ASME/IEEE MESA 2011

The 7th International ASME/IEEE Conference on Mechatronics & Embedded Systems & Applications

August 28-31, 2011, Washington, DC, USA

Final Program Schedule

Monday, 29-08-2011

Time					
08:40AM - 10:20AM	MESA-1-1 Fractional Dynamics and Fractional Differential Equations	MESA-1-4 Applied Fractional Calculus in Materials and Mechanics	MESA-2-1 Rotary-Wing UAVs	MESA-3-1 Cyber-Physical and Cooperative Systems	MESA-4-1 Mechatronics & Embedded Systems Applications
10:40AM - 12:00PM	MESA-5-1 Keynotes I				
12:00PM - 01:40PM	Awards & MESA Luncheon (Liaison, Affinia Hotel accross the street)				
01:40PM - 03:20PM	MESA-1-2 Mathematical Fundamentals of Fractional Calculus		MESA-2-2 Multi-UAV Systems	MESA-6-1 Mechatronic Control & Electrical Vehicular Systems	
03:40PM - 05:20PM	MESA-1-3 Fractional Order Controls - Design and Tuning Methods		MESA-2-3 Advanced navigation and flight control techniques	MESA-7-1 Diagnosis and Monitoring in Mechatronics Systems	

Tuesday, 30-08-2011

Time			
08:40AM - 10:20AM	MESA-2-4 Small UAV systems and applications	MESA-8-1 Virtual Prototyping in Mechatronics	MESA-9-1 Bio-Mechatronics I
10:40AM - 12:00PM	MESA-5-2 Keynotes II		
01:40PM - 03:20PM	MESA-1-5 Fractional Order Controls - Applications	MESA-9-2 Bio-Mechatronics II	MESA-10-1 Infrastructure for Embedded Systems
03:40PM - 05:20PM	MESA-1-6 Initialization Issues in Applied Fractional Calculus	MESA-10-2 Theory and Algorithms for Embedded Systems	
06:00PM - 08:00PM	MESA TC Meeting followed by FDTA TC Meeting (Room: Congressional A)		

Wednesday, 31-08-2011

Time			
08:40AM - 10:20AM	MESA-1-7 Fractional Order Signal Processing Techniques and Applications	MESA-11-1 Autonomous Systems	MESA-12-1 Robotics & Mobile Machines I
10:40AM - 12:00PM	MESA-1-8 Keynotes - Fractional Derivatives and Their Applications		
01:40PM - 03:20PM	MESA-1-9 Numerical Methods of Fractional Calculus	MESA-12-2 Robotics & Mobile Machines II	MESA-13-1 Sensors and Actuators I
03:40PM - 05:20PM	MESA-1-10 Fractional Order Signal and System Modeling	MESA-12-3 Robotics & Mobile Machines III	MESA-13-2 Sensors and Actuators II

MESA-1-1 Fractional Dynamics and Fractional Differential Equations

Session Chair: Cao Junyi (Xi'an Jiaotong University)
Session Co-Chair: Thomas Royston (University of Illinois at Chicago)

Nonlinear dynamic analysis of a cracked rotor-bearing system with fractional order damping
Authors: Shiming Xue, Cao Junyi (Xi'an Jiaotong University), YangQuan Chen (Utah State Univ)

IDENTIFYING FRACTIONAL VISCOELASTIC MODELS BASED ON SURFACE WAVE MOTION
Authors: Marco Iannitto, Thomas Royston, Richard Magin (University of Illinois at Chicago)

Fractional Optimal Control Within Caputo's Derivative
Authors: Raj Kumar Biswas, Siddhartha Sen (IIT Kharagpur)

Hybrid modeling and fractional control of a SKAFO Orthosis for gait assistance
Authors: S. Hassan HosseinNia, Francisco Romero, Blas Vinagre, Francisco Javier Alonso Sanchez, Inés Tejado (University of Extremadura), Josep M. Font-Llagunes (Universitat Politècnica de Catalunya)

The Solution of Linear Fractional Differential Equations Using the Fractional Meta-Trigonometric Functions
Authors: Carl F. Lorenzo (Glenn Research Center), Rachid MALTI (University of Bordeaux), Tom Hartley (The University of Akron)

MESA-1-2 Mathematical Fundamentals of Fractional Calculus

Session Chair: Manuel Ortigueira (UNINOVA/Faculdade de Ciências e Tecnologia da UNL)
Session Co-Chair: Chunhai Kou (Donghua University)

Equivalent Same-order System for Multi-rational-order Fractional Differential System with Caputo Derivative
Authors: Changpin Li, Fengrong Zhang (Shanghai University)

On a Unified Fractional Derivative
Authors: Manuel Ortigueira (UNINOVA/Faculdade de Ciências e Tecnologia da UNL), Juan Trujillo (Universidad de La Laguna)

