

## Contents

- 1** Dynamic stability of quadruped robot walking on slope with trot gait  
*Lei Jingtiao (雷静桃), Ren Mingming*
- 10** Analysis on the crossing obstacle of wheel-track hybrid mobile robot  
*Shuai Liguo (帅立国), Fei Yanqiong, Zheng Liyuan, Gong Pengwei*
- 16** An improved potential field method for mobile robot navigation  
*Li Guangsheng (李广胜), Chou Wusheng*
- 24** Global optimization of manipulator base placement by means of rapidly-exploring random tree  
*Zhao Jing (赵京), Hu Weijian, Shang Hong, Du Bin*
- 30** Robust visual servoing based Chinese calligraphy on a humanoid robot  
*Ma Zhe (马哲), Xiang Zhenzhen, Su Jianbo*
- 38** Robust SLAM using square-root cubature Kalman filter and Huber's GM-estimator  
*Xu Weijun (徐巍军), Jiang Rongxin, Xie Li, Tian Xiang, Chen Yaowu*
- 47** An effective estimation of distribution algorithm for parallel litho machine scheduling with reticle constraints  
*Zhou Binghai (周炳海), Zhong Zhenyi*
- 55** 3D structure parameterization design and modeling for irregular structure of slope bottom  
*Zeng Qingtian (曾庆田), Wang Liguan*
- 63** Time difference based measurement of ultrasonic cavitations in wastewater treatment  
*Zhu Changping (朱昌平), Wang Bin, Liu Changwei, Gong Runhang, Liu Jing, Ren Qinggong, Han Qingbang, Huang Bo, Shan Minglei, Tang Yibin, Ni Caihua*
- 67** CNN intelligent early warning for apple skin lesion image acquired by infrared video sensors  
*Tan Wenxue (谭文学), Zhao Chunjiang, Wu Huarui*
- 75** Electromechanical dynamics analysis and simulation on rollforming equipment with both sides variable cross-section  
*Yan Jun (闫军), Li Qiang, Zhou Zhixia*
- 82** Mixing matrix estimation of underdetermined blind source separation based on the linear aggregation characteristic of observation signals  
*Wen Jiangtao (温江涛), Zhao Qianyun, Sun Jiedi*
- 90** CSMCCVA: Framework of cross-modal semantic mapping based on cognitive computing of visual and auditory sensations  
*Liu Yang (刘扬), Zheng Fengbin, Zuo Xianyu*
- 99** Selective transmission and channel estimation in massive MIMO systems  
*Yang Ruizhe (杨睿哲), Zong Liang, Si Pengbo, Ma Dawei, Zhang Yanhua*
- 107** Research on the adaptive hybrid search tree anti-collision algorithm in RFID system  
*Jin Xiaofang (靳晓芳), Liu Mengxuan, Shao Min, Jin Libiao, Huang Xianglin*