

3rd International Conference on Control, Mechatronics and Automation (ICCMA 2015)

MATEC Web of Conferences Volume 42 (2016)

Barcelona, Spain
21 - 22 December 2015

Editors:

**Peter Plapper
Guo Meixing
Sathans Suhag**

ISBN: 978-1-5108-2058-6

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution license:
<http://creativecommons.org/licenses/by/2.0/>

You are free to:

Share – copy and redistribute the material in any medium or format.

Adapt – remix, transform, and build upon the material for any purpose, even commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. The copyright is retained by the corresponding authors.

Printed by Curran Associates, Inc. (2016)

For additional information, please contact EDP Sciences – Web of Conferences
at the address below.

EDP Sciences – Web of Conferences
17, Avenue du Hoggar
Parc d'Activité de Courtabœuf
BP 112
F-91944 Les Ulis Cedex A
France

Phone: +33 (0) 1 69 18 75 75

Fax: +33 (0) 1 69 28 84 91

contact-edps@webofconferences.org

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
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

DECENTRALIZED VARIABLE GAIN ROBUST CONTROLLERS WITH GUARANTEED L2 GAIN PERFORMANCE FOR A CLASS OF UNCERTAIN LARGE-SCALE INTERCONNECTED SYSTEMS WITH STATE DELAYS	1
<i>Nagai Shunya, Oya Hidetoshi, Kubo Tomohiro</i>	
OPTIMIZATION OF INVERSE MODEL IDENTIFICATION FOR MULTI-AXIAL TEST RIG CONTROL	10
<i>Müller Tino, Ziegmann Johannes, Krüner Simon, Endisch Christian</i>	
MODELLING, SIMULATION AND CONTROLLER DESIGN FOR HYDRAULICALLY ACTUATED SHIP FIN STABILIZER SYSTEMS	15
<i>Zihnioğlu Alper, Ertogan Melek, Tayyar G. Tansel, Karakas C. Safak, Ertugrul Seniz</i>	
SAMPLED DATA ROBUST CONTROL OF AN UNDER-ACTUATED ELECTROMECHANICAL SYSTEM WITH INPUT DELAY	21
<i>Shafiq Hafsa, Malik Fahad M.</i>	
LOCAL AND GLOBAL MOTION PLANNING FOR UNMANNED SURFACE VEHICLE	28
<i>Fedorenko Roman, Gurenko Boris</i>	
INDOOR AUTONOMOUS AIRSHIP CONTROL AND NAVIGATION SYSTEM	34
<i>Fedorenko Roman, Krukhmalev Victor</i>	
A STUDY ON THE HORIZONTAL CONTROL OF A SEAT FOR HEAVY MACHINERY USING A PHASE ADJUSTING TECHNIQUE	40
<i>Kim Chae-sil., Shin Min-jae., Kim Jae-min., Keum Chang-min.</i>	
THREE-DIMENSIONAL PASSIVITY-BASED DYNAMIC CONTROL FOR TENDON-DRIVEN CATHETERS	45
<i>Soltani Minou Kouh, Khanmohammadi Sohrab, Ghalichi Farzan</i>	
CASCADE CONTROL OF MAGNETIC LEVITATION WITH SLIDING MODES	50
<i>Eroglu Yakup, Ablay Günyaz</i>	
A NEW FAULT SIMULATION TEST AND EVALUATION METHOD OF DISTRIBUTION AUTOMATION SYSTEM	55
<i>Fan Wenbo, An Yu, Liu Dong, Guan Shilei</i>	
IMC BASED SMITH PREDICTOR DESIGN WITH PI+CI STRUCTURE: CONTROL OF DELAYED MIMO SYSTEMS	60
<i>Shakibjoo Ali Dokht, Vasegh Nastaran, HosseinNia Hassan</i>	
STUDY ON A NEW METHOD FOR IMPROVING RESOLUTION OF GRATING INTERFEROMETER DISPLACEMENT MEASURING SYSTEM	66
<i>Shi Lun, Wang He, Wang Chi-Ping, Chen Jia-Bao</i>	
MECHANISMS OF MINIMUM SKEW ANGLE ACTUATION FOR HARD DISK DRIVES	70
<i>He Zhimin, Mou Jianqiang, Chan Kheong Sann</i>	
ROBUST SEQUENTIAL CIRCUITS DESIGN TECHNIQUE FOR LOW VOLTAGE AND HIGH NOISE SCENARIOS	75
<i>Garcia-Leyva Lancelot, Rivera-Dueñas Juan, Calomarde Antonio, Moll Francesc, Rubio Antonio</i>	
MOBILE PHONE BASED FALLING DETECTION SENSOR AND COMPUTER-AIDED ALGORITHM FOR ELDERLY PEOPLE	79
<i>Lee Jong-Ha, Park Hee-Jun, Kim Seon-Chil</i>	
ADAPTIVE FILTERING FOR FSCW SIGNAL-TO-NOISE RATIO ENHANCEMENT OF SAW INTERROGATION UNITS	83
<i>Díaz Luis, Velásquez Sebastián, Rincón Ernesto, Muñoz Luis, Segura Fredy, Peña Néstor</i>	
MULTI-ROBOT SYSTEM LEARNING BASED ON EVOLUTIONARY CLASSIFICATION	88
<i>Manko Sergey, Lokhin Valery, Diane Sekou, Panin Alexander</i>	
PATH PLANNING SELF-LEARNING ALGORITHM FOR A DYNAMIC CHANGING ENVIRONMENT	92
<i>Ahmad Rafiq, Plapper Peter</i>	
DESIGN AND CONTROL OF A PARALLEL ROBOT FOR MOLD POLISHING	96
<i>Harada Takashi</i>	
OPTIMIZATION OF PID CONTROLLER BASED ON THE BEES ALGORITHM FOR ONE LEG OF A QUADRUPEL ROBOT	101
<i>Bakircioglu Veli, Arif Sen M., Kalyoncu Mete</i>	

