

Contents

Autonomous Control of Mobile Robots for Opening Doors Based on Multi-sensor Fusion	1
Xiaomei Ma and Chaoli Wang	
Linear Active Disturbance Rejection Control Approach for Load Frequency Control Problem Using Diminishing Step Fruit Fly Algorithm	9
Congzhi Huang and Yan Li	
Local Zernike Moment and Multiscale Patch-Based LPQ for Face Recognition	19
Xiaoyu Sun, Xiaoyan Fu, Zhuhong Shao, Yuanyuan Shang and Hui Ding	
Design and Control of the Upright Controllable Force Sub-system for the Suspended Gravity Compensation System	29
Jiao Jia, Yingmin Jia and Shihao Sun	
Fading Unscented-Extended Kalman Filter for Multiple Targets Tracking with Symmetric Equations of Nonlinear Measurements	37
Cui Zhang, Yingmin Jia and Changqing Chen	
RSS-Based Target Tracking with Unknown Path Loss Exponent	51
Jian Zhang, Wenling Li and Jian Sun	
Further Analysis on Observability of Stochastic Periodic Systems with Application to Robust Control	61
Hongji Ma, Ting Hou and Jie Wang	
Development of a Simulation Platform for Spacecraft Omni- directional Rendezvous	77
Shihao Sun, Hao Li, Yingmin Jia and Changqing Chen	
Stabilization of Perturbed Linear Systems by an Event-Triggered Robust H_∞ Controller	89
Hao Jiang, Yingmin Jia and Changqing Chen	

Consensus of Linear Multi-agent Systems with Persistent Disturbances	101
Shaoyan Guo, Lipo Mo and Tingting Pan	
Cluster Synchronization in Complex Dynamical Networks with Linear Generalized Synchronization in Each Community.	111
Yan Liu, Zhengquan Yang, Jiezhi Wang, Qing Zhang and Zengqiang Chen	
Output Feedback Stabilization of Stochastic Non-holonomic Mobile Robots	121
Wenli Feng, Hongyu Wei, Hongmei Zhang and Dongkai Zhang	
Research on Grasp Force Control of Apple-Picking Robot Based on Improved Impedance Control	133
Wei Tang, Wei Ji, Xiangli Meng, Bo Xu, Dean Zhao and Shihong Ding	
Adaptive Neural Network Control for a Class of Nonlinear Systems	143
Chao Yang, Yingmin Jia and Changqing Chen	
Robust Coupling-Observer-Based Linear Quadratic Regulator for Air-Breathing Hypersonic Vehicles with Flexible Dynamics and Parameter Uncertainties	153
Na Wang, Lin Zhao, Chong Lin and Yumei Ma	
An Intelligent Surveillance System for Crowded Abnormal Detection . . .	163
Xin Tan, Chao Zhang, Chubin Zhuang and Hongpeng Yin	
The Active Disturbance Rejection Control with a Square-Root Amplifier for Non-minimum Phase System.	175
Tong Wu, Weicun Zhang and Weidong Li	
Human Action Recognition Based on Multifeature Fusion	183
Shasha Zhang, Weicun Zhang and Yunluo Li	
Adaptive Blocks-Based Target Tracking Method Fusing Color Histogram and SURF Features	193
Ruilin Cao, Qing Li, Weicun Zhang, Zhao Pei and Yichang Liu	
Study on Camera Calibration for Binocular Stereovision Based on Matlab	201
Haibo Liu, Yujie Dong and Fuzhong Wang	
The Structure Shaping of ITAE Optimal Control System Base on PSO	211
Yuzhen Zhang, Qing Li, Weicun Zhang, Yichang Liu and Zhao Pei	
Vehicle Queue Detection Method Based on Aerial Video Image Processing	219
Haiyang Yu, Yawen Hu and Hongyu Guo	

