

**The 20<sup>th</sup> International Conference on Mechatronics and  
Machine Vision in Practice  
(M<sup>2</sup>ViP 2013)**

**CONFERENCE PROGRAM**

*September 20, 2013*

**&**

**8. Mekatronik Tasarım ve Modelleme Kongresi  
(MDM 2013)**

**KONGRE PROGRAMI**

*20 Eylül 2013*



**RoTAM**  
**RobotTechnologies Research Center**  
**ATILIM UNIVERSITY**



## Chairpersons

### Conference Chair

Prof. Dr. Abdulkadir Erden, Atılım University, Turkey

### Conference Co-Chair

Prof. Dr. John Billingsley, University of Southern Queensland, Australia

## M<sup>2</sup>ViP2013 Organizing Committee

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*September 20,2013 - Friday*

<b>09:00-09:30</b>	<b>REGISTRATION</b>		
<b>09:30-10:00</b>	<b>OPENING CEREMONY (Kemal Zaim Sunel Conference Hall)</b>		
<b>10:00-10:30</b>	<b>Keynote Speech (Kemal Zaim Sunel Conference Hall)</b> “ Path Planning for Unmanned Aerial Vehicles” Prof. Dr. Kemal Leblebicioğlu Department of Electrical and Electronics Engineering Middle East Technical University		
<b>10:30-10:50</b>	<b>COFFEE BREAK</b>		
<b>10:50-12:10</b>	Room A	Room B	Room C
	Session A1 A1.1, A1.2, A1.3, A1.4	Session B1 B1.1, B1.2, B1.3, B1.4	-
<b>12:10-12:50</b>	<b>SPONSORS SESSION</b> <b>“TAI and Aerospace Vision”</b> <b>E. Serdar Gökpınar</b> <b>Manager of the Technology Management Department, TAI</b>  <b>“Performance in Automation”</b> <b>Nuri Sarıkaya</b> <b>Ankara Area Manager, FESTO</b>		
<b>12:50-14:00</b>	<b>LUNCH (Atılım Garden)</b>		
<b>14:00-14:30</b>	<b>Keynote Speech (Kemal Zaim Sunel Conference Hall)</b> “Mechatronics with Fielded Applications in Defense Industry” Bülent Bilgin Manager of the Unmanned Systems Department Aselsan A.Ş.		
<b>14:30-15:50</b>	Room A	Room B	Room C
	Session A2 A2.1, A2.2, A2.3	Session B2 B2.1, B2.2, B2.3, B2.4	-
<b>15:50-16:10</b>	<b>COFFEE BREAK</b>		
<b>16:10-17:30</b>	Room A	Room B	Room C
	Session A3 A3.1, A3.2, A3.3	Session B3 B3.1, B3.2, B3.3, B3.4	Oturum C3 (MDM 2013) C3.1, C3.2, C3.3, C3.4
<b>17:30-18:30</b>	<b>Mechatronics Engineering Laboratory Visit</b>		
<b>19:00-21:30</b>	<b>GALA DINNER (Kuşkonmaz Restaurant)</b>		

Keynote Speech - Kemal Zaim Sunel Conference Hall

10:00-10:30

Chair:

“ PATH PLANNING FOR UNMANNED AERIAL VEHICLES”

**Prof. Dr. Kemal Leblebicioğlu**  
Department of Electrical and Electronics Engineering  
Middle East Technical University

Session A1 - Room A

10:50-12:10

Chair:

**A1.1 “A SOFT START APPLICATION WITH FUZZY TYPE II FOR HUB MOTORS” (13)**

Muammer ALBAYRAK, Raif BAYIR

**A1.2 “DEVELOPMENT OF A LOW COST RADIO CONTROLLER FOR TELE OPERATION SYSTEMS: CRANE CONTROLLER DESIGN AS AN INDUSTRY SPONSORED UNDERGRADUATE RESEARCH” (14)**

Göktuğ KAYNAKÖZ, Birkan DAĞDEVİREN, Kamil Yavuz KAPUSUZ, Ali KARA

**A1.3 “ORIENTATION TECHNIQUES OF MULTI-ROBOT SYSTEM WITH SWARM INTELLIGENCE” (35)**

Fuad ALIEW, Furkan KAPLAN, Süleyman Alper KALE

**A1.4 “EXPRESSIVE EEG SIGNAL VARIABILITY IDENTIFICATION IN ROBOTIC CONTROL COMMAND DEVELOPMENT” (4)**

Chiemela ONUNKA, Glen BRIGHT, Riaan STOPFORTH

Session B1 - Room B

10:50-12:10

Chair:

**B1.1 “CHATTER DETECTION USING VIBRATIONAL AND ACOUSTIC EMISSIONS IN TURNING PROCESS” (15)**

Süleyman BÜYÜKKOÇAK, Şener KILIÇ, Hakkı Özgür ÜNVER, Mehmet Bülent ÖZER

**B1.2 “EXPERIMENTAL INVESTIGATION OF A MAGNETORHEOLOGICAL FLUID DAMPER WITH PERMANENT MAGNET FOR HAPTIC FINGER GRASPING” (26)**

Okan TOPÇU, M. Murat AYGÜN, Yiğit TAŞCIOĞLU

**B1.3 “DEVELOPMENT OF A SINGLE DEGREE OF FREEDOM INERTIAL MEASUREMENT SYSTEM” (7)**

Hassan M.G. ZADEH, Sertaç Emre KARA, Kutluk Bilge ARIKAN

**B1.4 “OPEN ARCHITECTURE CONTROLLER FOR MODULAR RECONFIGURABLE MACHINE TOOL” (29)**

Abdul Qadir AMRA, Glen BRIGHT, Jared PADAYACHEE

**Keynote Speech - Kemal Zaim Sunel Conference Hall**

**14:00-14:30**

Chair:

