun-Sik Ahn, Byung-Ryeul Park, Young-Hoon Ki and Do-Hyun Kim	

## SP20 : Factory Automation & Network Technology(2)

<a href="#"><u>A Multiresolution Mesh Processing System for Efficient CAE</u></a>	1836
Hiroaki Date, Satoshi Kanai, Takeshi Kishinami and Ichiro Nishigaki	
<a href="#"><u>A Survey of the Use of Wireless Fieldbus for Industrial Environments</u></a>	1841
Matkurbanov Pulat, SeungKi Lee and Dong-Sung Kim	

[Parametric Deformation of Mesh Models for Efficient CAE](#)

1848

Gaku Mizuno, Hiroaki Date, Satoshi Kanai, Takeshi Kishinami and Masahiko Onosato

[A Petri Net based approach for the Synthesis of Parts<sub>i</sub>- Controllers for Reconfigurable Manufacturing Systems](#)

1853

Eun Joo Lee, Armand TOGUYENI and Nathalie DAGOUMAU

[A Study on Design Review of the Control Performance of the Air Conditioning to Prevent Room Pressure Change Troubles](#)

1859

Daiki Tanaka, Takamitsu Koike, Nobuhiro Tanaka, Takayuki Miyake, Shigeyuki Tateno and Hisayoshi Matsuyama

## SP21 : Vision(5)

[Object Recognition using Simultaneous Pattern-Matching in Virtual Environment](#)

1865

Yusuke Takahashi, Yuta Muramatsu and Kiyotaka Kato

[Camera Vision System for Automation of Sub-assembly Line in Shipbuilding](#)

1870

Doh Young Chil and Yoon Jae Woong

[Spatial Merging for Face Detection](#)

1873

Hiromasa Takatsuka, Masayuki Tanaka and Masatoshi Okutomi

[Face Tracking System using Embedded Computer for Robot System](#)

1879

KyoungKwan Ahn and Jong-Il Yoon

[Color-Based Face Detection using Combination of Modified Local Binary Patterns and Embedded Hidden Markov Models](#)

1884

Phuong Trinh Pham Ngoc and Kang-Hyun Jo

## SE01 : Identification

[Identification of Disappeared Volterra Kernels of M-sequence Correlation Method for Nonlinear System](#)

1890

Eiji Nishiyama, Chisako Nishijima, Hiroshi Harada and Hiroshi Kashiwagi

[Time Varying System Identification with Immune Based Evolutionary Computation](#)

1894

Makoto Wakizono, Toshiharu Hatanaka and Katsuji Uosaki

[Nonlinear System Identification based on Support Vector Machine using Particle Swarm Optimization](#)

1900

Byung-hwa Lee, Sang-un Kim, Jin-wook Seok and Sangchul Won

[A Parameter Identification Based on Tuning of a Controller with One-Shot Experimental data](#)

1905

Makoto Miyachi, Osamu Kaneko and Takao Fujii

[Extracting the Motion Pattern of the Players from a Video Stream of the Football Game](#)

1910

Aye Papa

[Particle Swarm Optimization for Identification of GMS Friction Model](#)

1914

Itthisek Nilkhamhang and Akira Sano

## SE02 : Fuzzy Control

[Facial Visualization for Robotic Indicator by using Fuzzy Emotional System](#)

1920



Tuanjai Archevapanich, Boonchana Purahong, Mongkorn Klingajay and Pitikhate Sooraksa	
<a href="#">Energy Saving of Three-Phase Induction Motor using Fuzzy Controller</a>	1924
Sathit Intajag	
<a href="#">Integrated Development Platform for Design of Fuzzy Inference System using RecurDyn and Simulink</a>	1929
Chang-Woo Hong, Gyu-Jong Choi and Doo-Sung Ahn	
<a href="#">Fuzzy I-PD Controller for Level Control</a>	1935
Wicharn Chatrattanawuth, Napatpong Suksariwattanagul, Taworn Benjanarasuth and Jongkol Ngamwiwit	
<a href="#">Efficient Fuzzy-MPC for Nonlinear Systems : Rule Rejection</a>	1939
Sangsu Yeh, Deahyun Ji, Woojong Yoo and Sangchul Won	
<a href="#">A Low Cost Absolute 2D Position Calculation System</a>	1944
Jerome gaysse	

## SE03 : Model Reference Control

<a href="#">Disturbance Attenuation in Model Following Designs of a Class of Second-order Systems£°A Parametric Approach</a>	1948
Guang-Ren Duan and Ling Huang	
<a href="#">Robust Model Matching Design for a Two Link Inverted Pendulum</a>	1954
Yoichi Ichihashi, Nobuhiro Shukuin and Toshio Eisaka	
<a href="#">Design of piecewise Linear LQ Control by Multivariable Circle Criterion for Dynamic Positioning System</a>	1958
Noriyuki Akasaka	
<a href="#">An Improvement of the Simple Model Matching Method</a>	1964
Takahiro Horii and Yoshihiro Yamamoto	
<a href="#">State Tracking of Uncertain Dynamic Systems with Actuator Failures Using Model Based Adaptive Control</a>	1970
Fuat Gurleyen	

