

IFAC Newsletter

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Contents:

IFAC Technical Committees and their Scopes	*
Technology Transfer in Developing Countries - Automation in Infrastructure Creation IFAC Conference, South Africa, July 2000	*
Advances in Automotive Control IFAC Workshop, Germany, March 2001	*
Conflict Resolution in Regions of Long Confronted Nations - SWIIS 2000 IFAC Workshop, Macedonia, May 2000	*
Future Trends in Automation in Mineral and Metal Processing IFAC Workshop, Finland/Sweden, August 2000	*
Papers from Control Engineering Practice, Nos 5&6, 2001	*
Papers from Automatica, Nos 6&7, 2001	*
Who is Who in IFAC	*
Forthcoming Events	*

IFAC Technical Committees and their Scopes

In our introduction of TCs and their scopes, we present the Coordinating Committee on Life Support Systems.

Coordinating Committee on Life Support Systems



Chair: Y. Hashimoto, Japan
YasushiHashimoto@agr.ehime-u.ac.jp

Technical Committee on Modelling and Control in Agricultural Processes



Chair: I. Farkas, Hungary
ifarkas@fft.gau.hu

Fosters modelling and control aspects of agriculture. Methodologies for agricultural production lines such as photosynthesis of crops under environmental stresses, soil-plant atmosphere cycle and metabolism of farm animals. Post-harvest processes such as grading, drying, storage of crops including fruits and vegetables. Food processing (quality and safety). Environmental and climate control of greenhouses, warehouses and animal houses. Energy issues in agriculture such as heating, cooling, lighting, and energy saving.

Technical Committee on Intelligent Control in Agricultural Automation



Chair: H. Murase, Japan
hmurase@bics.envi.osakafu-u.ac.jp

Addresses robotics and mechatronics for agricultural automation. Information technologies including precision agriculture, computer networks and sensor technologies. Phytotechnology for plant-factory, controlled ecological life support systems (CELSS), and advanced cultivation systems. Ergonomics including human-machine systems and human-machine interface in agricultural mechanization.

Technical Committee on Modelling and Control of Biomedical Systems



Chair: E.R. Carson, UK
e.r.carson@city.ac.uk

Promotes application of systems and control concepts, methodology, and techniques to medicine, biology and healthcare. Physiological modeling, simulation, identification, experimental design, control and knowledge-based methods. Modeling and control of structure and function in cellular, neuromuscular, neurosensory, metabolic, endocrine and physiological organ systems both in healthy and diseased states. Pharmacokinetics and pharmacodynamics, drug delivery for optimal therapy, control of physiological and clinical variables in intensive care, and in the management of chronic disease. Rehabilitation engineering, healthcare delivery, and human-machine interactions.

Technical Committee on Modelling and Control of Environmental Systems



Chair: A. Sano, Japan
sano@sano.elec.keio.ac.jp

Fosters all aspects of modelling and control methodologies of environmental systems to attain symbiosis between environment and technology. Prediction of global warming, management and processing of environmental observation data, risk analysis and management of environmental systems. Control, optimization, and management for environmental quality, global environmental issues, and socio-structure. System reform and integration for environments, control systems technologies for energy saving and cogeneration, energy conservation, and industrial environmental management.

Technology Transfer in Developing Countries Automation In Infrastructure Creation

**IFAC Conference
Pretoria, South Africa, 5-7 July 2000**

The DECOM– TT2000 conference was organized by the South African Council for Automation and Computation (SACAC), the IFACNMO for South Africa. It was sponsored by the IFAC Technical Committee on Developing Countries, with the Technical Committees on Control Education, Low Cost Automation, Power Plants and Power Systems, and Transportation Systems acting as co-sponsors.

This conference was the first conference of its kind, given its focus on developing countries. Particular emphasis was put on the application and adaptation of first world automation technologies to developing countries in the following areas: power systems; telecommunications systems; transportation systems; water supply and purification. All these four areas are currently of particular importance to South Africa and other developing countries, as a good and reliable infrastructure forms the basis of a modern economy.

