



International Federation of Automatic Control

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Newsletter

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Fifty National Member Organizations

IFAC is proud to announce to have approved the application of its 50th National Member Organization.

This new member is the Tunisian Association of Specialists in Electrical Sciences (Electrical Engineering, Electronics, Automatic Control) - ASET.

Not only is the number 50 a quite impressive one, but it is also very good to see another national organization from the African continent join IFAC. This is particularly important also with a view to the 2014 IFAC World Congress, which will take place in South Africa. For a long time, South Africa was the only IFAC NMO in Africa. It is hoped that also other countries in Africa but also on other continents will follow suit with their engineering societies.

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Acknowledgement to IFAC would be appreciated.

THE IFAC WORLD CONGRESS 2011 Milan, Italy, August 28 - September 2, 2011

About the IFAC World Congress

The IFAC World Congress is the forum of excellence for the exploration of the frontiers in control science and technology, attended by a worldwide audience of scientists and engineers from academy and industry. The 18th IFAC Congress will be held in Milano, Italy, half a century after the 1st memorable congress of Moscow (1960).

About Milano

Milano is a city of ancient origins and yet extremely modern, thanks to its vitality and amazing capacity for change and renewal. New technology, cultural events, business, design and fashion combine here with a tradition of warmth and hospitality. Leonardo da Vinci, its most renowned citizen, lived here for two decades in the 15th Century, leaving an unforgettable heritage of engineering and artistic masterpieces, such as the Last Supper fresco.

About the Congress venue

The congress will be held at the Catholic University of Milan. This University, located in the heart of the city, is housed in an ancient building whose origins go back to the 4th century. Since Roman times, the building has been subject to various remodeling and changes of use. In the 7th and 8th century it became an important monastery, where classical texts were copied to be passed on to future generations. In the 13th Century it was a studium (namely a high study center), attracting bright minds and pilgrims from many countries. In the 16th century, it became a university in modern sense, and a renowned cultural spring of science and humanities.



Important Dates and Submission Guidelines

**Submission site opening:
June 1, 2010**

**Submission site closing:
September 30, 2010**

**Notification of acceptance:
February 15, 2011**

**Final paper submission:
March 31, 2011**

**Congress opening:
August 28, 2011**

**IFAC 2011 Web Site
www.ifac2011.org**

Call-for-Papers

A Special Issue of the IFAC Journal MECHATRONICS

supported by the

European Society for Precision Engineering on Thermal Effects in Mechatronic Systems

1. Motivation

Achieving high precision operation of Mechatronic Systems does require stable and reliable control of position and motion. For good performance the influence of thermal disturbances on the stability of the metrology loop must be accounted for with utmost care. In machine tools the heat generated by the driving motors and the processes lead to deformations that reduce the accuracy. In this case deformations might be as large as 100µm.

In semiconductor lithography tools, extreme attention must be given to thermal conditioning and control in order to achieve the required overlay precision, which is typical in the order of several nanometer of latest generation tools. In tools for nano science, thermal drift on a nanometer scale might already make an application useless. For instance, in the latest generation of Transmission Electron Microscopes, sub angstrom imaging resolution can only be achieved with corresponding small drift rates.

In applications like the examples given here, the manipulation of different parts is generally done by means of active control. The precision is determined by the strong interaction between metrology system, controller, actuators and motion devices in the Mechatronic System. The thermal issues therefore are of major importance to Mechatronic Systems. Nevertheless, thermal effects do not get much attention in research in the areas of modeling and control of Mechatronic Systems, unlike e.g. dynamics.

In this issue of Mechatronics it is intended to bring together contributions from authors that have been active in the field of thermal aspects to share their experiences and research results. The guest editors have been involved in a Special Interest Group on "Thermal Effects in Precision Systems" set up by the European Society for Precision Engineering and Nanotechnology (Euspen). This organization is supporting the realization of this special issue.

2. Objectives

The aim of this special issue is to bring together researchers and practitioners in the field of controlling the thermal effects on Mechatronic Systems.

3. Topics of Coverage

Papers are sought from mechanical engineering, control systems, electrical and electronics engineering, signal processing, mathematics, physics and other relevant disciplines. Relevant application areas are expected to be machine tool industry, metrology instruments, space instruments, semiconductor manufacturing and many others.

