

ISMA'10 Conference Program

Tuesday April 20, 2010	
8:00 - 10:00	Registration
10:00 - 10:30 am	Opening Ceremony (Lecture Hall A) Dr. Peter Heath, Chancellor, American University of Sharjah Prof. Mohammad-Amin Jarrah, ISMA General Chair Mr. Yousef Bastaki, Emirates Aluminum Co., EMAL
10:30 - 11:25	Keynote I (Lecture Hall A) Intravascular micro-surgical skills Simulators Prof. Toshio Fukuda, Nagoya University, Japan
11:25 - 11:40	Coffee Break
11:40 - 13:00	Session I : Robotics and Autonomous Systems - A (Lecture Hall B)
13:00 - 14:00	Lunch Break
14:00 - 15:00	Keynote II (Lecture Hall A) Design & Control Integration Prof. Kamal Youcef-Toumi, Massachusetts Institute of Technology, USA
15:00 - 16:00	Invited Talk (Lecture Hall A) Micro and nano scale sensors are increasing being used in fundamental investigations Prof. Taher Saif, Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, USA
16:00 - 16:30	Coffee Break & Poster Competition Session
16:30 - 17:50	Session II-A : Intelligent Systems (Lecture Hall B)
16:30 - 17:50	Session II-B : Intelligent Systems (Senate Room)

Wednesday April 21, 2010	
8:30 - 9:25	Keynote III (Lecture Hall B) Vision Based Guidance for Micro Air Vehicles Prof. Randy Beard, Electrical and Computer Engineering Department Brigham Young University, USA
9:25 - 11:25	Session III : Navigation, Localization, and Simultaneous Mapping (Lecture Hall B)
11:25 - 11:40	Coffee Break
11:40 - 13:00	Session IV: Mechatronics Education (Lecture Hall B)
13:00 - 14:15	Lunch Break
14:15 - 15:15	Keynote IV (Lecture Hall B) Rotorcraft UAV Flight Control Technologies: Past, Present and Future Dr. Russell Enns, Boeing/McDonnell Douglas, USA
15:15 - 17:35	Session V: Signals, Sensors, and Actuators (Lecture Hall B)
19:30	Gala Dinner

Thursday April 22, 2010	
8:30 - 10:00	Session VI : Robotics and Autonomous Systems - B (Lecture Hall B)
10:00 - 10:30	Closing Ceremony
10:00 - 13:30	Tutorial (Lecture Hall B) From Low Level Control to Path Planning, Autopilot Design for Small and Miniature UAVs, Prof. Randy Beard, Brigham Young University, USA

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Session I: Robotics and Autonomous Systems - A

Lecture Hall B.(10:45-12:45)

Session Chair: Abdulrahman H. Bajodah

Time	Paper ID#	Author	Paper Title
11:40-12:00	79961	S. Parasuraman, Arif Wicaksono Oyong, Monash University	An EMG-driven musculoskeletal model for Robot Assisted Stroke Rehabilitation System using Sliding Mode Control
12:00-12:20	90723	Nesar Merah, KFUPM; Abdelhafid Bouhraoua, Computer Engineering Department. KFUPM; Mansour AlDajani, Systems Engineering, KFUPM; Mustafa El-Shafei, King Fahd University of Petroleum and Minerals	Design and Implementation of an Unmanned Ground Vehicle
12:20-12:40	59912	Abdulrahman H. Bajodah, King Abdulaziz University	Robot Manipulator Generalized Inversion Control
12:40-13:00	59913	Younes M. Al-Younes, Mohammed A. Al-Jarrah, and Ali A. Jhemi, American University of Sharjah, UAE	Linear vs. Nonlinear Control Techniques for a Quadrotor Vehicle, Paper

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Session II-A: Intelligent Systems			
Lecture Hall B (16:30 - 17:50)			
Session Chair: Ali Jhemi			
Time	Paper ID#	Author	Paper Title
16:30-16:50	13647	Takuo Suzuki, Yasushi Nakauchi, University of Tsukuba	Intelligent Medicine Case that Monitors Correct Dosing
16:50-17:10	41007	S. G. Ponnambalam, Lee Yi Zheng, Monash University Sunway Campus	Optimization of multipass turning operations using particle swarm optimization
17:10-17:30	15913	Tarik Ozkul, AUS; Suhail Al Dhafri, Emirates Institution for Advanced Science and Technology	Development of fuzzy logic based autonomous decision capability for imaging satellites
17:30-17:50	89915	Ali A. Jhemi and Mohammed A. Al- Jarrah, American University of Sharjah, UAE	UAV Testbed building and development for research purposes at the American University of Sharjah

Session II-B: Intelligent Systems			
Session Chair: Mostafa Esfandyar			
Senate Room (16:30 - 17:50)			
Time	Paper ID#	Author	Paper Title
16:30-16:50	62603	Farshad Safaei, Dept. of ECE, Shahid Beheshti University; Mostafa Esfandyar, Dept. of ECE, Islamic Azad University, Qazvin Branch	A multiple classifier to automatically recognize Iranian banknote based on neural networks
16:50-17:10	40616	Baha Khalil and Aydin Yesildirek, American University of Sharjah, UAE	System Identification of UAV under an Autopilot Trajectory Using ARX and Hammerstein-Wiener Methods
17:10-17:30	78186	Mohamad Al-Jaber, Khaled Assaleh, and Tamer Shanableh, American University of Sharjah, UAE	Enhanced User-dependent Recognition of Arabic Sign Language Via Disparity Images
17:30-17:50	69976	Daud Warraich, RMIT University	Autonomous homogeneous robots using multitasking in a search, pick and place operation