Keynote and plenary presentations were arranged to complement the technical sessions scheduled for a particular day. A keynote address was given by Mr. Neo Moikangoa, Executive Vice President of the South African Council for Industrial Research, on "The social design of technology transfer to promote sustainable development". 6 plenary papers were presented focusing on the following topics:

- "Challenges of creating and maintaining power infrastructure in a developing country such as Zimbabwe - the role of technology transfer" by Mr. Mupotsa, Managing Director, Zimbabwe Power Company, Zimbabwe.
- "South African transport policy, strategy and implementation", by Mr. Shaw, General Manager: Passenger Transport Policy, Department of Transport, South Africa.
- "Integrated investment strategy for unlocking economic potential in developing countries" by Dr. Jourdan, Deputy Director General, Department of Trade and Industry, South Africa.
- "The innovation-technology transfer link: applications in developing countries", Prof. Pistorius, Dean, Faculty of Engineering, the Built Environment and Information technology, University of Pretoria, South Africa.
- "Automation in Telecommunications Operations and Systems Support", by Mr. September, Deputy Managing Executive, Telkom, South Africa
- "The South African water supply industry, a strategic overview of the activity and cost chain", Dr. Viljoen, Rand Water, South Africa.

There were 79 participants from 8 countries besides South Africa, i.e. France, Germany, Hungary, Netherlands, Poland, Portugal, Turkey, and Zimbabwe. They presented 58 papers that were grouped into 14 regular sessions with titles as shown below:

POWER

- Energy Management
- Pebble Bed Modular Reactors
- Power systems

TELECOMMUNICATIONS

- Telecommunications: System Design
- Telecommunications: System Implementation

TRANSPORTATION

- Intelligent Transportation Systems - a Reality
- European Experiences in ITS Applications
- Vehicle Identification Technologies

WATER SYSTEMS

- Technology Transfer in Developing Countries
- Education
- Miscellaneous applications

The social program included an African-theme banquet. The highlight of the evening was the presentation to Dr. JDN van Wyk of the SACAC Life-time Achievement Award. This award was given to Dr. van Wyk in recognition of an outstanding contribution to the activities of SACAC and IFAC over a period of 40 years. Dr. van Wyk helped draft the original SACAC constitution and was President of SACAC from 1965 to 1967. He has been on the executive committee of SACAC ever since. Dr. van Wyk served IFAC in various capacities, including as Vice-Chair of the Technical Board from 1984-1987, and as Council Member from 1990 to 1993.

Due to the success of this conference, the TC on Developing Countries decided to sponsor a follow-up event, i.e. the IFAC Workshop "Automatic Systems for Building Infrastructure in Developing Countries," Ohrid, FYR Macedonia 21-23 May 2001.

The program can still be viewed at:
<http://www.ee.up.ac.za/decom/program.html>

Ian Craig, NOC Chair

Advances in Automotive Control **IFAC Workshop** **Karlsruhe, Germany, 28-30 March, 2001**

The Workshops "Advances in Automotive Control" were initiated by the TC on Automotive Control in 1995. The 3rd such event took place in Karlsruhe, Germany, from March 28 to 30, 2001. The TC members have developed an efficient network, from which most of the IPC members came. This allowed the IPC to focus on invited papers, with great attention given to the quality of the papers. Automotive Control is an applied science requiring a close cooperation with industrial companies. Therefore, it was a major success of the 3rd Workshop to have 40 out of 150 participants come from industry. One quarter of the presented papers were co-authored by researchers from universities and industrial companies. In addition, one sixth of all papers came exclusively from industrial authors.

The 62 papers were organised into 12 sessions. In addition, there was a plenary talk given by Dr. Klaus Harms from Robert Bosch Corp. The topic of the round table discussion was "future trends and perspectives in automotive control". Prof. G. Rizzoni volunteered to enter the discussion results into an open forum at the next IFAC World Congress in Barcelona. A special edition of Control Engineering Practice will contain representative papers from this workshop.

The traditionally pleasant and relaxed atmosphere was appreciated by the participants. The workshop site was right at Karlsruhe castle. There was an excursion to the historic monastery of Maulbronn. In addition a cameo baroque concert was enthusiastically received at the banquet.

The 4th Workshop "Advances in Automotive Control" will be held in the Naples (Italy) area, and shall be organised by Prof. G. Rizzo from Salerno.