Topics will include, but are not limited to (categorization not mandatory):

1. Modeling tools to predict and/or compensate for the thermal effects in systems

- Model reduction
- Model validation
- Error compensation algorithms

2. Active control of the thermal state of a system and its environment

- Advanced control algorithms for thermal systems
- Identification of thermal systems for control
- Use of multiple sensor inputs (sensor fusion)
- Thermal actuator design

3. Measurement methods to determine the thermal state of systems

- Fast and accurate temperature sensing (milli Kelvin)
- Accurate temperature calibration methodologies
- Reconstruction of thermal state from sensor information
- Sensor location optimization
- Determination of thermal coefficients in vacuum systems

4. Design of mechanical structures with reduced thermal sensitivity

- Inherent stable design
- Controlling conductivity and insulation
- Thermal design methodologies for non standard ambient conditions (e.g. vacuum, cryogenic)

4. Composition and Review Procedures

All manuscripts should follow the general guidelines for authors of Mechatronics, which can be found at <http://ees.elsevier.com/mech/>. Manuscripts should not have been published or be under consideration at other journals.

The timetable for the special issue is:

30 April, 2010
due date for papers submission

30 June, 2010
reviews completed; and decisions sent

30 September, 2010
revised manuscripts due

30 November, 2010
final reviews complete, make decisions on acceptance

Guest Editors

Jan van Eijk, Delft University of Technology and MICE bv, The Netherlands, email: jan@micebv.nl

Theo Ruijl, FEI company, The Netherlands

Gert van Schothorst, Philips Applied Technologies, The Netherlands, email: gert.van.schothorst@philips.com

The Tables of Contents of the IFAC Journals can be found respectively at

Automatica
<http://www.elsevier.com/locate/automatica>

Control Engineering Practice
<http://www.elsevier.com/locate/conengprac>

Engineering Applications of Artificial Intelligence
<http://www.elsevier.com/locate/engappai>

Journal of Process Control
<http://www.elsevier.com/locate/jprocont>

Annual Reviews in Control
<http://www.elsevier.com/locate/arcontrol>

Journal on Mechatronics
<http://www.elsevier.com/locate/mechatronics>

Discrete Event System Design DESDes 2009 4th IFAC Workshop Gandia, Spain, 6 - 8 October, 2009

The 4th IFAC Workshop DESDes was successfully held in Gandia, Spain from 6th to 8th October, 2009. The workshop was co-organized by the University of Valencia, Spain (www.uv.es), and the University of Zielona Gora, Poland (www.uz.zgora.pl). The workshop is a continuation to those previously held in Poland and intends to give a periodicity of two/three years.

The workshop was attended by 76 attendants from 14 different countries, coming mainly from Europe but some participants came from Brazil and Tunisia. In response to the call for papers and e-mail announcement, 47 papers were submitted, from which 42 were accepted following a rigorous review process. Every paper was assigned to three/four reviewers from the International Program Committee.

Three plenary sessions were organized with one of the industrial partners (Analog Devices) participating. Another industrial partner was Omron Automation. In addition support was given by the Gandia Town Hall, University of Valencia and the Spanish Ministry of Research

The sessions were arranged to allow all the attendants to be present at every session. Only one time slot was used for a parallel session. Interesting topics related to Digital Design, Discrete Events and Control Systems. All this was discussed in a friendly environment, allowing fruitful meetings and the exchange of scientific ideas.

The scientific program was complemented by an interesting social program, allowing to enjoy the Mediterranean sea (the event was held in a hotel at the seaside) through a sailing boat ride, but also to enjoy the cultural area of Gandia visiting the Borgia Pope Castle and the old town where several Muslim and Catholic remains still exists.

