

2014 International Conference on Advanced Robotics and Intelligent Systems

(ARIS 2014)

**Taipei, Taiwan
6 – 8 June 2014**

**IEEE Catalog Number: CFP14ARI-POD
ISBN: 978-1-4799-5847-4**

Table of Content

| | | | |
|-----------|--|---|----|
| 01 | Automatic Entropy-based Femur Segmentation and Fast Length Measurement for Fetal Ultrasound Images | Ching-Wei Wang | 1 |
| 02 | Active suppression control of diaphragm-type pneumatic vibration isolators by using FAT-based adaptive controller with fuzzy compensation | Hung-Yi Chen and Jin-Wei Liang | 6 |
| 03 | The granular jamming integrated actuator | Allen Jiang, Samson Adejokun, Angela Faragasso, Kaspar Althoefer, Thrishantha Nanayakkara and Prokar Dasgupta | 12 |
| 04 | A Vision-based Surgical Instruments Classification System | Xian-Heng Liu, Chung-Hung Hsieh, Jiann-Der Lee, Shin-Tseng Lee and Chieh-Tsai Wu | 18 |
| 05 | Force Control of a Robot Gripper Featuring Shape Memory Alloy Actuators | Jin-Siang Shaw and Jin-Long Lee | 23 |
| 06 | Design and Implementation of Visual Predictive Control for Image Positioning of an Automatic Alignment Stage | Ming-Jie Chen and Chi-Ying Lin | 29 |
| 07 | Fixed-Point Computation of Robot Kinematics in FPGA | Min-Kuang Wu, Ying-Shieh Kung, Yi-Hsien Huang, and Tz-Han Jung | 35 |
| 08 | A Multiagent Based Warning System for Pedestrian Safety | Gao-Ting Jian, Alan Liu, Chang-Han Yu and Pei-Chuan Zhou | 41 |
| 09 | Real Time Self-Localization of Omni-Vision Robot by Pattern Match System | Shu-Yin Chiang, Xingzhi Guo and Hsien-Wen Hu | 46 |
| 10 | Limb-Vector Paralleling: A General Approach to Translate Postures from Human to Humanoid Robots | Zhuo-Li Bao, Shih-Lin Chen, Chi-Chang Tung, Rayi Yanu Tara, Hadziq Fabroyir and Wei-Chung Teng | 51 |

| | | | |
|-----------|--|---|-----|
| 11 | Search Strategy of a Mobile Robot for Radiation Sources in an Unknown Environment | Hsien-I Lin and Hua Jr Tzeng | 56 |
| 12 | RGB-D Sensor Based Real-time 6DoF-SLAM | Hsi-Yuan Chen and Chyi- Yeu Lin | 61 |
| 13 | Developing a Real-Time Serial Servo Motion Control System for Electric Stewart Platform | Ji-Hung Lou and Stephen P. Tseng | 66 |
| 14 | Region-Based Curve Tracking Control for Leader-Follower Mobile Robot Networks | L. Alonso Sanchez-Porras and Yen-Chen Liu | 72 |
| 15 | Trajectory Planning and Control of a 7-DOF Robotic Manipulator | Ching-Chih Tsai, Chi-Chih Hung and Chih-Fu Chang | 78 |
| 16 | Decentralized EIF-based Global Localization Using Dead-Reckoning, KINECT and Laser Scanning for Autonomous Omnidirectional Mobile Robot | Feng-Chun, Tai Ching-Chih Tsai, Xiao-Ci Wang and Chun-Chieh Chan | 85 |
| 17 | The Human-Environment Interface Design with a Vision Assistance Module for a Smart WheelChair | Han-Yen Yu, Jiann-Jone Chen and Chung-Hsien Kuo | 91 |
| 18 | A Novel approach in Implementation of Rendezvous behavioral control between FPGA Robots | M.C.Chinnaiah, P Padma,T Satya Savithri and P Rajesh kumar | 97 |
| 19 | The Heliostat Design for the Natural Light Illumination System | Chen-You Wang, Allen Jong-Woei Whang , You- Ling Tsai and Cho-Jung Yen | 103 |
| 20 | Design the Lighting Concentrator Coupler for Daylight Illumination | Allen Jong-Woei Whang, Ya-Chieh Ho, Chun-Han Chou and Cho-Jung Yen, | 107 |
| 21 | Innovative Multi-Source Reflecting Freeform Emitting Component | Ping-Kuang Chen,Allen Jong-Woei Whang,Kai- Cyuan Jhan and Yu-Hau Ho, | 111 |
| 22 | Design of lighting window in a confined space | Yi-Chun Lin, Allen Jong- Woei Whang,Tzung-Han | 115 |

| | | | |
|-----------|---|--|-----|
| | | Lin,Kai-Cyuan Jhan and Chun-Wen Chen, | |
| 23 | An Innovative Design of Light Collimator Based on Freeform Microlens Array | Allen Jong-Woei,Chun-Han Chou,Xiao-Rong Wu and Hui-Chun Lin | 119 |
| 24 | The Freeform Mirror Design for Static Concentrator Module | Allen Jong-Woei Whang,Chun-Han Chou,Jin-Jie Hsieh and Yan-Mei Chen, | 124 |
| 25 | The Optimized Design of the Conventional Prismatic Elements for the Natural Light Illumination System | Allen Jong-Woei Whang, Shih-Min Chao, Wei-Shao Su and Yin-Ti Chen | 128 |
| 26 | The Innovative Flat Concentrator Design Based on Micro Prism Arrays and Lightguide for Indoor Illumination | Whang, A. J.W., Chou, C.H., Hsieh, T. H. and Kao, P.Y. | 132 |
| 27 | The Freeform collimating lens designed for light transmission | Whang, A. J.W., Jhan, K.,C., Su, C.,C. and Chen, J., W. | 136 |
| 28 | A freeform reflecting coupler for the Natural Light Illumination System | Allen Jong-Woei Whang, Shih-Chi Tai, Chun-Han Chou and Yi-RuWang | 140 |
| 29 | Robotic Arm Drilling Surgical Navigation System | Hsin-Cheng Lin, S.T. Lee, C.T. Wu and Chung-Chih Lin | 144 |
| 30 | A Tunable Light Distributor for Natural Lighting Application | Chia-Hsing Chu, Allen Jong-Woei Whang, Chun- han Chou, Kuan-Yu Chen, | 148 |
| 31 | Collectors with Transmission Function for Natural Light Illumination | Allen Jong-Woei Whang,Kai-Cyuan Jhan ,Tzu-Tun Liao,Bo- Yuan Gao, | 153 |
| 32 | An Innovative Modular Coupler Design for Sunlight Illumination | Allen Jong-Woei Whang, Chen-Yen Huang,Bo-Yuan Gao,Chun-Han Chou, | 157 |

| | | | |
|-----------|---|---|-----|
| 33 | A Cascade Controller for Linearized Quadrotor Model | Reka Inovon, Ahmad Ataka, Hilton Tnunay, M. Qodar Abdurrohman, Adha Cahyadi and Yoshio Yamamoto | 161 |
| 34 | Path Planning and Formation Control via Potential Function for UAV Quadrotor | Ahmad Ataka, Adha Cahyadi and Teguh Bharata Adji | 165 |
| 35 | Using the Taguchi Methods to Study the Balance Control of a Rotary Inverted Pendulum | Wei-chen Lee, Yue-Ying Lyu, Tzung-Yu Hsu and Ching-chih Wei | 171 |
| 36 | Development of Advanced Driver Assist Systems Using Smart Phones | Wei-Jue Guan and Liang-Kuang Chen | 176 |