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Session III: Navigation, Localization, and Simultaneous Mapping

Lecture Hall B (9:45-11:45)

Session Chair: S. Parasuraman

Time	Paper ID#	Author	Paper Title
9:25-9:45	77049	Alawi Abdulla, Alaa Khalil, Abdulaziz Al Shehhi, Hamad Karki, Sai Cheong Fok, Petroleum Institute	Localization of a Submersible Mobile Inspection Platform in an Oil Storage Tank
9:45-10:05	27629	Yoshihiro Sakamoto, Haruhiko Niwa, Waseda University; Takuji Ebinuma, Tokyo University of Marine Science and Technology; Kenjiro Fujii, Hitachi Industrial Equipment Systems Co., Ltd.; Shigeki Sugano, Waseda University	Multiplexing Receivers to Improve Positioning Success Rate for Pseudolite Indoor Localization
10:05-10:25	35538	Evangelos Georgiou, Jian Dai, King's College London	Self-Localization of an Autonomous Maneuverable Nonholonomic Mobile Robot using a Hybrid Double-Compass Configuration
10:25-10:45	79310	S. Parasuraman, V.Ganapathy, Monash University	LABVIEW Based Mobile Robot Navigation system
10:45-11:05	40614	S. Parasuraman, V.Ganapathy, Monash University	Improved Ant Colony Optimization for Robot Navigation
11:05-11:25	46734	Steven Colbert, University of South Florida; Redwan Alqasemi, The University of South Florida; Rajiv Dubey, University of South Florida	Efficient Shape and Pose Recovery of Unknown Objects from Three Camera Views

Session IV: Mechatronics Education

Lecture Hall B (11:45-13:05)

Session Chair: Tarek Tutunji

Time	Paper ID#	Author	Paper Title
11:40-12:00	26520	Jorge Solis, Atsuo Takanishi, Waseda University, Japan	Development of a Wheeled Inverted Pendulum Robot and a Pilot Experiment with Master Students
12:00-12:20	53706	Lutfi Al-Sharif, Ashraf I. Saleem, Tarek A. Tutunji, Jordan	Mechatronic System Design: The Ideal Capstone Course?
12:20-12:40	64128	Mohammed Bani Younis, Tarek A. Tutunji, Philadelphia University	Reverse Engineering in Mechatronic Education
12:40-13:00	89911	Lutfi Al-Sharif, University of Jordan	Twenty Engineering Principles for Undergraduate Mechatronics Engineering Students

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Session V: Signals, Sensors, and Actuators

Lecture Hall B (15:15-17:15)

Session Chair: Yousef Haik

Time	Paper ID#	Author	Paper Title
15:15-15:35	73630	idris Ahmed Ali, Al-Ghurair University; Muamba Kabula, Hans L. Hartnagel, Technische Universitaet Damstadt	Electrothermal Simulation of Micromachined Power Sensors at DC and Microwave Frequencies
15:35-15:55	67125	Mohd Ikhwan Hadi, Mohd Rizal Arshad, Asrulnizam Abd Manaf, Universiti Sains Malaysia	Theoretical Characterization of Piezoelectric Micro Ultrasonic Transducer for Underwater Applications
15:55-16:15	42761	Ashraf I. Saleem, Philadelphia University	Component-based Modeling Framework for Mechatronic Systems
16:15-16:35	54808	Amir Lotfavar, Shiraz University of Technology; Mohammad Eghtesad, Shiraz University	Boundart control and two-time scale method for vibration-free movement and trajectory tracking of a flexible object handled by two cooperating robot manipulators
16:35-16:55	52739	Yousef Haik, United Arab Emirates University; Jason Hendrix, Florida State University; Mohammad Kllani, King Fisal University	Surface Micromachined Crescent Micropump
16:55-17:15	78236	Mai Ali, Lutfi Albasha, Hasan Al Nashash, American University of Sharjah, UAE	A System Study on a Wireless Subcutaneous Transmitter
17:15-17:35	70776	Abdelhani Boukrouche, Soraya Zenati, University of Guelma	Wiener filter improvement steps on the sphere

Thursday April 22, 2010

Session VI: Robotics and Autonomous Systems - B

Lecture Hall B (8:30-10:10)

Session Chair: Hassan Noura

Time	Paper ID	Author	Paper Title
8:30-8:50	34152	Hassan Noura, UAE University; François Bateman, Paul Cézanne University, Aix-Marseille III	Control of an Unmanned Aerial Vehicle
8:50-9:10	24957	Abbas Fardoun, UAE University; Hamood Albahal, UAE University; Ahmad Al-Gabri, Surour M. Araifi, Naji Al-Sayari, UAE University; Khalifa H. Harib, United Arab Emirates University	Design of a Wheeled Soccer Robot
9:10-9:30	88619	Amar Khoukhi, King Fahd University of Petroleum and Minerals	Hybrid multi-objective motion planning of parallel kinematic machines
9:30-9:50	18658	S. G. Ponnambalam, Yogeswaran Mohan, Monash University Sunway	Q-Learning Policies for a Single Agent Foraging Tasks

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		Campus	
9:50-10:10	64717	Mohamad Jafar Sadigh, Department of Mechanical Engineering, Isfahan University of Technology; Habib Ahmadi, Isfahan University of Technology	Safe Grasping with Multi-Link Fingers Based on Force Sensing