As a summary, the event was an interesting meeting point which attendants enjoyed allowing also comprehensive networking. The main highlights from the event can be visited at

www.desdes.uz.zgora.pl



FORTHCOMING EVENTS

**2010
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Title	2010	Place	Further Information
8th ENIM/IFAC - Intl. Conference Modelling and Simulation – MOSIM 2010	May 10 – 12	Hammamet Tunisia	http://www.enim.fr/mosim10 e-mail: mosim10@enim.fr
IFAC Workshop Time Delay Systems – TDS 2010	June 07 – 09	Prague Czech Rep.	http://www.tds2010.fs.cvut.cz/ e-mail: tds2010@fs.cvut.cz
7th INSTICC/IFAC Intl. Conference Informatics in Control, Automation and Robotics – ICINCO 2010	June 15 – 18	Funchal Madeira, PT	http://www.icinco.org/ e-mail: icinco.secretariat@insticc.org
IEEE/IFAC Workshop Variable Structure Systems – VSS 2010	June 26 – 28	Mexico City Mexico	http://www.vss2010.unam.mx/ e-mail: gchair@unam.mx
IFAC Workshop Internet Based Control Education - (IBCE'10)	June 27 – 29	Orlando FL, USA	http://ibce10.epfl.ch/ e-mail: ibce@groupes.epfl.ch
American Control Conference - in cooperation with IFAC	June 30 – July 02	Baltimore MD, USA	http://www.a2c2.org/conferences/acc2010/
IFAC Workshop Intelligent Manufacturing Systems - IMS 2010 in conjunction with	July 01 – 02	Lisbon Portugal	http://www.ims10.ipb.pt/ e-mail: ims2010@uninova.pt
IFAC Workshop Advanced Maintenance Engineering, Service and Technology - A-MEST	July 01 – 02	Lisbon Portugal	http://www.ims10.ipb.pt/ e-mail: ims2010@uninova.pt
IFAC Symposium DYnamics and COntrol of Process Systems - DYCOPS 2010	July 05 – 07	Leuven Belgium	http://www.dycops2010.org/ e-mail: to be announced
IFAC/(EFB) Symposium Computer Applications in Biotechnology - CAB 2010	July 07 – 09	Leuven Belgium	http://www.cab2010.org/ e-mail: to be announced
IFAC Symposium Large Scale Systems: Theory and Applications – LSS 2010	July 11 – 14	Villeneuve d'Ascq France	http://lss2010.ulbsibiu.ro/ e-mail: p.borne@ec-lille.fr
IFAC Symposium Advances in Automotive Control - IFAC- AAC 2010	July 12 – 14	Munich Germany	http://www.vdi.de/aac2010 . e-mail: ringelmann@vdi.de
IFAC Symposium Mining, Mineral and Metal Processing - IFACMMM2010	August 02 – 04	Cape Town South Africa	http://www.ifacmmm2010.com/index.html e-mail: info@ifacmmm2010.com
10th FISITA/IFAC Intl. Symposium Advanced Vehicle Control - AVEC10	August 22 – 26	Loughborough UK	http://www.lboro.ac.uk/avec10 e-mail: Avec10@lboro.ac.uk
Latin American Control Conference LACC - in cooperation with IFAC -	August 24 – 27	Santiago Chile	www.acca2010.usach.cl e-mail: congreso.acca2010@usach.cl
IFAC Workshop Adaptation and Learning in Control and Signal Processing - ALCOSP 2010 in conjunction with	August 26 – 28	Antalya Turkey	http://www.ifacworkshops.org/ e-mail: ifacworkshops@boun.edu.tr
IFAC Workshop Periodic Control Systems – PSYCO 2010	August 26 – 28	Antalya Turkey	http://www.ifacworkshops.org/ e-mail: ifacworkshops@boun.edu.tr
IFAC Workshop Discrete Event Systems – WODES 2010	August 30 – September 1	Berlin Germany	http://www.wodes2010.org/ e-mail: info@wodes2010.org
IFAC Symposium Analysis, Design, and Evaluation of Human-Machine Systems- HMS	August 31 – Sept. 03	Valenciennes France	http://www.univ-valenciennes.fr/IFACHMS2010/ e-mail: contact-ifachms2010@univ-valenciennes.fr

FORTHCOMING EVENTS (ctd.)

