IFAC Newsletter Issue 5, October 2002

Contents:

IFAC General Assembly held in Barcelona

As every three years, the General Assembly of IFAC was held in the framework of the IFAC World Congress. This time the General Assembly took place in Barcelona, Spain, on July 22, 2002, a day after the opening of the IFAC World Congress.

The General Assembly consists of representatives of IFAC's National Member Organizations. The IFAC President, the Vice Presidents and the Treasurer report to the General Assembly. Highlight of the General Assembly are the elections, by which a new leading team is elected to conduct the day-to-day business of IFAC for the coming three years. The slate of candidates for these elections is carefully prepared by an Elections Committee, taking into account all aspects important for leadership positions in the Federation.

Thus, the General Assembly elected the following persons to lead IFAC in the forthcoming triennium:

President	Vladimir Kucera	(CZ)
President Elect	Wook H. Kwon	(KR)
Vice President (Technical Board)	Michael Masten	(US)
Vice President (Executive Board)	Peter Fleming	(UK)
Immediate Past President	Pedro Albertos	(ES)
Treasurer	Lino Guzzella	(CH)

Ordinary Members of the Council

Sergio Bittanti	(IT)
Han Fu Chen	(CN)
Ian Craig	(ZA)
Jean Michel Dion	(FR)
Rob Evans	(AU)
Arie Feuer	(IL)
Jose Geromel	(BR)
Yasushi Hashimoto	(JP)
Rolf Isermann	(DE)
Sirkka L. Jämsa-Jounela	(FI)
Kurt Schlacher	(AT)
Paul van den Hof	(NL)

The number of National Member Organization in IFAC continues to remain very stable around approximately 50. Three new NMOs have joined IFAC in the course of the past triennium coming from Cuba, Vietnam and

Bahrain. At the General Assembly in Barcelona, one further candidate from Bulgaria received a unanimously positive vote and will be an NMO of IFAC as soon as the first membership fee is paid.

NMOs play a very important role in IFAC. They have the right to organize technical events in their countries, they can nominate members to Technical Committees, thus playing an important role in determining the direction, the Federation is taking. It was very good to see that more than two thirds of IFAC's NMOs sent one or several representatives to the General Assembly meeting.

Transfer of IFAC Presidency from Pedro Albertos to Vladimir Kucera
at the Closing Ceremony of the Congress

Technical Board reorganized

In the course of the past triennium, activities were under way to adapt the structure of the Technical Board to the requirements of today's world of automatic control. The need to form some new Technical Committees and to merge or close down others as well as to regroup them within Coordinating Committees was studied in depth. The considerations have led to the new structure of the Technical Board. There will forthwith be three areas, i.e.

Theory

Theory will have the following Coordinating Committees:

>   *1. Systems and Signals;* Coordinating Committee Chair: T. Katayama (JP) and
>   *2. Design Methods;* Coordinating Committee Chair: R. Bars (HU)

Technology

Technology will have the following Coordinating Committees:
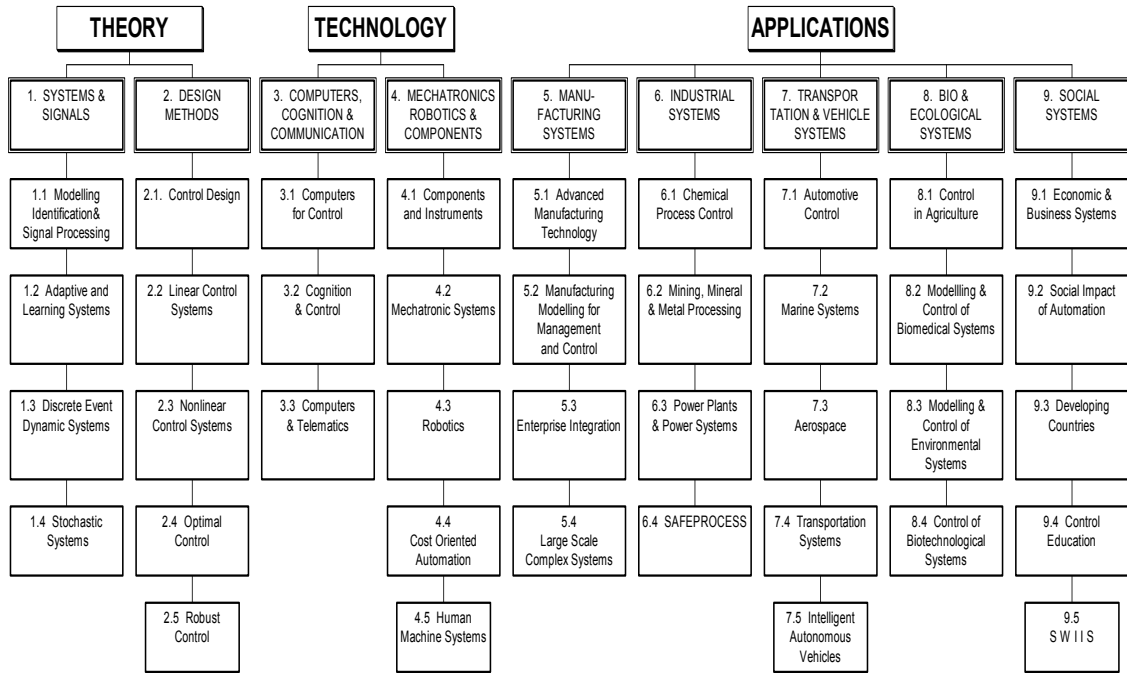
>   *3. Computers, Cognition and Communication*; Coordinating Committee Chair: W. Halang (DE) and
>   *4. Mechatronics, Robotics and Components;* Coordinating Committee Chair: A. Ollero (ES)

