

# **2015 8th International Conference on Control and Automation (CA 2015)**

**Jeju Island, South Korea  
25 – 28 November 2015**



**IEEE Catalog Number: CFP1535F-POD  
ISBN: 978-1-5090-0398-3**

**Copyright © 2015 by the Institute of Electrical and Electronic Engineers, Inc  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\*This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP1535F-POD
ISBN (Print-On-Demand):	978-1-5090-0398-3
ISBN (Online):	978-1-5090-0397-6

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# 2015 8th International Conference on Control and Automation

## CA 2015

### Table of Contents

Foreword.....	vii
Preface.....	viii
Conference Organization .....	ix

---

#### Technical Papers

Output Tracking Problem of Uncertain Nonlinear Systems with High-Order Nonlinearities .....	1
<i>Keylan Alimhan, Naohisa Otsuka, Maksat N. Kalimoldayev, and Abilmajin A. Adamov</i>	
A Study about Adjacent Baggage Recognition to Control the Adjoined Bags in Airport .....	5
<i>Jae-Won Song, Dong-Chul Kim, and Jin-Hee Lee</i>	
Approximated Error Performance of MQAM Burst Transmission for Relay Systems over Rayleigh Fading Channels .....	10
<i>Gilwon Seo, Jeongtae Seo, and Kyunbyoung Ko</i>	
Low-Complexity and High Performance SISO Decoding for Block Product Turbo Code (105,44) .....	13
<i>Je Hun Lim, Jun Ho Lee, Min Su Shin, Guk Han Cho, and Young Joon Song</i>	
CRC (Cyclic Redundancy Check) Implementation in High-Speed Semiconductor Memory .....	17
<i>Joong-Ho Lee</i>	
Design and Development of Power Communication Resource Management System Based on GIS .....	21
<i>Wei Zheng, Fan Yang, and Zhengdao Liu</i>	
Development of Low-Carbon Electricity System Based on Smart Grid .....	25
<i>Xiaoyu Sun, Ling Wang, and Xiuxia Wang</i>	

Research on Power Transformer Relay Protection and Operation Processing .....	29
<i>Xiaoyu Sun, Ling Wang, and Xiuxia Wang</i>	
Research on Distribution Network Reactive Power Compensation Based on Low Voltage Power Grid .....	33
<i>Xin Sun, Wenjie Wang, and Ming Zhu</i>	
A Novel Dynamic Surface Control Based on State Observer .....	38
<i>Yu Hongxia, Jing Yuanwei, and Zhang Siying</i>	
A Universal Concurrent Framework for Fault Diagnosis in Processor Based Systems .....	42
<i>D.V. Kodavade</i>	
Efficient Tree Indexing for PCM-Based Memory Systems .....	46
<i>Lu Li, Peiquan Jin, Chengcheng Yang, and Lihua Yue</i>	
A Random Network Model with High Clustering Coefficient and Variation in Node Degree .....	54
<i>Natarajan Meghanathan</i>	
<b>Author Index</b> .....	58