Fractional integration of Generalized Bessel function of the first kind
Authors: Pradeep Malik, Saiful R Mondal, Swaminathan Anbhu (Indian Institute of Technology Roorkee)

Existence of Solutions for Fractional Functional Differential Equations with Boundary Value Conditions
Authors: Chunhai Kou, Huacheng Zhou, Sijia Wu (Donghua University)

MESA-1-3 Fractional Order Controls - Design and Tuning Methods

Session Schedule: Monday, August 29, 2011 03:40 PM-05:20 PM
Session Chair: Ivo Petras (Technical University of Kosice)
Session Co-Chair: Patrick Lanusse (University of Bordeaux)

Practical Aspects of Tuning and Implementation of Fractional-Order Controllers
Author: Ivo Petras (Technical University of Kosice)

CRONE CONTROL-SYSTEM DESIGN TOOLBOX FOR THE CONTROL ENGINEERING COMMUNITY
Authors: Patrick Lanusse, Rachid MALTI, Pierre MELCHIOR (University of Bordeaux)

Fractional PI Tuning Satisfying Gain and Phase Margin Constraints
Authors: Kaveh Paridari, Mohammad Saleh Tavazoei (Sharif University of Technology)

TUNING FRACTIONAL ORDER PROPORTIONAL INTEGRAL CONTROLLERS FOR TIME DELAYED SYSTEMS WITH A FRACTIONAL POLE
Authors: Hadi Malek (Utah State Univ), Ying Luo (South China University of Technology), YangQuan Chen (Utah State University)

A NEW FRACTIONAL ORDER OBSERVER DESIGN FOR FRACTIONAL ORDER NONLINEAR SYSTEMS
Authors: Sara Dadras, Hamid Reza Momeni (Tarbiat Modares University)

MESA-1-4 Applied Fractional Calculus in Materials and Mechanics

Session Schedule: Tuesday, August 30, 2011 08:40 AM-10:20 AM
Session Chair: Malgorzata Klimek (Czestochowa University of Technology)
Session Co-Chair: Masataka Fukunaga (Nihon University)

Three-Dimensional Fractional Derivative Models for Finite Deformation
Authors: Masataka Fukunaga (Nihon University), Nobuyuki Shimizu (Iwaki Meisei University)

On Reflection Symmetry and Its Application to the Euler-Lagrange Equations in Fractional Mechanics
Authors: Malgorzata Klimek (Czestochowa University of Technology)

FRACTIONAL ORDER CONSTITUTIVE MODEL OF GEOMATERIALS
Authors: Deshun Yin, Hao Wu (Hohai University), YangQuan Chen (Utah State University), Cheng Chen (Hohai University)

LAGRANGIANS WITH LINEAR VELOCITIES WITHIN HILFER FRACTIONAL DERIVATIVE
Authors: Dumitru Baleanu (Cankaya University), Om P. Agrawal (Southern Illinois University), Sami I Muslih (Azhar University)

Fractional-order spectra for complex viscoelastic materials
Authors: Kai-Xin Hu, Keqin Zhu (Tsinghua Univ.)

MESA-1-5 Fractional Order Controls - Applications

Session Chair: J. A. Tenreiro Machado (Institute of Engineering of Polytechnic of Porto)
Session Co-Chair: Mohammad Saleh Tavazoei

Visualizing Fractional Control System Approximations By Means of Multidimensional Scaling
Author: J. A. Tenreiro Machado (nstitute of Engineering of Polytechnic of Porto)

TRANSIENT RESPONSE CONTROL BY FRACTIONAL-ORDER PI CONTROLLERS
Authors: Serdar Ethem Hamamci (Inonu University), Serhat Obuz (Clemson University)

Analysis of Oscillations in Fractional Order LTI Systems
Authors: Milad Siami, Mohammad Saleh Tavazoei (Sharif University of Technology)

Robust CRONE Design for a Variable-Ratio Planetary Gearing in a variable speed wind turbine
Authors: Benjamin Feytout (Valeol), Patrick Lanusse, Jocelyn Sabatier (University of Bordeaux), Serge Gracia (Valeol)

Multi-group consensus of heterogeneous fractional-order dynamics agents via pinning control
Authors: Wei Sun (Beijing Institute of Technology), YangQuan Chen (Utah State University), Changpin Li (Shanghai Univ.)