Prof. G. Gissinger, IPC Chairman
Prof. U. Kiencke (NOC Chairman)

Conflict Resolution in Regions of Long Confronted Nations - SWIIS 2000

IFAC Workshop

Ohrid, Macedonia, 22-24 May 2000

The IFAC SWIIS 2000 event was held at the faculty of Tourism and Hotel Park on the shore of Lake Ohrid and was opened by the Macedonian Minister of Science on behalf of Mr. Lj. Georgievski, the Prime Minister. After the opening ceremony, Em. Prof. M. Mansour, Member of the Swiss Academy of Natural Sciences, presented the invited plenary lecture entitled "Systems Theory and Human Science" followed by Prof. F.O. Kile, Chairman of the IFAC TC on SWIIS, who presented the keynote talk entitled "The Road to Active Peace". Control and systems scientists as well as several other professionals presented their latest achievements in systems approach to the study of issues and topics of conflict management and resolution as well as of international stability with a special focus on the specifics in regions of long confronted nations such as Southeast Europe. The Ohrid SWIIS event was a follow-up exploratory conference in applying systems and control science to conflict management and international stability in the series of dedicated IFAC SWIIS events in Laxenburg (AT) 1983, in Cleveland - Ohio (USA) 1986, in Budapest (HU) 1989, in Toronto - Ontario (CDN) 1986, and in Bucharest (RO) in 1998.

The IPC defined the final programme consisting of 2 invited papers, 2 survey papers, 2 combined contributions and survey papers, and 18 contributed papers by authors from 12 countries in Asia, Europe and North America. Apart from the two invited plenary talks and the invited survey paper dedicated to IFAC activities on the supplemental ways for improving international stability, there were 29 proposed papers of which 20 were accepted, while 9 were returned to the respective authors. One of the accepted papers was proposed as a special survey paper while two were identified as combined contributed and survey papers. At the Ohrid SWIIS event, 21 contributions were duly presented, with 3 non-shows only. In addition, a rather interesting panel discussion focused on the mutual interaction of systems and control science and technology with humanity centred sciences and ethics, economy and law, in particular.

The main point of departure of the SWIIS 2000 comes from the circumstance that the bipolar world no longer exists, and consequently the focus is shifting to the issues, problems and topics of concern as related to regions of long confronted nations such as in Southeast Europe, Near East, Central Asia, and some regions in Africa and Latin America. Thus the scope of this meeting was defined to explore ideas, models and methods based on systems science for socio-economic-, ecology-, ethics- and technology- based incentives for conflict modelling, management and resolution. This is considered to be the timely way to contribute to regional stabilisation processes within the globalisation process of Mankind's world in the next century. It has been designed to contribute to the following technical areas: methodologies; modelling, stability issues; incentives and international policy co-operation, the impact of regional academic collaboration; the impact of environment protection concerns, and the impact of ethics and social behaviour.

The participants of the SWIIS 2000 Workshop have evaluated the event as having provided considerable new insight and knowledge about SWIIS issues as well as having contributed to developing models and methods of handling and studying these issues.

G.M. Dimirovski, Vice-Chair of IFAC TC on Developing Countries (GEA)

Future Trends in Automation in Mineral and Metal Processing

IFAC Workshop

Cruise Liner M/S Silja Serenade

Helsinki-Stockholm-Helsinki, 22-24 August, 2000

A workshop on the current status and future trends in Automation in Mineral and Metal Processing was held on M/S Silja Serenade during a cruise between Helsinki and Stockholm, August 22-24, 2000. In attendance were 170 people from academia and industry, representing 26 countries

The aim of the workshop was to provide researchers and engineers from industry and academic life with a platform for reporting recent developments in the newly emerging areas of technology and their potential applications to process automation.

The technical programme consisted of a total of 72 papers, previously selected from full draft papers.

The technical program also included six plenary talks given by invited leading experts in the field : Prof. Tom McAvoy (University of Maryland, USA) who presented a talk on Intelligent "Control" Applications in the Process Industry; Jacques McMullen Director of Metallurgy and Technology (Barrick Gold Corporation, Canada) who focused his talk on Process Control Advance in Gold Processing ; Ryoichi Takahashi, Assistant General Manager of Corporate R&D (Sumitomo Metal Industries Ltd, Japan) made a presentation with the title Control Applications in Japanese Steel Industry, and Martin Schlang (Siemens AG, Germany) addressed Future Development in Neural Computation in Steel Processing.