AUTOMATIC GRASPING OF A POLE CLIMBING ROBOT USING A VISUAL CAMERA WITH LASER LINE BEAMS	105
<i>Kim Jae-Hee, Lee Jae-Cheol, Choi You-Rack, Lee Srael</i>	
DESIGN AND MODELING OF AN AUTONOMOUS MULTI-LINK SNAKE ROBOT, CAPABLE OF 3D-MOTION	109
<i>Rizkallah Rabel, Metni Najib, Mouawad Jessica, Saad Ramy</i>	
STUDY OF PRESSURE DISTRIBUTION IN COMPLIANT CONTACT WHEELS FOR ROBOTIC SURFACE FINISHING	115
<i>Sun Y., Vu T.T., Yeo S.H.</i>	
MULTI-MODAL MOBILE SENSOR DATA FUSION FOR AUTONOMOUS ROBOT MAPPING PROBLEM.....	120
<i>Kassem M. H., Shehata Omar M., Imam Morgan E. I.</i>	
COMPARISON OF THE SLAM ALGORITHMS: HANGAR EXPERIMENTS.....	126
<i>Korkmaz Mehmet, Yilmaz Nihat, Durdu Akif</i>	
EVALUATION OF DIFFERENT FRONTIER-BASED MULTI-ROBOT EXPLORATION STRATEGIES.....	131
<i>Benkrid Abdenour, Benallegue Abdelaziz, Achour Noura</i>	
OPTIMAL POINT-TO-POINT MOTION PLANNING OF FLEXIBLE PARALLEL MANIPULATOR WITH MULTI-INTERVAL RADAU PSEUDOSPECTRAL METHOD.....	136
<i>Kong Minxiu, Chen Zhengsheng, Ji Chen</i>	
THE REAL TIME REMOTE MOTION CONTROL OF TWO WHEELED MOBILE BALANCE ROBOT BY USING VIDEO STREAMING	142
<i>Ali Unluturk, Ufuk Guner, Omer Aydogdu</i>	
DESIGN OF AN ELECTRONIC NARRATOR ON ASSISTANT ROBOT FOR BLIND PEOPLE.....	147
<i>Ardiansyah Rizqi Andry</i>	
PAPER-BASED PNEUMATIC LOCOMOTIVE ROBOT WITH STICKY ACTUATOR.....	152
<i>Du Xiaohan, Wu Hongtao, Qi Jie, Jeong Shin Young, Ni Feng</i>	
SCHEMATIZATION OF FLOW-BASED PRODUCTION	157
<i>Al-Fedaghi Sabah</i>	
ADAPTIVE NO_x SOFT SENSOR FOR AFTERTREATMENT OF DIESEL ENGINES.....	162
<i>Ishizuka Shinichi, Kajiwara Itsuro, Sato Junichi, Hanamura Yoshifumi</i>	
CONCEPT AND IMPLEMENTATION OF AN AGENT-BASED CONTROL ARCHITECTURE FOR A CYBER-PHYSICAL ASSEMBLY SYSTEM	167
<i>Müller Rainer Prof. Dr.-Ing., Vette Matthias Dipl.-Wirt.-Ing. (FH) M.Eng, Hörauf Leenhard Dipl.-Ing. Dipl.-Wirt.Eng., Speicher Christoph Dipl.-Ing., Jatti Kruttika M.Sc</i>	
ACTIVE SHOP SCHEDULING OF PRODUCTION PROCESS BASED ON RFID TECHNOLOGY	171