Applications

Applications will have the following Coordinating Committees:

>   *5. Manufacturing Systems;* Coordinating Committee Chair: S. Nof (US)
>   *6. Industrial Systems;* Coordinating Committee Chair: Ch. Georgakis (US)
>   *7. Transportation & Vehicle Systems;* Coordinating Committee Chair: U. Kiencke (DE)
>   *8. Bio & Ecological Systems*; Coordinating Committee Chair:E. Carsen; and
>   *9. Social Systems*; Coordinating Committee Chair: A. Talha Dinibütün (TR)

The Technical Committees within each Coordinating Committee are shown below. The Chairs of the Coordinating Committees and of the Technical Committees and the scopes of the Technical Committees will be presented in forthcoming issues of the IFAC Newsletter and will be published on the IFAC Homepage in due course.

THEORY		TECHNOLOGY		APPLICATIONS				
1. SYSTEMS & SIGNALS	2. DESIGN METHODS	3. COMPUTERS, COGNITION & COMMUNICATION	4. MECHATRONICS ROBOTICS & COMPONENTS	5. MANU-FACTURING SYSTEMS	6. INDUSTRIAL SYSTEMS	7. TRANSPORTATION & VEHICLE SYSTEMS	8. BIO & ECOLOGICAL SYSTEMS	9. SOCIAL SYSTEMS
1.1 Modelling Identification & Signal Processing	2.1. Control Design	3.1 Computers for Control	4.1 Components and Instruments	5.1 Advanced Manufacturing Technology	6.1 Chemical Process Control	7.1 Automotive Control	8.1 Control in Agriculture	9.1 Economic & Business Systems
1.2 Adaptive and Learning Systems	2.2 Linear Control Systems	3.2 Cognition & Control	4.2 Mechatronic Systems	5.2 Manufacturing Modelling for Management and Control	6.2 Mining, Mineral & Metal Processing	7.2 Marine Systems	8.2 Modelling & Control of Biomedical Systems	9.2 Social Impact of Automation
1.3 Discrete Event Dynamic Systems	2.3 Nonlinear Control Systems	3.3 Computers & Telematics	4.3 Robotics	5.3 Enterprise Integration	6.3 Power Plants & Power Systems	7.3 Aerospace	8.3 Modelling & Control of Environmental Systems	9.3 Developing Countries
1.4 Stochastic Systems	2.4 Optimal Control		4.4 Cost Oriented Automation	5.4 Large Scale Complex Systems	6.4 SAFEPROCESS	7.4 Transportation Systems	8.4 Control of Biotechnological Systems	9.4 Control Education
	2.5 Robust Control		4.5 Human Machine Systems			7.5 Intelligent Autonomous Vehicles		9.5 S W I I S

status: July 20, 2002

Supplemental Ways of Improving International Stability

BARCELONA 2002
IPC Report

The 15th Congress of the International Federation of Automatic Control was held in Barcelona from July 21 to 26, 2002. It was an exciting week during which scientists and engineers from all over the World had the opportunity to present new research findings and new applications, and discuss with each other the current and future developments of Automatic Control.

The number of registered participants was 2011, coming from sixty-six countries in all continents. They actively contributed to a successful technical program by presenting research papers, taking part in discussions, and exchanging fruitful ideas in many ways. About fifty percent of them came from Europe, with North America, Asia, and South America following.

The Congress week was preceded by two days of tutorial workshops on eleven different topics, which were attended by a total of one hundred and eighty-four participants. Tutorial workshops are one of the best ways to get acquainted with a technical subject by receiving first class information from world leading specialists.