MESA-1-6 Initialization Issues in Applied Fractional Calculus

Session Chair: Carl F. Lorenzo (Glenn Research Center)
Session Co-Chair: Jean-Claude Trigeassou (IMS LAPS)

An Experimental Validation of the Initialization Response in Fractional-order Systems
Authors: Tom Gambone, Tom Hartley (University of Akron), Carl Lorenzo (NASA Glenn Research Center), Jay Adams, Robert Veillette (University of Akron)

Time-Varying Initialization and Laplace Transform of the Caputo Derivative: With Order Between Zero and One
Authors: Carl F. Lorenzo (Glenn Research Center), Tom Hartley (The University of Akron)

Initialization Of Riemann-Liouville And Caputo Fractional Derivatives
Authors: Jean-Claude Trigeassou (IMS LAPS), Nezha Maamri (LAII), Alain Oustaloup (University of Bordeaux)

The Initialization Response of Multi-term Linear Fractional-order Systems with Constant History Functions
Authors: Tom Hartley (University of Akron), Carl Lorenzo (NASA Glenn Research Center)

Initialization of Fractional-Order Systems Using the Hankel Operator
Authors: Jay Adams, Robert Veillette, Tom Hartley (University of Akron)

MESA-1-7 Fractional Order Signal Processing Techniques and Applications

Session Schedule: Wednesday, August 31, 2011 08:40 AM-10:20 AM
Session Chair: Dumitru Baleanu (Cankaya University)
Session Co-Chair: Richard Magin (University of Illinois at Chicago)

DIGITAL FRACTIONAL ORDER SAVITZKY-GOLAY DIFFERENTIATOR AND ITS APPLICATION
Authors: Dali Chen (Northeastern University), YangQuan Chen (Utah State University), Dingyu Xue (Northeastern University)

IMPULSE RESPONSE OF A GENERALIZED FRACTIONAL SECOND ORDER FILTER
Authors: Zhuang Jiao (Tsinghua University), YangQuan Chen (Utah State University)

MULTIFRACTIONAL PROPERTY ANALYSIS OF HUMAN SLEEP EEG SIGNALS
Authors: Hu Sheng (Dalian University of Technology), YangQuan Chen (Utah State University)

EFFECTS OF MEDIAN FILTERING ON FRACTIONAL PROCESSES
Authors: Hu Sheng (Dalian University of Technology), YangQuan Chen (Utah State University)

High Speed Algorithm for Computation of Fractional Differentiation and Integration *Authors: Masataka Fukunaga (Nihon University), Nobuyuki Shimizu (Iwaki Meisei University)*

MESA-1-8 Keynotes - Fractional Derivatives and Their Applications

Session Schedule: Wednesday, August 31, 2011 10:40 AM-12:00 PM
Session Chair: YangQuan Chen (Utah State University)
Session Co-Chair: Changpin Li (Shanghai Univ.)

Fractional Optimal Control: An Overview
Keynote Speaker: Om P Agrawal (Southern Illinois University)

Fractional Diffusion and the Origin of Allometry Relations
Keynote Speaker: Bruce West (Army Research Office)

MESA-1-9 Numerical Methods of Fractional Calculus

Session Schedule: Wednesday, August 31, 2011 01:40 PM-03:20 PM
Session Chair: Fawang Liu (Queensland University of Technology)
Session Co-Chair: HongGuang Sun (Hohai University)

Analytical And Numerical Solutions Of The Space And Time Fractional Bloch-Torrey Equation
Authors: Qiang Yu, Fawang Liu, Ian Turner (Queensland University of Technology), Kevin Burrage (COMLAB and OCISB)

Stability and Convergence of Implicit Numerical Methods for a Class of Fractional Advection-Dispersion Models
Authors: Fawang Liu (Queensland University of Technology), Pinghui Zhuang (Xiamen University), Kevin Burrage (COMLAB and OCISB)

Discrete fractional calculus: non-equidistant grids and variable step length
Authors: Igor Podlubny, Tomas Skovranek (Technical University of Kosice), Viktor Verbickij (Odessa National University), YangQuan Chen (Utah State University), Blas Vinagre (University of Extremadura), Ivo Petras (Technical University of Kosice)

About the F_N approximation to fractional neutron transport equation in slab geometry
Authors: Dumitru Baleanu (Cankaya University), Abdelouahab Kadem (University of Setif)

A novel finite element method for a class of time-fractional diffusion equations
Authors: HongGuang Sun, Wen Chen (Hohai University), K.Y. Sze (The University of Hong Kong)

MESA-1-10 Fractional Order Signal and System Modeling

Session Schedule: Wednesday, August 31, 2011 03:40 PM-05:20 PM
Session Chair: Yan Li (Shandong University)
Session Co-Chair: Igor Podlubny (Technical University of Kosice)

Explicit Fractional Model Order Estimation Using Unscented and Ensemble Kalman Filters
Authors: Michailas Romanovas, Lasse Klingbeil, Martin Traechtler (HSG-IMIT), Yiannos Manoli (University of Freiburg)

Theory and Implementation of Distributed-Order Element Networks
Authors: Yan Li (Shandong University), YangQuan Chen (Utah State University)

Modeling Heat Transfer In Heterogeneous Media Using Fractional Calculus
Authors: Dominik Sierociuk, Andrzej Dzielinski, Grzegorz Sarwas (Warsaw University of Technology), Ivo Petras, Igor Podlubny, Tomas Skovranek (Technical University of Kosice)