<i>Cuihua Chao, Sheng Leng, Pengfei Lian, Lu Wang</i>	
MODELING AND SIMULATION OF A SIMPLE CART WITH LOW-IMPACT CASTERS	176
<i>Tagami Masaharu, Ioi Kiyoshi, Suda Atsushi</i>	
GENERATING FACIAL COMPOSITES FROM PRINCIPAL COMPONENTS	181
<i>Zahradnikova Barbora, Duchovicova Sona, Schreiber Peter</i>	
A MESHLESS METHOD FOR ANALYSIS OF 3D MEDICAL PARTS	186
<i>Lee Ming-Hsiao, Lu Jian-Ming, Ou Keng-Liang</i>	
A COMPARISON OF HEURISTICS WITH MODULARITY MAXIMIZATION OBJECTIVE USING BIOLOGICAL DATA SETS.....	190
<i>Pirim Harun</i>	
A HIGH PRECISION DIRECT INTEGRATION SCHEME BASED ON VARIATIONAL PRINCIPLE AND ITS APPLICATIONS	194
<i>Zhu Shuai, Zhou Gang, Liu Xiaomei, Weng Shilie</i>	
PARETO SET COMPUTATION IN CONVEX MULTI-OBJECTIVE DESIGN USING ADAPTIVE RESPONSE SURFACE METHOD (ARSM)	199
<i>Panesso Miguel A., Cruz Camilo J., Bohorquez Juan C., Muñoz Luis E., Peña Néstor M., Segura Fredy E.</i>	
A DIDACTIC TRANSMITTER TO SUPPORT THE COMMUNICATION AND LEARNING PROCESS OF CHILDREN WITH CEREBRAL PALSY	204
<i>Berrezueta-Guzmán Jonnathan, Coronel-Maldonado Felipe, Serpa-Andrade Luis, Robles-Bykbaev Vladimir</i>	
CHINESE TRAFFIC PANELS DETECTION AND RECOGNITION FROM STREET-LEVEL IMAGES.....	209
<i>Chen Yajie, Huang Linlin</i>	
PERFORMANCE COMPARISON OF FEATURE SELECTION METHODS.....	216
<i>Phyu Thu Zar, Oo Nyein Nyein</i>	

ENHANCED ATM SECURITY USING BIOMETRIC AUTHENTICATION AND WAVELET BASED AES	220
<i>Sreedharan Ajish</i>	
A NOVEL IMAGE NOISE LEVEL FUNCTION ESTIMATION APPROACH USING CAMERA RESPONSE FUNCTION CONSTRAINT	225
<i>Yao Heng</i>	
OPTIMIZED DISPATCH SCHEDULE FOR AUTONOMOUS GRIDS IN ISOLATED ISLANDS	230
<i>Fan Liuyang, Wang Keyou, Shi Wenhui</i>	
RELIABLE CHANNELS FOR SYSTEMS IN THE PRESENCE OF BYZANTINE FAULTS.....	235
<i>Karaata Mehmet, Hamdan Ali</i>	
RESEARCH ON NETWORK SCALABILITY BASED ON UWB INDOOR LOCALIZATION SYSTEM.....	239
<i>Long Chunhua, Shen Chong, Feng Gaoang, Zhu Yuhao, Wang Zhihao</i>	
Author Index	