The technical program of the Congress included seven plenary lectures given by prominent experts in a variety of topics, including control theory, industrial applications, robotics, social aspects of automation, computer technology, and control education. The attendance was high, going from eight to twelve hundred participants each, which gives a measure of the interest that these topics raise in the automatic control community.

Six milestone sessions, new in this Congress, provided insight into the current state and future directions of research in specific areas of automatic control, including manufacturing and instrumentation, design methods, biological systems, social impact of automation, industrial applications, and computer control.

General Chair Gabriel Ferraté at the Opening of the Congress | IPC Co-Chair Juan A. de la Puente at the Opening of the Congress | IPC Co-Chair Luis Basañez at the Opening of the Congress

The core of the Congress were the more than 1600 papers which were presented by their authors in 240 oral sessions and 12 poster sessions. These contributions cover all technical areas of control, and provide an accurate picture of the state of the theory, technology and applications of automatic control at the present time. The International Program Committee selected 1757 papers for acceptance out of the 2512 draft submissions received. For the first time in an IFAC Congress, an Internet-based computer system was used for paper submission and review. This resulted in reduced paperwork and improved flexibility for assigning papers to technical areas, performing additional reviews, and other useful activities. The amount of information available to the IPC members was greatly extended, enabling a much better visibility of the paper review and selection process.

As in all events of this size, some authors were not able to present their papers. However, the number of non presented papers was only seven percent of the Congress program, which shows an improvement over previous IFAC Congresses.

All presented papers will be published in the Congress Proceedings to be issued by Elsevier Science in a few months' time. In addition to this, a selection of the best papers in the Congress will be published in extended form by the IFAC journals and affiliated journals.

There were also eight fruitful panel discussions on a variety of control-related topics. In particular, the panel discussions on *Future directions of Automatic Control* and on *Role of Automatic Control in the IT Era* had more than one hundred and thirty attendants each, with some others following closely.

In addition to classical oral and poster sessions and panel discussions (now called the *live track* of the Congress), a *virtual track* was organized. The virtual track allowed registered participants to take part in remote discussions on the Internet. There were two kinds of virtual discussions:

·   *Paper pre-discussion*. Some selected papers have been posted on a web site for preliminary discussion before the Congress.
·   *Open forums*. These were discussions on selected topics, started by a moderator and followed by a live panel discussion in the Congress week.

A total of 100 papers were posted for pre-discussion before the Congress week. There were also 5 open forums, which were connected to panel discussions during the Congress week. Unfortunately, the participation in this activity was rather low, maybe due to the novelty of this kind of interaction with the authors and other members of the scientific community. Another possible source of inhibition may be the poor support for mathematical notation that can be currently found in web forms.

Of course, the success of the b'02 technical program has been the result of many people's effort. On behalf of the IPC, we would like to thank all the authors, IPC and sub-IPC members, reviewers, and participants for their contributions, and also the session chairs and co-chairs for conducting the technical sessions and providing

valuable feedback on their development. We are also grateful to the Congress Secretariat and computer services team, the National Organizing Committee, and the many volunteers who have contributed to its implementation.

Luis Basañez
Juan Antonio de la Puente
IPC Co-Chairs

Congress Participation

Altogether, the participants came from 66 different countries, totalling 2011 participants. The twenty countries with the highest number of participants are listed below.

Spain	254
United States	184
Japan	152
France	149
United kingdom	145
Italy	119
Germany	114
Sweden	81
Korea, Republic of	53
Brazil	45
Canada	44
China	44
Australia	42
Mexico	42
Russian Federation	42
Poland	34
Finland	33
Netherlands	32
Belgium	30
Portugal	28

Forthcoming Events

Title	2002	Place	Further Information
2nd IFAC Conference Mechatronic Systems - in co-operation with IEEE/ASME -	Dec. 9 – 11	Berkeley CA, USA	http://www.unex.berkeley.edu/eng/mech e-mail: mechatronics2002@unx.berkeley.edu

Title	2003	Place	Further Information
IFAC Workshop Optical Systems	February 2 – 5	Breckenridge CO, USA	http://www.ohio.edu/noncredit/optical.htm e-mail: greenfes@ohio.edu
IMACS/IFAC Symposium Mathematical Modelling – 4th MATHMOD	February 5 – 7	Vienna Austria	http://simtech.tuwien.ac.at/MATHMOD e-mail: inge.troch@tuwien.ac.at
IFAC Workshop Programmable Devices and Systems P D S-2003	February 11 – 13	Ostrava CZ	http://pds2003.vsb.cz e-mail: pds2003@vsb.cz
IFAC Workshop (2nd) Lagrangian and Hamiltonian Methods in Nonlinear Control	April 3 – 5	Sevilla Spain	http://www.esi.us.es/lhmnlc03 e-mail: lhmnlc03@esi.us.es
IFAC Workshop 7th Intelligent Manufacturing Systems IMS2003	April 6 – 8	Budapest Hungary	http://www.conferences.hu/IMS2003/ e-mail: ims2003@conferences.hu