A total of 85 papers were retained for the final programme.

Sponsors of the workshop included the IFAC Technical Committee on Automation in Mining, Mineral and Metal Processing; the Workshop was further supported by The Finnish Society of Automation, The Academy of Finland, Outokumpu Foundation, Automation Foundation, Helsinki University of Technology, The Finnish Association of Mining and Metallurgical Engineers and Technology Development Centre of Finland. The following companies, ABB Oyj, Larox Oyj, Outokumpu Oyj and Rautaruukki Oyj provided the workshop organizers with technical and financial assistance.

Two technical visits were arranged after the workshop, offering participants an opportunity to visit four Finnish mills that are at the forefront of process automation: Outokumpu Zinc Plant, Kokkola; Rautaruukki Iron and Steel Plant, Raahé; Outokumpu Chromium Mine, Kemi, and Outokumpu Stainless Steel Plant, Tornio.

One highlight in the program was a presentation of the contemplative stance on process automation in the mineral and metal processing industry, given by the members of the IFAC MMM TC. The final session also included a panel discussion on the influence of IT technology on process automation – a challenge for education – a challenge for the Mineral and Metal Processing Industry. This stimulated successful discussions during the workshop, and afterwards many positive comments were made by the participants.

A preprint volume of all of the papers was provided to those attending the workshop, and a proceedings volume to be published by Elsevier is in preparation. 24 papers were recommended for publication, and the following papers have already been accepted for publishing in the special section of Control Engineering Practice:

D. Hodouin, S-L. Jämsä-Jounela, M.T.Carvalho and L.Bergh "State of the art and challenges in mineral processing control"; L.G.Bergh, S-L. Jämsä Jounela " State of the art in copper hydrometallurgic processes control"; I.K.Craig, F.R. Camisani-Calzolari, P.C. Pistorius "A Contemplative Stance on the automation of continuous casting in steel processing"; R. Takahashi "Contemplative stance on the automation of MMM Processing: state of the art in hot rolling process control" and S-L- Jämsä-Jounela " Current status and future trends in the automation of mineral and metal processing".

B. Stenlund and A. Medvedev "Level Control of Cascade Coupled Flotation Tanks"; G. Hearn and M.J. Grimble "Robust Inferential Control of Hot Strip Mills"; A.S. Hauksdottir, A. Gestsson and A. Vesteinsson "Current Control of a Three-phase Submerged arc Ferrosilicon Furnace"; W. Kim, S. Won, B.-W. Jung and H.-H. Hong "Development of automatic skew reduction system and compensation models for a plate mill" ; K. Yano, S. Higashikawa and K. Terashima "Active liquid container transfer control on an inclined transfer path" and S. Cierpisz and A. Heyduk "Fuzzy logic control of coal blending".

Papers conditionally accepted for regular section of Control Engineering Practice are as follows:

N. Pezin-Dobrilla, D. Sauter, D. Thelliol and H. Noura " Sensor fault detection using second order information: Application to metal processing"; S- L Jämsä-Jounela et al " Fault diagnosis system for the Outokumpu flash smelting process"; T. Rauma, J. Nyberg and J. Herronen " Fuzzy control of furnace temperature in a zinc roaster"; D. Lee and Y. Lee " Application of neural –network for improving accuracy of roll force model in hot-rolling mill" and M. Wu, J-H. She, M. Nakano and W. Gui " Expert control and fault diagnosis of the leaching process in zinc hydrometallurgy plant".

The rest of the 24 papers have been submitted to the Affiliated Journal of Process Control.

As the list of the papers clearly shows, the workshop programme included many interesting industrial control applications in the MM industries. Industrial involvement was also evidenced by the fact that 50% of the workshop participants came from industry. Another considerable feature was a large number of young participants.

The next event organized by the IFAC MMM TC will be the 10th IFAC Symposium on Automation in Mining, Mineral and Meta Processing , 4-6 September 2001, Tokyo, Japan.