MELLIN CONVOLUTION FOR SIGNAL FILTERING AND ITS APPLICATION TO THE GAUSSIANIZATION OF LEVY NOISE
Authors: Gianni Pagnini (CRS4, Italy), YangQuan Chen (Utah State University)

MESA-2-1 Rotary-Wing UAVs

Session Schedule: Monday, August 29, 2011 08:40 AM-10:20 AM
Session Chair: Youmin Zhang (Concordia University)
Session Co-Chair: Emanuele Frontoni (Università Politecnica delle Marche)

INTEGRATION OF AN AUTOPILOT SYSTEM WITH A HOBBY RC HELICOPTER
Authors: Pu Xie, Bryndan Gardner, Ou Ma (New Mexico State University)

Optimal Error-clamping Design for Position-based Visual Servoing of a 2-dof Model Helicopter

Authors: Maryam Alizadeh, Chayatat Ratanasawanya, Mehran Mehrandezh, Raman Paranjape (University of Regina)

FAULT TOLERANT CONTROL APPLIED TO A QUADROTOR UNMANNED HELICOPTER

Authors: Tong Li, Youmin Zhang, Brandon W. Gordon (Concordia University)

Dynamic Modeling of an Unmanned Helicopter from Flight Test Data

Authors: Guanlin Wang (Tsinghua University), Hui Xia (Nanjing University of Science and Technology), Jihong Zhu (Tsinghua University)

UAVs Safe Landing using range images

Authors: Emanuele Frontoni, Adriano Mancini, Primo Zingaretti (Università Politecnica delle Marche)

MESA-2-2 Multi-UAV Systems

Session Schedule: Monday, August 29, 2011 01:40 PM-03:20 PM
Session Chair: Long Di (Utah State Univ.)
Session Co-Chair: Youmin Zhang (Concordia University)

VISUAL ATTITUDE ESTIMATION FOR LOW-COST PERSONAL REMOTE SENSING SYSTEMS

Authors: Tobias Fromm, Long Di, YangQuan Chen (Utah State University), Holger Voos (University of Luxembourg)

CONSENSUS BASED MULTIPLE SMALL FIXED-WING UAV FORMATION

Authors: Yaojin Xu (Southeast University and Utah State University), Long Di, YangQuan Chen (Utah State University)

COGNITIVE MULTI-UAV FORMATION FLIGHT: PRINCIPLE, LOW-COST UAV TESTBED, CONTROLLER TUNING AND EXPERIMENTS

Authors: Long Di, Haiyang Chao, Jinlu Han, YangQuan Chen (Utah State University)

Voronoi-based Coverage Control for Multi-quadrotor UAVs

Authors: Farid Sharifi, Youmin Zhang, Brandon W. Gordon (Concordia University)

DYNAMIC KEY-FRAME BASED AIRBORNE SCENE MATCHING VISION NAVIGATION

Authors: Yaojun Li, Quan Pan, Chunhui Zhao, Feng Yang, Yongmei Cheng (Northwestern Polytechnical University)

MESA-2-3 Advanced navigation and flight control techniques

Session Schedule: Monday, August 29, 2011 03:40 PM-05:20 PM
Session Chair: Youmin Zhang (Concordia University)
Session Co-Chair: YangQuan Chen (Utah State University)

Model-Based Optimal H-Infinity Controller on the Stability of a 2-DoF Quadrotor

Authors: Rafael Coronel Bueno Sampaio, Marcelo Becker, Adriano Siqueira, Ricardo Breganon, Fabio de Salvi, Eduardo

Belo (University of Sao Paulo/EESC)

Fault Tolerant Control of a Quadrotor Umanned Helicopter using Model Reference Adaptive Control
Authors: Iman Sadeghzadeh, Ankit C. Mehta, Youmin Zhang (Concordia University)

INTEGRATED ADAPTIVE FAULT DIAGNOSIS AND STATE-FEEDBACK CONTROL FOR SYSTEMS WITH CONSTANT ACTUATOR FAULTS AND CONTROL INPUT CONSTRAINTS
Authors: Jinhua Fan, Youmin Zhang (Concordia University), Zhiqiang Zheng (National University of Defense Technology)

Path Tracking of a Fixed-Wing Autonomous Aerial Vehicle by High Order Sliding Mode Control
Authors: Herman Castañeda, Jesús de León (Universadad Autonoma de Nuevo Leon), Ernesto Olguin-Diaz (Cinvestav)

Development of Flight Guidance System of a Small Unmanned Aerial Vehicle (UAV)
Authors: Rianto Adhy Sasongko, Javensius Sembiring (Institut Teknologi Bandung)

MESA-2-4 Small UAV systems and applications

AUTONOMOUS FLYING UNDER 500 USD BASED ON RC AIRCRAFT
Authors: Long Di, YangQuan Chen (Utah State University)

IMPROVED ARCHITECTURE DESIGNS FOR A LOW COST PERSONAL REMOTE SENSING PLATFORM: FLIGHT CONTROL AND SAFETY
Authors: Calvin Coopmans, Long Di, Austin Jensen, Aaron Dennis, YangQuan Chen (Utah State University)

Prediction Models for the Estimation of Soil Moisture Content
Authors: Swathi Gorthi, Huifang Dou (Utah State Univ.)