IFAC Conference Intelligent Control Systems and Signal Processing – ICONS 2003	April 8 – 11	Faro Portugal	http://conferences.ptrede.com e-mail: icons03@ualg.pt
IFAC Workshop Guidance and Control of Underwater Vehicles	April 9 - 11	Newport UK	http://gcuv2003.newport.ac.uk e-mail: geoff.roberts@newport.ac.uk
IFAC Workshop Real Time Programming	May 14 – 17	Lagow Poland	http://www.iie.uz.zgora.pl/wrtp03 e-mail: wrtp03@iie.uz.zgora.pl
American Control Conference - in co- operation with IFAC -	June 4 – 6	Denver CO, USA	http://acc2003.me.berkeley.edu/ e-mail: bequeb@rpi.edu
IFAC Symposium 5th Fault Detection, Supervision and Safety of Technical Processes – SAFEPROCESS	June 9 – 11	Washington DC, USA	http://safeproc.gmu.edu e-mail: jgertler@gmu.edu
IFAC Symposium Power Plants and Power Systems 2003	June 9 - 11	Seoul Korea	http://ifacpps2003.org e-mail: ifacpps2003@insession.co.kr
IFAC Symposium 6th Advances in Control Education - ACE 2003	June 16 -18	Oulu Finland	http://ntsat.oulu.fi e-mail: office@atu.fi
IFAC Conference Analysis and Design of Hybrid Systems - ADHS03	June 16 – 18	St. Malo France	http://www.supelec-rennes.fr/adhs03/ e-mail: adhs03@supelec-rennes.fr
IFAC Symposium Advanced Control of Chemical Processes - ADCHEM 2003	June 18 – 20	Hong Kong China	http://www.ust.hk/adchem2003 http://www.adchem2003.uni-stuttgart.de/ e-mail: adchem2003@ist.uni-stuttgart.de
XVII IMEKO WORLD CONGRESS Metrology in the 3rd Millennium	June 22-27	Dubrovnik Croatia	http://www.imeko.org e-mail: imeko2003@hmd.hr
IFAC Symposium 4th Robust Control Design – ROCOND 2003	June 25 – 27	Milan Italy	http://www.elet.polimi.it/ROCOND2003 e-mail: colaneri@elet.polimi.it
IFAC Workshop Automatic Systems for Building the Infrastructure in Developing Countries (Knowledge and Technology Transfer)	June 27 – 28	Istanbul Turkey	http:// not yet available e-mail: talhad@dogus.edu.tr
IFAC Workshop 12th Control Applications of Optimization – CAO	June 30 July 2	Visegrad Hungary	http://www.conferences.hu/CAO2003/ e-mail: bars@aut.bme.hu
IFAC Workshop Technology and International Stability	July 3 – 5	Waterford Rep. of Ireland	http://www.ihrt.tuwien.ac.at/swiis03 e-mail: swiis@ihrt.tuwien.ac.at
IFAC Symposium Intelligent Components and Instruments for Control Applications – SICICA 2003	July 9 – 11	Aveiro Portugal	http://www.det.ua.pt/eventos/sicica2003 e-mail: sicica2003@det.ua.pt
IFAC Workshop Modelling and Analysis of Logic Controlled Dynamic Systems	June 30 August 1	Irkutsk Lake Baikal Russia	http:// not yet available e-mail: snv@icc.ru
IFAC Symposium 10th Transportation Systems	Aug. 4 - 8	Tokyo Japan	http: not yet available e-mail: tsugawa.s@aist.go.jp
IFAC Symposium 5th Modelling and Control in Biomedical Systems	August 21 – 23	Melbourne AUS	http://www.tourhosts.com.au/ifac2003 e-mail: ifac2003@tourhosts.com.au
IFAC Symposium 13th System Identification – SYSID 2003	August 27 – 29	Rotterdam NL	http://sysid2003.nl e-mail: info@sysid.nl
IFAC Symposium 7th Robot Control – SYROCO 2003	September 1 – 3	Wroclaw Poland	http://www.zpcir.ict.pwr.wroc.pl/syroco2003 e-mail: tchon@ict.pwr.wroc.pl
European Control Conference (in co-operation with IFAC)	September 1 – 4	Cambridge UK	http://conferences.iee.org/ECC03/ e-mail: jmm@eng.cam.ac.uk
IFAC Concerence Control Systems Design	September 7 – 10	Bratislava Slovakia	http://www.kasr.elf.stuba.sk/csd2003 e-mail: csd2003@kasr.elf.stuba.sk