IFAC Symposium Nonlinear Control Systems - NOLCOS 2010	September 01 – 03	Bologna Italy	http://www.nolcos2010.unibo.it/ e-mail: nolcos2010@morettieventi.it
IFAC Symposium Cost Oriented Automation – COA 2010	September 01 – 03	Prague Czech Rep.	http://ifac.cz/coa/ e-mail: richard@susta.cz
IFAC Symposium Intelligent Autonomous Vehicles - IAV 2010	September 06 – 08	Lecce Italy	http://iav2010.unile.it/ e-mail: iav2010@unile.it
IFAC Symposium Automatic Control in Aerospace, - ACA 2010	September 06 – 10	Nara Japan	http://www.space.t.u-tokyo.ac.jp/aca2010 e-mail: ifac-office@space.t.u-tokyo.ac.jp
IFAC Conference Management and Control of Production and Logistics – MCPL-2010	September 08 – 10	Coimbra Portugal	http://www.dei.uc.pt/MCPL2010 e-mail: mcpl2010@dei.uc.pt
IFAC Workshop 2nd Estimation and Control of Networked Systems (NecSys'10)	September 13 – 14	Annecy France	http://necsys2010.inrialpes.fr/ e-mail: carlos.canudas-de-wit@gipsa-lab.inpg.fr
IFAC Symposium Mechatronic Systems	September 13 – 15	Boston, MA USA	https://engineering.purdue.edu/IFACMech10/ e-mail: paden@engr.ucsb.edu
IFAC Symposium System Structure and Control	September 15 – 17	Ancona Italy	http://leibniz.diiga.univpm.it/SSSC10/ e-mail: to be announced
IFAC Conference Control Applications in Marine Systems - CAMS 2010	September 15 – 17	Rostock Germany	http://www.cams2010.uni-rostock.de e-mail: cams2010@uni-rostock.de
IFAC Workshop 50 Years of Nonlinear Control and Optimization	Sept. 30 – October 01	London UK	http://cap.ee.ic.ac.uk/~astolfi/IFAC_HW_10/ e-mail: to be announced
IFAC Symposium Telematics Applications – TA'2010	October 05 – 08	Timisoara Romania	http://www.upt.ro/ta2010 e-mail: office.ta2010@aut.upt.ro
IFAC Workshop Programmable Devices and Embedded Systems - PDeS	October 06 – 08	Pszczyn Poland	http://pdes.polsl.pl/ e-mail: pdes@polsl.pl
IFAC Workshop (4th) Fractional Differentiation and its Applications – FDA'10	October 18 – 20	Badajoz Spain	http://ees.fberg.tuke.sk/fda10 e-mail: fda10@tuke.sk
IFAC Workshop Supplemental Ways for Improving International Stability – SWIIS	October 27 – 29	Prishtina Kosovo	http://www.ubt-uni.net/swiis e-mail: ehajrizi@ubt-uni.net
CASIM/IFAC Conference Automation in the Mining Industry - AUTOMINING 2010	November 10 – 12	Santiago Chile	http://www.automining2010.com e-mail: automining@automining2010.com
IFAC Conference Modelling and Control in Agriculture, Horticulture and Post-Harvest Processing AGRICONTROL 2010	December 06 – 08	Kyoto Japan	http://elam.kais.kyoto-u.ac.jp/agricontrol2010/ e-mail: agrictrl@energy.kais.kyoto-u.ac.jp
Title	2011	Place	Further Information
Eurocast 2011	February 06 – 11	Las Palmas de G.C Spain	http:// to be announced e-mail: to be announced
IFAC WORLD CONGRESS – 18th Milano 2011	August 28 – Sept. 02	Milan Italy	http://www.ifac2011.org/ e-mail: info@ifac2011.org
Title	2012	Place	Further Information
IFAC Symposium Information Control Problems in Manufacturing – INCOM 2012	May 23 – 25	Bucharest Romania	http://incom12.org (not yet operative)
IFAC Workshop Dynamics and Control in Agriculture and Food Processing - DYCAF	June 13 – 16	Plovdiv Bulgaria	http:// to be announced e-mail: to be announced
IFAC Symposium Advanced Control of Chemical Processes - ADCHEM-2012	July 10 – 13	Singapore	http:// to be announced e-mail: to be announced
IFAC Symposium System Identification – SYSID 2012	July 11 – 13	Brussels Belgium	http:// to be announced e-mail: to be announced
Title	2013	Place	Further Information
IFAC Symposium Nonlinear Control Systems - NOLCOS	September 04 – 06	Toulouse France	http:// to be announced e-mail: to be announced