Sirkka-Liisa Jämsä-Jounela
IPC Chair, IFAC MMM TC Chair

Control Engineering Practice

Papers from the May 2001 Issue

Multi-model Decoupled Generic Model Control
(M. Duvall, J.B. Riggs, P. Lee)
Visualisation of Constrained Predictive Control of a Liquid-liquid Extractor
(M. Mulholland, M.V. Le Lann, M. Cabassud, A. Chouai, J. Prosser)
Co-operative Control of Multi-input Single Output Processes: On-line Strategy for Releasing Input Saturation
(Q.-G. Wang, Y. Zhang, W.-J. Cai, Q. Bi, C.-C. Hang)
Anisochronic Internal Model Control of Time Delay Systems
(P. Zitek, J. Hlava)
Multiple Nonlinear Parameter Estimation Using PI Feedback Control
(P.F. van Lith, H. Witteveen, B.H.L. Betlem, B. Roffel)
Assessment of the Sampling Rate in Control Systems
(A.Horch, A.J. Isaksson)
Model-based Condition Monitoring of an Actuator System Driven by a Brushless DC Motor
(D. Juricic, O. Moseler, A. Rakar)
Identification of Fuzzy Relational Models for Fault Detection
(P. Amann, J.M. Perronne, G.L. Gissingner)
High-speed High-precision Tracking Control for Electronically Controlled Winding Machines
(B. Mahawan, Z.-H. Luo)
Development of a Navigation and Control System for an Autonomous Outdoor Vehicle in a Steel Plant
(H. Mäkelä, T. von Numers)

Conference Calendar

Papers from the June 2001 Issue

Intelligent Control Systems of an Industrial Lime Kiln Process
(M. Järvensivu, K. Saari, S.-L. Jämsä-Jounela)
Sloshing Analysis and Suppression Control of Tiltingtype Automatic Pouring Machine
(K. Terashima, K. Yano)
Implementing Machine-directional Basis Weight Control for a Pilot Paper Machine
(H. Baki, H. Wang, M.T. Söylemez, N. Munro)
Adaptive Predictive Control of Computer Nox Emission
(G.P. Liu, S. Daley)
Observer-based Estimation of Parameter Variations and its Application to Tyre Pressure Diagnosis
(T. Umeno, K. Asano, H. Ohashi, M. Yonetani, T. Naitou, T. Taguchi)
Least Squares and Genetic Algorithms for Parameter Identification of Induction Motors

(F. Allongge, F. D. Ippolito, F.M. Raimondi)
Rainfall – Runoff Multi-modelling for Sensor Fault Diagnosis
(A. Boukhris, S. Giuliani, G. Mourot)
Multi-leak Detection and Isolation in Fluid Pipelines
(C. Verde)
Minimization of Blocking Time in Component-based Software Architecture for Control Systems
(Y. Jeon, C.-H. Choi)

Conference Calendar

Automatica

Papers from the June 2001 Issue

Editorial

Obituary for Pieter Eykhoff
(P. Albertos, P.M.J. van den Hof)

Papers

Disturbance Attenuating Output-feedback Control of Nonlinear Systems with Local Optimality
(K. Ezal, P.V. Kokotovic, A.R. Teel, T. Basar)
H-infinite Control, Stabilization, and Input-output Stability of Nonlinear Systems with Homogeneous Properties
(Yiguang Hong)
Ignored Input Dynamics and a New Characterization of Control Lyapunov Functions
(B. Hamzi, L. Praly)
State-dependent Scaling Design for a Unified Approach to Robust Backstepping
(H. Ito, R.A. Freeman)
Input-to-state Stability for Discrete-time Nonlinear Systems
(Z.-P. Jiang, Y. Wang)

Brief Papers

Parameter Variations, Relative Degree, and Stable Inversion
(V. Ramakrishna, L.R. Hung, G. Meyer)
Incorporation of Experience in Iterative Learning Controllers Using Locally Weighted Learning
(M. Arif, T. Ishihara, H. Inooka)
Analysis of Steady-state Tracking Errors in Sampled-data Systems with Uncertainty
(M.H. Khammash, L. Zou)
Performance Assessment of Multivariable Feedback Control Systems
(B.-S. Ko, T.F. Edgar)
Solving Optimal Control Problems by Means of General Lagrange Functionals
(P. Cosmol, M. Pavon)
Output Feedback Stabilization of Bilinear Systems using Dead-beat Observers
(Shigeru Hanba, Y. Miyasato)
Rotating Stall Control for Axial Flow Compressors
(C. Belta, G. Gu, A. Sparks, S. Banda)
The Analysis of Optimization Based Controllers
(J.A. Primbs)
Frequency Response Function Measurements in the Presence of Nonlinear Distortions
(J. Schoukens, R. Pintelon, Y. Rolain, T. Dobrowiecki)
Adaptive Tracking Control Using Synthesized Velocity from Attitude Measurements
(H. Wong, M.S. De Queiroz, V. Kapila)