Improved hybrid Kalman filter for in-flight aircraft engine performance estimation
Authors: YingQing Guo, Jun Lu, ShuGang Zhang (Northwestern Polytechnical University)

Low Cost Output Feedback Controllers for Small UAVs
Authors: Chandra Asthana (Concordia University), Seetharama M. Bhat (Indian Institute of Science)

MESA-3-1 Cyber-Physical and Cooperative Systems

Vehicle Platooning: A Brief Survey and Categorization

Authors: Pooja Kavathekar, YangQuan Chen (Utah State University)

Controlling Modular Reconfigurable Robots with Handheld Smart Devices

Authors: David Ko, Nalaka Kahawatte, Harry H. Cheng (University of California, Davis)

On the Design of Serial Manipulators with Linearized Dynamics

Authors: Sergey Jatsun (South-West State University), Vigen Arakelian, Souren Sargsyan (INSA Rennes), Andrey Jatsun (South-West State University)

A point to point trajectory planning for a dual-drive spherical robot base on decoupled principle

Authors: Ming Yue (Dalian University of Technology), Zongquan Deng (Harbin Institute of Technology)

Sensor Agent Cloud: A Cloud-Based Autonomic System for Physical Sensor Nodes Management

Author: Yu-Cheng Chou (Chung Yuan Christian University)

MESA-4-1 Mechatronics & Embedded Systems Applications

Optimization of complex dynamic systems with respect to their behavior in time and frequency domain

Authors: Matthias Marx, Chunsheng Wei, Dirk Söffker (University of Duisburg-Essen)

Discrete Time Linear Quadratic Tracking Controller for Omni-Directional Mobile Robots

Authors: Ehsan Hashemi, Maani Ghaffari Jadidi (Qazvin Azad University)

The KCLBOT: A Double Compass Self-localising Manoeuvrable Mobile Robot

Authors: Evangelos Georgiou, Jian Dai, Michael Luck (King's College London)

A Novel Control Strategy for Multiple Switches Based on Electro-rheological Fluid

Authors: Luning XU, Li Han, Junbiao Liu (Chinese Academy of Sciences)

MESA-5-1 Keynotes I

From Italy to China, Driverless!

Keynote Speaker: Alberto Broggi (University of Parma)

MESA-5-2 Keynotes II

Session Chair: Harry H. Cheng (University of California, Davis)

Decentralized Vibration Control for Large Flexible Structures with Smart Embedded Devices
Keynote Speaker: Dong-Xu Li (National University of Defense Technology)

MESA-6-1 Mechatronic Control & Electrical Vehicular Systems

Session Chair: Ma Chengbin (Shanghai Jiao Tong University)

An measurement system for electric vehicle powered by supercapacitor
Authors: Zhongyue Zou, Cao Junyi (Xi'an Jiaotong University), Chengbin Ma (UM-SJTU Joint Institute, Shanghai Jiaotong University), Zhang Huarong (Xi'an Jiaotong University)

Wireless Charging of Electric Vehicles: A Review and Experiments
Authors: Ma Chengbin, Xinen Zhu, Minfan Fu (Shanghai Jiao Tong University)

Model Verification and Design of Speed Control System of Water Driven Stage
Authors: Yohichi Nakao, Toshiaki Sano, Midori Nagashima, Kenji Suzuki (Kanagawa University)

Parametric Vehicular Simulator in the Evaluation of HELVIS mini-HEV EDS Control
Authors: Rafael Coronel Bueno Sampaio, Lima Gabriel, Vinicius V. M. Fernandes, Andre Hernandes, Marcelo Becker (University of Sao Paulo/EESC)

Efficient traffic simulation using busses as active sensor network
Authors: Ludovico Catani, Emanuele Frontoni, Primo Zingaretti (Università Politecnica delle Marche), Guido di Pasquale (Pluservice)

MESA-7-1 Diagnosis and Monitoring in Mechatronics Systems

Session Chair: Wen Chen (Wayne State University)

A Novel Design of Iterative Learning Observer for Fault Estimation
Authors: Wen Chen (Wayne State University), Chun-Mei Liu (Shenyang University of Technology), Han-Long Yang (Navistar Inc.)