**“MECHATRONICS WITH FIELDED APPLICATIONS IN DEFENSE INDUSTRY”**

**Bülent Bilgin**  
**Manager of the Unmanned Systems Department**  
**Aselsan A.Ş.**

**Session A2 - Room A**

**14:30-15:50**

Chair:

**A2.1 “SIMULATING THE KINEMATICS AND MOTIONS OF ROBOTIC MANIPULATORS USING 3D GAME DEVELOPMENT TOOLS” (41)**

Samuel NACION CUBERO, John BILLINGSLEY

**A2.2 “GRAK: A VISUAL ROBOTICS TOOLBOX USING MATLAB GRAPHICAL USER INTERFACE” (25)**

Sibel KAPLAN YILDIRIM, Huseyin CANBOLAT

**A2.3 “DESIGN AND TESTING OF EARTHQUAKE SIMULATION SYSTEM” (16)**

Çağrı KOÇ, Şeyma Nur ÇİZMELİ, Çağrı GÜRPINAR, Süleyman BÜYÜKKOÇAK, Mehmet Bülent ÖZER

**Session B2 - Room B**

**14:30-15:50**

Chair:

**B2.1 “ DESIGN AND INITIAL FLIGHT TESTS OF A HOLONOMIC QUADROTOR UAV WITH SUB-ROTOR CONTROL SURFACES” (21)**

Ertuğrul ÇETİNSOY

**B2.2 “AUTONOMOUS TRAJECTORY TRACKING AND IMAGING VIA A QUADROTOR TYPE UAV: A SYSTEM INTEGRATION APPROACH” (3)**

Mehmet Önder EFE, Mustafa KAYA, Munir ELFARRA, Rıdvan ÖZDEMİR

**B2.3 “DISTURBANCE REJECTION CONTROL OF A QUADROTOR EQUIPPED WITH A 2 DOF MANUPILATOR” (9)**

Mete AYDEMİR, Bülent İRFANOĞLU, Kutluk Bilge ARIKAN

**B2.4 “SPACE AND SPACE MECHATRONICS” (Special Review Paper)**

Sedat NAZLIBİLEK

Chair:

**A3.1 “A HISTOGRAM-BASED THRESHOLDING METHOD FOR EXTRACTING NON-URBAN ROADS FROM SATELLITE IMAGES” (17)**

Matin GHAZIANI, Yaser MOHAMADI, Erhan Ilhan KONUKSEVEN, A. Bugra KOKU

**A3.2. “A COMPARATIVE STUDY ON DISTANCE METRICS IN SELF-SUPERVIS UNSTRUCTURED ROAD DETECTION DOMAIN” (28)**

Kadri Bugra OZUTEMİZ, Akif HACINECİPOĞLU, A. Buğra KOKU, Erhan Ilhan KONUKSEVEN

**A3.3 “DEVELOPING AN ANALYSIS PROCESS FOR BIOLOGICAL SYSTEMS TO DESIGN BIOROBOTS – A CASE STUDY OF HUMAN HAND GRIPPING MOTION” (36)**

Aylin Konez EROĞLU, Zuhale ERDEN, Abdulkadir ERDEN

Chair:

**B3.1 “ILLUMINATION INVARIANT FACE RECOGNITION USING PRINCIPAL COMPONENT ANALYSIS-AN OVERVIEW” (39)**

Çağrı KAYMAK, Rüya SARICI, Ayşegül UÇAR

**B3.2 “CONCEPTUAL DESIGN OF ROSE HARVESTING ROBOT FOR GREENHOUSES” (37)**

Cahit GÜREL, Abdülkadir ERDEN

**B3.3 “FACE DETECTION ALGORITHM WITH FACIAL FEATURE EXTRACTION FOR FACE RECOGNITION SYSTEM” (38)**

Cahit GÜREL, Abdülkadir ERDEN

**B3.4 “A MECHATRONIC LOAD TESTING EQUIPMENT” (5)**

H. Orhan YILDIRAN, Cahit GÜREL

Oturum Başkanı:

**C3.1 “8X8 AĞIR TİCARİ VASITANIN DÜMENLEME SİSTEMİNİN TEK İZLİ ARAÇ MODELİ ÜZERİNDE BENZETİMİ” (4)**

Kahraman KÜÇÜK, Yunus GÜDER, Yasin YAMAN, Tamer BOZKIR, Kamil DENİZER, Kutluk Bilge ARIKAN

**C3.2 “ÖZEL ŞİFRELİ, TELEFON UYARIMLI VE ANDROİD UYGULAMALI ARAÇ GÜVENLİK SİSTEMİ” (6)**

Erdal AĞYOL, Melih KUNCAN, H. Metin ERTUNÇ

**C3.3 “OTOMOBİL PASPASI TEMİZLEME VE KURUTMA MAKİNASI TASARIMI: KAVRAMSAL TASARIM VE ŞEKİLLENDİRME TASARIMI ÇALIŞMASI” (7)**

Kasım SERBEST, Durmuş KARAYEL, Osman ELDOĞAN

**C3.4 “KARMAŞIK ÜRÜN MODELLENME VE OTOMOBİL KAPISI ÖRNEĞİ” (9)**

Vedat DEMİRTAŞ, Ahmet GAYRETLİ