IFAC Conference 6th Manoeuvring and Control of Marine Systems – MCMC 2003	September 17 - 19	Girona Spain	http://iiia.udg.es/mcmc03 e-mail: mcmc03@iiia.udg.es
IFAC Symposium 8th Automated Systems Based on Human Skill – joint design of technology and organization	September 22 – 24	Gothenburg Sweden	http://www.davinci.chalmers.se/Ifac_2003 e-mail: johan.stahre@hfe.chalmers.se
IFAC Workshop Intelligent Assembly and Disassembly	October 9 – 11	Bucharest Romania	http://www.iad2003.com e-mail: iad03@icar.pub.ro
IFAC Workshop New Technologies for Automation of the Metallurgical Industry	October 11 – 13	Shanghai China	http://www.baosight.com/ifac03 e-mail: wangwei@dlut.edu.cn
Title	**2004**	**Place**	**Further Information**
IFAC Symposium Automatic Control in Aerospace	June 14 – 18	St. Petersburg Russia	http://aca2004.aanet.ru e-mail: aca2004@aanet.ru
IFAC Symposium Telematics Applications in Automation and Robotics – TA 2004	June 21 – 23	Helsinki Finland	http:// e-mail: office@atu.fi
American Control Conference - in co-operation with IFAC -	June 30 July 2	Boston MA, USA	e-mail: speyer@seas.ucla.edu
IFAC Conference Control Applications in Marine Systems - CAMS 2004	July 7 – 9	Ancona Italy	http://cams04.unian.it e-mail: cams04@unian.it
IFAC Workshops on - Adaptation and Learning in Control and Signal Processing – ALCOSP	August 30 -		http: not yet available e-mail: katayama@amp.i.kyoto-u.ac.jp
- Periodic Control Systems – PSYCO	September 1	Yokohoma Japan	e-mail: sano@sd.keio.ac.jp
IFAC Symposium 6th Nonlinear Control Systems	September 1 – 3	Stuttgart Germany	http://www.nolcos2004.uni-stuttgart.de e-mail: nolcos2004@ist.uni-stuttgart.de
IFAC Symposium 11th Automation in Mining, Mineral and Metal Processing – MMM 2004	September 8 – 10	Nancy France	http://www.cran.uhp-nancy.fr/ifac-mmm2004/ e-mail: mmm2004@cran.uhp-nancy.fr
IFAC Workshop 2nd Advanced Fuzzy/Neural Control	September 16 – 17	Oulu Finland	http://www.ntsat.oulu.fi e-mail: office@atu.fi
IFAC Workshop Discrete Event Systems	September 22 – 24	Reims France	http://www.univ-reims.fr/wodes04 e-mail: wodes04@univ-reims.fr
IFAC Symposium System Structure and Control	December 8 – 10	Oaxaca Mexico	http: not yet available e-mail:

Support for Authors from Developing Countries
The Michel Cuenod Trust Fund

For the first time 16 scientists from developing countries, who had an accepted paper at the IFAC World Congress Barcelona '02, received financial support by the Michel Cuenod Trust Fund. Due to the support of altogether EUR 12.800,00 such a large number of mainly young scientists from 9 developing countries could participate in this important event.

The Fund was established 15 years ago at the 10th IFAC World Congress in Munich 1987, following the last will of Michel Cuenod, a former treasurer of IFAC for 21 years. He worked in developing countries for many years. In that period he realised that scientists and engineers of these countries felt frustration, discouragement, and at times resentment because of the impossibility of attaining their full human and scientific potential on account of the lack of financial resources. He was convinced that the personal commitment and efforts of all those who are aware of the situation, and are willing, must be combined to help their less fortunate colleagues in developing countries.

The Trust Fund is managed by a Board of Trustees. They are nominated by the members of the Board and appointed by the IFAC Council. The IFAC President and the IFAC Treasurer are ex officio members of the Board. Besides, it was agreed that Mrs Cuenod would remain a Trustee for life. The Fund is administered by the Treasurer of IFAC.

A separate IFAC account, called M. Cuenod Trust Fund, No. 681-319-30, has been opened in the Credit Suisse Zurich, the bank holding the assets of IFAC. All financial contributions to the Trust Fund, from whatever source they may originate, should be transferred to this special account.