## SE04 : Filter and Other

<a href="#">Current-controlled Current-mode Biquadratic Filter with two inputs and three outputs Using Multiple-Output FTFNs</a>	1977
Worapong Tangsritat, Tattaya Pukkalanun and Jirawat Hirunporn	
<a href="#">CCCCII-based High-output Impedance Current-mode Universal Filter Employing Only Grounded Capacitors</a>	1981
Worapong Tangsritat, Niwat Jangsamsi and Tattaya Pukkalanun	
<a href="#">An Elliptic Micro-Power Continuous-Time CMOS Filter.</a>	1985
Sakol Udomsiri, Pattana Intani and Veerasak Mudvan	
<a href="#">TISO Cascadable Current-Mode Multifunction Filter Employing Current Differencing Transconductance Amplifiers</a>	1988
Wason Tanjaroen, Worapong Tangsritat and Teerasilapa Dumawipata	
<a href="#">Digital Image Restoration using Posterior Distribution</a>	1992
Kusworo Adi, Tati L.R Mengko, Andriyan Bayu Suksmono and Donny Danudirdjo	
<a href="#">Fast Face Extraction from Near-Infrared Camera Images</a>	1996
Yasue Mitsukura and Minoru Fukumi	

## SE05 : Applications

### [Duplicate a Blank Key using Image Processing](#)

Voraneti Itthisupornrat

2000

### [High Performance and High Efficiency Memory Management System for H.264/AVC Application in the Dual-Core Platform](#)

Nairan Zhang, Mo Li, Yangyang Li and Wuchen Wu

2004

### [Active Contour Model with Splitting Characteristics for Multiple Area Extractions and its Hardware Realization](#)

Toshio Miaki, Takao Kawamura and Kazunori Sugahara

2008

## SE06 : OS082 Advances in Process Control and Safety(2)

### [Design and Control of HIDIc](#)

Yoshihiro Hashimoto, Feng Jaing, Jacy Quan, Yutaka Ota and Takashi Hamaguchi

2012

### [Softsensor Development through Two-Stage Subspace Identification](#)

Seunghyun Lee, Manabu Kano, Kosuke Ando and Shinji Hasebe

2016

### [Intelligent Topology Analyzer for Improved Plant Operation](#)

Hossam A.Gabbar

2022

### [Development of Root Cause Analyzer for Intelligent Fault Diagnosis](#)

Hossam A.Gabbar

2028

### [Operation Profile Optimization for Batch Process through Wavelet Analysis and Multivariate Analysis](#)

Manabu Kano, Koichi Fujiwara, Shinji Hasebe and Hiromu Ohno

2034

## SE07 : Sensing and Electric Devices

### [A Simple Resolver-to-DC Converter](#)

Anucha Kaewpoonsuk, Wandee Petchmaneelumka, Thawatchai Kamsri and Vanchai Riewruja

2039

### [A Current-mode CMOS Sample-and-Hold Circuit for ADC](#)

Phinet Mahatthumthanant, Thawatchai Kamsri, Wandee Petchmaneelumka, Tiparat Sungkabunchoo and Vanchai Riewruja

2043

### [CDBA-based Multiphase Sinusoidal Oscillator Using Grounded Capacitors](#)

Sumaytee Pisitchalermping, Worapong Tangsrirat and Wanlop Surakamponorn

2047

### [NPN-based Current Differencing Buffered Amplifier and Its Application](#)

Visawa Sawangarom, Worapong Tangsrirat and Wanlop Surakamponorn

2051

### [Development of Vision based Measurement System for Hand Motion](#)

Sunao Takeuchi, Satoshi Suzuki and Masayoshi Kakikura

2055

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<a href="#">OTA-based Gray-code Algorithmic ADC</a>	2072
Amphawan Chaikla, Somjai Arayawat and Vanchai Riewruja	

## SE09 : Inspection

<a href="#">Non-Destructive Inspection of Concrete Structures Using an Acceleration Pickup</a>	2077
Masayuki Okamoto	
<a href="#">Non Destructive Inspection of Multiple Concrete Cracks using Ultrasonic Sensor</a>	2082
Muhammed Islam and Shogo Tanaka	
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Masataka Togawa and Shogo Tanaka	
<a href="#">Surface Roughness Evaluation by Laser Speckle</a>	2094
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<a href="#">A Vision System for Identifying Structural Vibration in Civil Engineering Constructions</a>	2098
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<a href="#"><u>Local Grid Map Based Rough Localization For The Mobile Robot By Using Self-Organization Map</u></a>	2204
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[A Policy-Improving System with a Mixture of Bayesian Networks Adapting Agents to Continuously Changing Environments](#)

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