A Generalized Form of ToMFIR Approach to Fault Detection in dynamic systems
Authors: Wen Chen (Wayne State University), Chun-Mei Liu (Shenyang University of Technology)

Vision Based Fault Detection In Automated Assembly Equipment

Authors: Greg Szkilnyk, Kevin Hughes, Brian Surgenor (Queen's University)

Hidden Markov Model for Health Estimation and Prognosis of Turbofan Engines

Authors: Andrea Giantomassi, Francesco Ferracuti, Alessandro Benini, Gianluca Ippoliti, Sauro Longhi, Antonio Petrucci (Università Politecnica delle Marche)

The Influence of Nonlinear Friction and Disturbance in the Control of a Mechatronic System: CNC Machine Tool Application

Authors: Liz Rincon, Joao Rosario (University of Campinas)

MESA-8-1 Virtual Prototyping in Mechatronics

Session Schedule: Tuesday, August 30, 2011 08:40 AM-10:20 AM
Session Chair: Maura Mengoni (Polytechnic University of Marche)

DEVELOPING A TACTILE ACTUATOR TO BE INTEGRATED INTO A FORCE FEEDBACK DEVICE FOR THE HAPTIC RENDERING OF VIRTUAL TEXTILES

Authors: Marco Fontana, Fabio Salsedo, Simone Marcheschi, Massimo Bergamasco (PERCRO - Scuola Superiore Sant'Anna)

Evaluation Process Support in Mechatronics design

Authors: Pierre Couturier, Mambaye Lo, Ouael Mouelhi (Ecole des Mines d'Ales)

A METHOD FOR ROUGHNESS AND TEXTURE SIMULATION VIA TACTILE DISPLAYS

Authors: Maura Mengoni, Michele Germani, Margherita Peruzzini, Paolo Morichetti (Polytechnic University of Marche)

TRANSMISSION SYSTEM IMPROVEMENTS IN ACTUATING A DESKTOP HAPTIC STRIP FOR EXPLORATION OF VIRTUAL OBJECTS

Authors: Mario Covarrubias, Monica Bordegoni, Umberto Cugini, Michele Antolini (Politecnico di Milano)

MESA-9-1 Bio-Mechatronics I

Session Schedule: Tuesday, August 30, 2011 08:40 AM-10:20 AM
Session Chair: Lei Zuo (State University of New York at Stony Brook)
Session Co-Chair: Shane Xie (The University of Auckland)

Assistive Rehabilitation Device for the Joints of the Lower Limb

Authors: Tudor T. Deaconescu, Andrea I. Deaconescu, Ioana G. Petre (Transilvania University)

Design of a robotic endoscope for mini invasive surgery

Authors: Cynthia Corina Zazzarini, Alberto Pansini, Pietro Cerveri (Politecnico di Milano), Renzo Zaltieri (ZD Mecha-Tronics srl.), Damiano Lavizzari (Cibin srl.)

Finite Element Modeling of a Microdroplet Generator with Integrated Sensing
Authors: William Rone, Pinhas Ben-Tzvi (George Washington University)

A Socially Assistive Robot that can Interpret Human Body Language
Authors: Derek McColl, Goldie Nejat (University of Toronto)

Design And Development Of Active Endoscope Using Shape Memory Alloy Actuators
Authors: AMAN ARORA, PARTHA BHATTACHARJEE (Central Mechanical Engineering Research Institute)

MESA-9-2 Bio-Mechatronics II

Session Schedule: Tuesday, August 30, 2011 01:40 PM-03:20 PM
Session Chair: Shane Xie (The University of Auckland)
Session Co-Chair: Lei Zuo (State University of New York at Stony Brook)

Robust Disturbance Observer-Based Adaptive Fuzzy Controller for Pneumatic Muscle Actuators
Authors: Prashant Jamwal, Shane Xie, Sean Quigley (The University of Auckland)

Fractional thermal model of the lungs using Havriliak-Negami function
Authors: Mathieu Pellet, Pierre MELCHIOR (University of Bordeaux), Youssef Abdelmoumen (Hopital du Haut-Lévêque, CHU de Bordeaux), Alain Oustaloup (University of Bordeaux)

DESIGN AND FABRICATION OF DIFFERENTIAL SCANNING NANOCALORIMETER FOR BIOLOGICAL APPLICATIONS
Authors: Lei Zuo, Xiaoming Chen (State University of New York at Stony Brook), Ming Lu (Brookhaven National Laboratory)

An Automatic Injection Device for Precise Cement Delivery During Osteoporotic Bone Augmentation
Authors: Michael D. Kutzer, Ehsan Basafa, Yoshito Otake, Mehran Armand (Johns Hopkins University Applied Physics Laboratory)

PROSTHETICS FOR TRANSTIBIAL AMPUTEES-A LITERATURE SURVEY
Authors: Thomas Powelson, Jingzhou (James) Yang (Texas Tech University)

MESA-10-1 Infrastructure for Embedded Systems

Session Schedule: Tuesday, August 30, 2011 01:40 PM-03:20 PM
Session Chair: Bo Chen (Michigan Technological University)
Session Co-Chair: Peter Roessler (University of Applied Sciences Technikum Wien)