Recipients of funds for the Barcelona Congress
and Trustees of the Cuénod Trust Fund

Young Author Prize
Applications Paper Prize

As announced in the last issue of the IFAC Newsletter, the winners of the Young Author Prize and of the Applications Paper Prize were determined from a number of 3 and 5 finalists respectively. The finalists were determined in advance, on the basis of the written paper review. At the Congress, members of the Prize Selection Committee went to listen to all the presentations of the finalists. Thus, the actual winner(s) was known only at the very last moment before the awarding of the prizes at the Closing Ceremony of the Congress.

The following paper was awarded the
IFAC Congress Young Author Prize:
Stabilization by Quantized State or Output Feedback: A Hybrid Control Approach
by Daniel Liberzon
for continuous-time systems with quantized signals, the paper explores the use of discrete on-line adjustments of quantizer parameters in order to achieve global asymptotic stabilization

The following paper was awarded the
IFAC Congress Applications Paper Prize
Flatness-Based Clutch Control for Automated Manual Transmissions
by Joachim Horn, Joachim Bamberger, Peter Michau and Stephan Pindl
for design, implementation and application of a nonlinear feedforward electrohydraulic clutch control for automatic shifting of standard manual transmissions

WHO IS WHO IN IFAC

S.L. Jämsä Jounela - IFAC Council Member

Sirkka-Liisa Jämsä-Jounela graduated from Oulu University of Technology in 1978 where she majored in process control. After graduation she worked as a software development engineer. In 1981 she continued her research work at the Electrical Engineering Laboratory of the Technical Research Centre of Finland, and received her Licentiate of Technology Degree from Helsinki University of Technology in 1985.

Prof. Jämsä-Jounela has gained practical experience in working for a number of companies in the Finnish process industry. In 1983 she joined Kemira Engineering and worked as a control engineer at the Siilinjärvi phosphate plant. During 1987-1991 she was employed as a research scientist (industrial researcher) by the Academy of Finland and Kemira Oy. During 1987-1988 she was a visiting scholar at the Department of Metallurgical Engineering, University of Utah, USA, and received her doctoral degree from the Helsinki University of Technology in 1990. In 1991 she joined the Outokumpu Group, where she worked as a senior consultant and also received practical experience in international automation projects. Her main responsibility was designing the instrumentation and control systems and implementing and testing control strategies for the unit processes of mineral processing plants.

Prof. Jämsä-Jounela has also made MBA studies at the Helsinki School of Economics and Business Administration, at Glasgow University, United Kingdom and at the European Business School in Copenhagen, Denmark.

She took up her current position as Professor in Process Control at the Helsinki University of Technology in 1994. The laboratory provides education in process automation, mainly in the fields of Chemical Technology, Forest Products Technology and Materials Science and Rock Engineering. She has published over 100 international conference and journal papers, mainly on process control and automation.

She began her affiliation with IFAC in 1992 as a member of the TC Automation in Mining, Mineral and Metal Processing, and in 1996 she was appointed Chair of this Technical Committee (1996-2002). In 1991 she was involved as IPC member and Editor in organizing the IFAC workshop on "Expert Systems in Mineral and Metal Processing " in Finland. In 2000 she organized the IFAC Workshop " Future trends in automation in mineral and metal processing" in Finland, and served the IPC chair in this event, as well as in other events organized by the same TC. She is currently serving as IFAC Council member and Vice Chair of the Technical Board.

Control Engineering Practice

Papers from the July 2002 Issue

Editorial
(G. Irwin)

Grey-box Model Identification via Evolutionary Computing
(K.C. Tan, Y. Li)
Scheduling Schemes for an Integrated Flight and Propulsion Control System
(N. Aouf, D.G. Bates, I. Postlethwaite, B. Boulet)
Control of Heavy-duty Robotic Excavator Using Time Delay Control with Integral Sliding Surface
(S.-U. Lee, P.H. Chang)
Predictive Control of a High Temperature-short Time Pasteurisation Process
(J.J. Ibarrolo, J.M. Sandoval, M. Garca-Sanz, M. Pinzolas)
Influence of the Process Design on the Control Strategy: Application in Electropneumatic Field
(X. Brun, D. Thomasset, E. Bideaux)