The Design and Application of a Manipulator's Motion Controller for Changing CNC Machine Tools	235
Wenhao Tong, Weicun Zhang and Weidong Li	
Adaptive Terminal Sliding Mode Control for Servo Systems with Nonlinear Compensation	245
Tianyi Zeng, Xuemei Ren, Wei Zhao and Shubo Wang	
Two-Stage Recursive Least Squares Parameter Identification for Cascade Systems with Dead Zone	255
Linwei Li, Xuemei Ren, Wei Zhao and Minlin Wang	
Robust Tracking Control for Flexible Space End Effector	267
Yi Li, Xiaodong Zhao and Yingmin Jia	
Robust Control for Elliptical Orbit Spacecraft Rendezvous Using Implicit Lyapunov Function	277
Xiwen Tian, Mingdong Hou, Yingmin Jia and Changqing Chen	
Dynamical Behaviors in Coupled FitzHugh-Nagumo Neural Systems with Time Delays	289
Yuan Zhang, Lan Xiang and Jin Zhou	
A Novel Algorithm Based on Avoid Determining Noise Threshold in DENCLUE	301
Ke Zhang, Yingzhi Xiong, Lei Huang and Yi Chai	
Reactive Power Predictive Compensation Strategy for Heavy DC Hoist	313
CaiXia Gao, FuZhong Wang and ZiYi Fu	
Sensorless Vector Control of PMSM Based on Improved Sliding Mode Observer	323
Fangqiang Mu, Bo Xu, Guoding Shi, Wei Ji and Shihong Ding	
Tracking Control of a Nonminimum Phase Inverted Pendulum	335
Linqi Ye, Qun Zong, Xiuyun Zhang, Dandan Wang and Qi Dong	
Research on Sliding-Mode Control Technology of High-Performance LED Lighting Circuit	349
Kai-he Sun, Song-yin Cao, Yu Fang and Jin-yan Zheng	
Globally Exponentially Stable Triangle Formation Control of Multi-robot Systems	361
Qin Wang, Qingguang Hua and Zuwen Chen	
An Improved Algorithm for Siphons and Minimal Siphons in Petri Nets Based on Semi-tensor Product of Matrices	371
Jingjing Wang, Xiaoguang Han, Zengqiang Chen and Qing Zhang	

A Novel MPPT Control Algorithm Based on Peak Current	387
Mingming Ma, Yu Fang, Jinyan Zheng, Songyin Cao and Yong Xie	
Distributed Finite-Time Formation Control for Multiple Nonholonomic Mobile Robots	399
Miao Li, Zhongxin Liu and Zengqiang Chen	
Adaptive Tracking Control for Differential-Drive Mobile Robots with Multi Constraint Conditions	417
Liang Yang and Yingmin Jia	
Point Cloud Segmentation Based on FPFH Features	427
Tianyu Zhao, Haisheng Li, Qiang Cai and Qian Cao	
Salient Object Detection Based on RGBD Images	437
Qiang Cai, Liwei Wei, Haisheng Li and Jian Cao	
FPGA Design of MB-OFDM UWB Baseband System Based on Parallel Structure	445
Shi-jie Ren, Xin Su, Zhan Xu and Xiang-yuan Bu	
ST Segment Deviation Parameter Statistic Based on Spectrogram	455
Shi-jie Ren, Xin Su, Zhan Xu and Xiang-yuan Bu	
Event-Triggered Consensus Control of Nonlinear Multi-agent Systems with External Disturbance	467
Yang Liu, Jun Gao and Xiaohui Hou	
Integrated Design of Fault Diagnosis and Reconfiguration for Satellite Control System	477
Xijun Liu and Chengrui Liu	
Distributed Optimization Over Weight-Balanced Digraphs with Event-Triggered Communication	489
Xiaowei Pan, Zhongxin Liu and Zengqiang Chen	
A Novel Safety Assessment Approach Based on Evolutionary Clustering Learning	505
Yi Chai, Zhaodong Liu, Hongpeng Yin and Yanxia Li	
Quantified Living Habits Using RTI Based Target Footprint Data	515
Weijia Zhang, Zhichao Tan, Guoli Wang and Xuemei Guo	
Decoupled Tracking Control for a Flexible Multi-body Satellite with Solar Panels and Manipulator	529
Chaoyi Shi and Yong Wang	
Nonlinear Servo Motion Control Based on Unknown Input Observer	541
Ligang Wang, Yunpeng Li, Jing Na, Guanbin Gao and Qiang Chen	

**H_∞ Filtering for a Class of Discrete-Time Markovian
Jump Systems with Missing Measurements 551**
Yunyun Liu and Jinxing Lin

**Cascade STATCOM Power Factor Automatic Compensation
System 563**
Yongdong Guo

Voltage-Balanced Control for a Cascaded 3H-Bridge Rectifier 573
Ziyi Fu, Boxiang Zhang and Xuejuan Xiong

**Autonomous Navigation for Spacecraft Around Mars Based
on Information Fusion with Cross-Correlation Noise. 583**
Jianjun Li and Dayi Wang

**The CUDA-Based Multi-frame Images Parallel Fast Processing
Method. 593**
Yiyao An, Maoyun Guo, Yi Chai and Haoxin Liang

Blind Source Separation Based on Mixed Integer Programming 599
Xiaocan Fan and Lizhen Shao

**A Visual Feedback Model-Free Design for Robust Tracking
of Nonholonomic Mobile Robots 607**
Hui Chen, Hua Chen, Yibin Wang and Fang Yang

**Short-Term Solar Irradiance Forecasting Using Neural
Network and Genetic Algorithm 619**
Anping Bao, Shumin Fei and Minghu Zhong

Proceedings of 2016 Chinese Intelligent Systems
Conference

Volume II

Jia, Y.; Du, J.; Zhang, W.; Li, H. (Eds.)

2016, IX, 627 p. 287 illus., 171 illus. in color., Hardcover

ISBN: 978-981-10-2334-7