A Heterogeneous System-level Power Macro-modeling for Network-on-Chip Router
Authors: Ning Wu, Fang Zhou, Ying Zhang, Fen Ge (Nanjing University of Aeronautics and Astronautics)

A Joint-Coding Scheme With Crosstalk Avoidance

Authors: Lei Zhou, Ning Wu, Fen Ge (Nanjing University of Aeronautics and Astronautics)

A METHODOLOGY FOR REMOTE DEBUG, TEST AND MAINTENANCE BASED ON IEEE 1588

Authors: Peter Roessler, Roland Hoeller, Martin Zauner (University of Applied Sciences Technikum Wien)

Dedicated Infrastructure for Academic Courses Related to Embedded Systems Design Supporting Students in Distance Learning Programs

Authors: Michael Kramer, Roman Beneder, Philipp Brejcha, Peter Balog (University of Applied Sciences Technikum Wien)

Model-Based Embedded System Design Methodology for Automotive Applications

Authors: Wei Luo, Bo Chen (Michigan Technological University)

MESA-10-2 Theory and Algorithms for Embedded Systems

Session Schedule: Tuesday, August 30, 2011 03:40 PM-05:20 PM
Session Chair: Jia Xu (York University)
Session Co-Chair: Martin Horauer (University of Applied Sciences Technikum Wien)

Hardware Support for Efficient Testing of Embedded Software

Authors: Thomas Reinbacher (Vienna University of Technology), Martin Horauer (University of Applied Sciences Technikum Wien), JÃ¶rg Brauer (RWTH Aachen University), Andreas Steininger (Vienna University of Technology), Tobias Mueller (University of Applied Sciences Technikum Wien), Stefan Kowalewski (RWTH Aachen University)

A Method for Simultaneously Satisfying Important Constraints and Dependencies for Many Different Types of Processes in Embedded Real-Time Systems

Authors: Jia Xu (York University)

Leakage-Conscious DVS Scheduling for (m,k)-Firm Real-Time Systems

Authors: Linwei Niu (Claflin University), Yuanchang Xie (South Carolina State University)

Evaluation of Communication Induced Checkpointing in Resource Constrained Embedded Systems

Authors: Belal Sababha, Osamah Rawashdeh (Oakland University)

MESA-11-1 Autonomous Systems

Session Schedule: Wednesday, August 31, 2011 08:40 AM-10:20 AM
Session Chair: Hyo-Sung Ahn (Gwangju Institute of Science and Technology)
Session Co-Chair: Yu Zhou (State University of New York at Stony Brook)

Establishing and Maintaining Wireless Communication Coverage among Multiple Mobile Robots via Fuzzy Control

Authors: Xu Zhong, Yu Zhou (State University of New York at Stony Brook)

Mobile Agent-Based Computing Resource and Usage Monitoring at Large Scale Computer Centers

Authors: Zhixin Tie (Zhejiang Sci-Tech University), David Ko, Harry H. Cheng (University of California, Davis)

Tip-Tilt Motion Control of Fast Steering Mirror in The Giant Magellan Telescope

Authors: Tae-kyung Lee, Hyo-Sung Ahn (Gwangju Institute of Science and Technology), Young-Soo Kim, Kwijong Park (Korea Astronomy and Space Institute)

Ground Antenna Scheduling Algorithm for Multi-satellite Tracking

Authors: Sanghyuk Yun, Hyo-Sung Ahn (Gwangju Institute of Science and Technology), Sun-Ju Park, Ok-Chul Jung, Dae-Won Chung (Korea Aerospace Research Institute)

Coalition Formation for Unmanned Quadrotors

Authors: Adriano Mancini, Alessandro Benini, Emanuele Frontoni, Primo Zingaretti, Sauro Longhi (Università Politecnica delle Marche)

MESA-12-1 Robotics & Mobile Machines I

Session Schedule: Wednesday, August 31, 2011 08:40 AM-10:20 AM
Session Chair: Mohammad-Amin Jarrah (American University of Sharjah)
Session Co-Chair: Xianwen Kong (Heriot-Watt University)

Wheeled, Kinematically Redundant Locomotion System for Mobility-Oriented Research and Experimentation

Authors: Patrick Labenda, Marc Neumann, Tim Sadek (Ruhr-University Bochum)

Modeling and Kinematic Analysis of a Gait Generation Method for Biomimetic Walking Robot

Authors: Umar Asif, Javaid Iqbal (National University of Sciences and Technology)

MULTI-TERRAIN VEHICLE ACTIVE SUSPENSION CONTROL DESIGN AND SYNTHESIS

Authors: Masood Jawad, Matteo Zoppi, Rezia Molfino (University of Genova)

VISION BASED AUTONOMOUS TRACKED SORTING ROBOT

Authors: Mohammad-Amin Jarrah, Ahmad Al-Nabulsi, Jamil Fayyad, Mohamad Ismail, Ayman Zein Alabedin (American University of Sharjah)