Special Section on Developments in High Precision Servo Systems
(T.H. Lee, T.S. Low)
Multivariable H infinite Feedback Control Design for High-precision Wafer Stage Motion
(M. van de Wal, G. van Baars, F. Sperling, O. Bosgra)
Development of an Integrated and Open-architecture Precision Motion Control System
(K.K. Tan, K.Z. Tang, H.F. Dou, S.N. Huang)
High-performance Servo Systems Based on Multirate Sampling Control
(H. Fujimoto, Y. Hori)
Ultra High-speed Positioning Control of a Gravure Engraving Unit Using a Discrete-time Two-degree of Freedom H-infinite Control
(M. Hirata, D. Tang, K. Nonami, H. Ogawa, Y. Taniguchi)
Data Mining and Knowledge Discovery for Processing Monitoring and Control, by X. Z. Wang, Springer Berlin, 1999
(G. Dodds)
Conference Calendar

Papers from the August 2002 Issue

Intelligent Fault-Tolerant Control Using Adaptive and Learning Methods
(Y. Diao, K.M. Passino)
Integrating Real-time Optimization into the Model Predictive Controller of the FCC System
(A.C. Zanin, M. Tvrzska de Gouvea, D. Odloak)
Spectral Principal Component Analysis of Dynamic Process Data
(N.F. Thornhill, S.L. Shah, B. Huang, A. Vishnubhotla)
A Servo Control System Design Using Dynamic Inversion
(C. Guarino Lo Bianco, A. Piazzi)
O^2CA^2, a New Object Oriented Control Architecture for Autonomy: The Reactive Layer
(P. Ridao, J. Batlle, M. Carreras)

Editorial(s)

(R. Isermann)
Mechatronics: From the 20th to 21st Century
(M. Tomizuka)
Mechatronic Developments for Railway Vehicles of the Future
(R.M. Goodall, W. Kortum)
Analysis and Simulation of a Lorentz-type Slotless, Self-bearing Motor
(Lyndon S. Stephens, Dae-Gon Kim)
Expectation-based, Multi-focal, Saccadic (EMS) Vision for Ground Vehicle Guidance
(E.D. Dickmanns)
Improvements in the Integration of Active Magnetic Bearings
(Norbert Skricka, Richard Markert)
Conference Calendar

New Editor-in-Chief for
Control Engineering Practice

At the end of July 2002 George Irwin stepped down from the position of Editor-in-Chief of the Journal. Taking over from Michael Rodd, who launched the Journal in 1998, he developed it into a meanwhile well-established IFAC Journal, with creditable ISI citation rankings. He prepared for direct electronic submission of papers for review, which has taken effect as of July 2002. Our thanks go to George Irwin for his activities and best wishes go to Adolf H. Glattfelder, who is George Irwin's successor as Editor-in-Chief of Control Engineering Practice.

Confirmation of Affiliate Membership

By returning this questionnaire, your Affiliate Membership and thus all related benefits such as free subscription to the IFAC Newsletter will be confirmed.

We therefore ask you to fill in this form, complete with all your particulars, and either return it to

<div align="center">

IFAC Secretariat
Schlossplatz 12
A-2361 Laxenburg, Austria

</div>

or send an e-mail with this information to:

<div align="center">

secr@ifac.co.at

Please mark the fields of interest overleaf for receiving announcements
of IFAC events in the areas listed

**Non-reply by December 31, 2002 will be considered
discontinuation of Affiliate Membership**

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Please print

Title:_____   First Name: _____   Surname:_____

Mailing
Address:_____

_____

_____

Telephone: _____   Fax:_____

e-mail:_____   http:_____

I accordance with the data privacy act I agree that the data given for Affiliate Membership may be passed on for IFAC purposes.

I wish to receive the printed Newsletter by   **mail** ☐   **I wish to receive the IFAC**
I wish to receive the electronic NL by   **e-mail** ☐   **Information Brochure**
                                                                and Journal Form ☐

Date:_____   Signature:_____

Fields of Interest

1	Adaptive and Learning Systems
2	Manufacturing Plant Control
3	Aerospace
4	Automotive Control
5	Chemical Process Control
6	Cognition and Control
7	Components and Instruments
8	Computer and Telematics
9	Computers for Control
10	Control Design
11	Control Education
12	Control in Agriculture

13   Control of Biotechnological Systems
14   Cost Oriented Automation
15   Developing Countries
16   Discrete Event Dynamic Systems
17   Economic and Business Systems
18   Enterprise Integration and Networking
19   Human Machine Systems
20   Intelligent Autonomous Vehicles
21   Large Scale Complex Systems
22   Linear Control Systems
23   Manufacturing Modelling for Management and Control
24   Marine Systems
25   Mechatronic Systems
26   Mining, Mineral and Metal Processing
27   Modelling and Control of Biomedical Systems
28   Modelling and Control of Environmental Systems
29   Modelling, Identification and Signal Processing
30   Non Linear Control Systems
31   Optimal Control
32   Power Plants and Power Systems
33   Robotics
34   Robust Control
35   Safeprocess
36   Social Impact of Automation
37   Stochastic Systems
38   SWIIS (Supplemental Ways of Improving International Stability)
39   Transportation Systems

On Affiliate Membership

Once every three years we ask you to confirm your Affiliate Membership by returning the questionnaire on this page or on the IFAC Homepage under "Latest News".

