2022 7th International Conference on Mechatronics System and Robots (ICMSR 2022)

Singapore 9-11 December 2022



IEEE Catalog Number: CFP22MSU-POD ISBN: 978-1-6654-8473-2

Copyright © 2022 by the Institute of Electrical and Electronics 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 is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP22MSU-POD

 ISBN (Print-On-Demand):
 978-1-6654-8473-2

 ISBN (Online):
 978-1-6654-8472-5

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 Web: www.proceedings.com



2022 7th International Conference on Mechatronics System and Robots (ICMSR) ICMSR 2022

Table of Contents

Prefacevii
Conference Committee viii
Reviewersx
Computer Simulation and Numerical Analysis in Power and Control
System
Numerical Analysis of Wind Turbine Airfoil Aerodynamic of Wind Turbine Blade
Simulation and Validation of A Dual-Motor Coupled Joint Actuator
Application of Improved GA-BPNN Algorithm for Forward Kinematics Problem Solving of Parallel Robots
Diagnosis of Rolling Bearings Based on Total Vector Convolutional Recurrent Neural Networks
A Measurement and Accuracy Evaluation Method for Internal Dam Settlement

Intelligent Control System Design and Performance Optimization

Hybrid Adaptive Control of an Unbalanced Tilting-Rotors Quadcopter Transporting a Payload via an Elastic Cable	25
Mohamed Tolba (Monash University, Australia) and Bijan Shirinzadeh (Monash University, Australia)	۷.
Research on Automatic Focusing and Pointing Control System Dan Hou (Beijing Institute of Space Mechanics & Electricity, China), Fei Yu (Beijing Institute of Space Mechanics & Electricity, China), and Gang Huang (Beijing Institute of Space Mechanics & Electricity, China)	30
Cooperative Neural Network Control for Uncertain Non-Affine Multi-Agent Systems via an Adaptive Distributed Observer	35
Design and Verification of a Force Generating Device Based on Intellectualization	42
Exploring the Use of Industrial Robots in CNC Machine Tool Programming and Operation Courses	
Automation and Sensor Control for an Aquaponic System in the Rural Town of de San José de Quero District, Peru 2021 Dany Jesus Ataucusi-Mayor (Continental University, Perú), Katherim Lorena Serrano-Guzman (Continental University, Perú), José Luis Paulino-Inga (Continental University, Perú), and Deyby Huamanchahua (Universidad Continental, Perú)	53
Author Index	50