Conceptual design and analysis of spherical mobile robots with an omni-wheel based internal driving unit

Authors: Xianwen Kong, Ross Doak (Heriot-Watt University)

MESA-12-2 Robotics & Mobile Machines II

Session Schedule: Wednesday, August 31, 2011 01:40 PM-03:20 PM
Session Chair: Jian Dai (King's College London, University of London)

Self-Repairing Process in Self-Reconfigurable Robots Based on Geometrical Characteristics
Authors: Yanqiong Fei, Xin Zhang (Shanghai Jiaotong University)

Visual PID Control of a Redundant Planar Parallel Robot
Authors: Miguel A. Trujano, Rubén A. Garrido, Alberto Soria (CINVESTAV-IPN)

SLAM USING 3D RECONSTRUCTION VIA A VISUAL RGB & RGB-D SENSORY INPUT
Authors: Evangelos Georgiou, Helge Wärdemann (King's College London), Lei Cui (Carnegie Mellon University), Jian Dai (King's College London)

An Online Genetic Algorithm for Automated Disassembly Sequence Generation
Authors: Ahmed ElSayed, Elif Kongar (University of Bridgeport), Surendra Gupta (Northeastern University), Tarek Sobh (University of Bridgeport)

Distributed Collision-Avoiding Deployment Control of Multiple Nonholonomic Mobile Robots
Authors: Xionghui Lu, Yu Zhou, Xu Zhong (State University of New York at Stony Brook)

MESA-12-3 Robotics & Mobile Machines III

Session Schedule: Wednesday, August 31, 2011 03:40 PM-05:20 PM
Session Chair: Jawad Masood (University of Genova)

A Plug and Play Middleware for Sensory Modules, Actuation Platforms and Task Descriptions in Robotic Manipulation Platforms
Authors: Ayssam Elkady, Jovin Joy, Tarek Sobh (University of Bridgeport)

A Rolling Parallelogram Driven by a Crank-Rocker Mechanism
Authors: Changhuan Liu, Yan-an Yao (Beijing Jiaotong University)

Command Strategies for Tele-Operation of Mobile-Manipulator Systems via a Haptic Input Device
Authors: Michael Wrock, Scott Nokleby (University of Ontario Institute of Technology)

The Robotic Swarm Concept in Fixtures for Transport Industry
Authors: Rezia Molfino, Matteo Zoppi (University of Genoa)

MESA-13-1 Sensors and Actuators I

Session Schedule: Wednesday, August 31, 2011 01:40 PM-03:20 PM
Session Chair: Jachoon Koo (Sungkyunkwan Univesity, School of Mechanical Engineering)

An in-pipe leak detection sensor: Sensing capabilities and Evaluation
Authors: Dimitris Chatzigeorgiou (Massachusetts Institute of Technology), Atia Khalifa (King Fahd University of Petroleum & Minerals), Kamal Youcef-Toumi (Massachusetts Institute of Technology), Rached Ben-Mansour (King Fahd

University of Petroleum & Minerals)

A Flexible Tactile Capacitive Sensor for Slip Detection
Authors: Jinah Chung, B.C. Kim, H.R. CHOI, H.P. MOON, Y.K. LEE, J.D. NAM, Jachoon Koo (Sungkyunkwan Univesity)

Mechanical Sensing for Reformer Internal Diameter Data Capturing
Authors: Liqiong Tang, Morio Fukuoka (Massey University), Peter Tait (Methanex Corporate)

Microcontroller-based Reformer Tube Internal Diameter Data Acquisition
Authors: Liqiong Tang, Morio Fukuoka (Massey University), Peter Tait (Methanex Corporate)

MESA-13-2 Sensors and Actuators II

Session Schedule: Wednesday, August 31, 2011 03:40 PM-05:20 PM
Session Chair: Peter Roessler (University of Applied Sciences Technikum Wien)

A MATLAB-based Application Development Using a 3D PMD Camera for a Mobile Robot
Authors: Mohammad Chami (University of applied Sciences Ravensburg-Weingarten), Holger Voos (University of Luxembourg)

IDENTIFICATION OF CONSTITUTIVE PARAMETERS FOR PIEZO STACK ACTUATORS BASED ON ONLINE CAPACITANCE MEASUREMENTS
Authors: Mohammad Islam, Rudolf Seethaler (UBC)

FR4 Electromagnetic Scanner Based Fourier Transform Spectrometer
Authors: Utku Baran, Kivanc Hedili, Selim Olcer, Hakan Urey (Koç University)

Design and Simulation of a Compact Electromagnetic Actuator for the Synchronized Segmentally Interchanging Pulley Transmission System (SSIPTS)
Authors: Baoping Wen, Vahid Mashatan, Jean W. Zu (University of Toronto)

Design of an Electromagnetic Actuator Suitable for Production by Rapid Prototyping
Authors: Matthew Moses, Gregory S. Chirikjian (Johns Hopkins University)