Affiliate membership is free of charge and entitles you to the following benefits:

-    The IFAC Newsletter (6 times per year)
-    The IFAC Information Brochure (published once every three years)
-    A reduced personal subscription rate for the IFAC journals (forms available upon request)
-    Receipt of Calls for Papers of IFAC events in your fields of interest

In addition to or instead of receiving the Newsletter on printed paper you can also download the information provided in the Newsletter from the IFAC homepage. You can reach the homepage via

http://www.ifac-control.org

Please return the confirmation of your Affiliate Membership even if you have only recently registered. We apologize for any inconvenience this may cause.

Please note also that the fields of interest you are asked to mark have been changed. They were revised at the recent Technical Board meeting in Barcelona to be at the cutting edge of technological developments and the scopes of IFAC events.

When you return the confirmation slip, please provide your complete address and other particulars, even if you wish to receive the Newsletter by e-mail to enable IFAC event organizers to approach you directly.

Gusztav Hencsey, Newsletter Editor

AUTOMATICA

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Closed-loop Model Set Validation under a Stochastic Framework
(T. Zhou, L. Wang, Z. Sun)
Closed-loop Persistent Identification of Linear Systems with Unmodeled Dynamics and Stochastic Disturbances
(L.Y. Wang, G.G. Yin)
On Trajectory and Force Tracking Control of Constrained Mobile Manipulators with Parameter Uncertainty
(W. Dong)
Robustness of Trajectories with Finite Time Extent
(U. Jönsson)
Sliding Mode Dynamics in Continuous Feedback Control for Distributed Discrete-event Scheduling
(S. Cho, W. Prabhu)
L_2 Model Reduction and Variance Reduction
(F. Tjärnström, L. Ljung)

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Non-asymptotic Confidence Ellipsoids for the Least-squares Estimate
(E. Weyer, M.C. Campi)
Analysis of Nonlinear Time-delay Systems Using Modules over Non-Commutative Rings
(X. Xia, L.A. Marquez, P. Zagalak, C.H. Moog)
Observer-based Strict Positive Real (SPR) Feedback Control Systems Design
(R. Johansson, A. Robertsson)
Analysis of Exclusively Kinetic Two-link Underactuated Mechanical Systems
(Ph. Mullhapt, B. Srinivasan, D. Bonvin)
Bandwidth vs Gain Design of H-infinite Tracking Controllers for Current-fed Induction Motors
(S. Chiaverini, G. Fusco)
Stabilization of Positive Systems with First Integrals
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Robust Control of Nonlinear Systems with Parametric Uncertainty
(Q. Wang, R.F. Stengel)
Stability and L_2 Gain Properties of LPV Systems
(D.J. Stilwell, J.W. Rugh)
Estimation of an N-L-N Hammerstein-Wiener Model
(Y. Zhu)

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(M.E. Halpern, B.T. Polyak)
Tracking with Sensor Failures
(P.M.G. Ferreira)

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Neural Networks for Modeling and Control of Dynamic Systems: A Practitioner's Handbook, by M. Norgaard, O. Ravn, N.K. Poulsen and L.K. Hansen
(D. Liu)
Stochastic Controls – Hamiltonian Systems and HJB Equations, by J. Yong and X.Y. Zhou
(Y. Hu)
Robust Adaptive Control, by P.A. Ioannou and J. Sun
(Y. Miyasato)
Digital Control Using Digital Signal Processing, by F. Nekoogar and G. Moriarty

(L. Grüne)

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(M. Nordin, P.O. Gutman)

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(A. Kawamoto, T. Katayama)
Identification of Discrete-time State Affine State Space Models Using Cumulants
(G. Gatt, N. Kalouptsidis)
Some Peculiarities of Identification in the Presence of Model Errors
(R. Pintelon, J. Schoukens)

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(K.B. Kim)
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Sliding Mode Observers for Detection and Reconstruction of Sensor Faults
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Technical Communique

State Estimation of (otherwise unobservable) Linear Mechanical Systems Through the Use of Non-smooth Impacts: The Case of Two Mating Gears
(L. Menini, A. Tornambé)

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Control-oriented System Identification: An H-infinite Approach, by J. Chen and G. Gu
(B. Pasik-Duncan)
Qualitative Theory of Dynamical Systems, by A.N. Michel, K. Wang and B. Hu
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