Correspondence

Comments on "Robust Stabilization of MIMO Nonlinear Time-varying Mismatched Uncertain Systems"
(Z. Ruijun, P. Xuejun, H. Weili)

Book Reviews

Kalman Filtering Techniques for Radar Tracking, by K.V. Ramachandra
(Y. Bar-Shalom)
Fuzzy Control of Industrial Systems – Theory and Applications, by I.S. Shaw
(B.K. Bose)
Mechanics and Control of Robots, by G.C. Gupta
(N. Cowan)
The Art of Control Engineering, by K. Dutton, S. Thompson and B. Barraclough
(S.P. Bhattacharyya)
Control of Movement for the Physically Disabled, by D. Popovic and T. Sinkjaer
(A. Karniel)

Papers from the July 2001 Issue

Papers

Local Stabilization of a Class of Nonlinear Systems by Dynamic Output Feedback
(P. Chen, H. Qin, J. Huang)
An Adaptive output Feedback Controller for Robot Arms: Stability and Experiments
(P. R. Pagilla, M. Tomizuka)
Learning Variable Structure Control Approaches for Repeatable Tracking Control Tasks
(Jian-Xin Xu, W.-J. Cao)
Adaptive Policy for Two Finite Markov Chains Zero-sum Stochastic Game with Unknown Transition Matrices and Average Payoffs
(K. Najim, A.S. Poznyak, E. Gomez)
Systems with Persistent Disturbances: Predictive Control with Restricted Constraints
(L. Chisci, J.A. Rossiter, G. Zappa)
Output Feedback Adaptive Robust Precision Motion Control of Linear Motors
(L. Xu, B. Yao)

Brief Papers

Analysis and Design of Gain Scheduled Sampled-data Control Systems
(D.A. Lawrence)
Model Predictive Control for Max-plus-linear Discrete Event Systems
(B. de Schutter, T. van den Boom)
Optimal Trajectory Planning and Smoothing Splines
(M. Egerstedt, C.F. Martin)
Fuzzy Artmap Neural Network and its Application to Fault Diagnosis of Navigation Systems
(H.Y. Zhang, C.W. Chan, K.C. Cheung, Y.J. Ye)
Bayesian M-T Clustering for Reduced Parameterization of Markov Chains Used for Nonlinear Adaptive Elements
(M. Valeckova, M. Karny, E.L. Souto)
Identification of Static Errors-in-variables Models: The Rank Reducibility Problem
(U. Soverini, S. Beghelli)
Equivalence of Hybrid Dynamical Models
(W.P.M.H. Heemels, B. De Schutter, A. Bemporad)
Semi-global Robust Stabilization of MIMO Nonlinear Systems by Partial State and Dynamic Output Feedback
(W. Lin, C. Qian)
Almost Global Stabilization of the Inverted Pendulum via Continuous State Feedback
(D. Angeli)
Solutions of Nonlinear Optimal and Robust Control Problems via a Mixed Collocation/DAE's Based Algorithm
(M. Alamir)
Direct Adaptive Control Design for One-degree-of-freedom Complementary-slackness Jugglers
(A. Zavala-Rio, B. Brogliato)
Adaptive Robust Nonlinear Control of a Magnetic Levitation System
(Z.-J. Yang, M. Tateishi)

Technical Communiques

Performance of an Adaptive Algorithm for Sinusoidal Disturbance Rejection in High Noise
(M. Bodson) LMI-based Robust H-infinite Control of Uncertain Linear Jump Systems with Time-delays
(J. Gao, B. Huang, Z. Wang)

WHO IS WHO IN IFAC



Prof. Yasushi Hashimoto
Member of the Technical Board

Yasushi Hashimoto received the BS, MB and PhD degrees in Agricultural Engineering from the University of Tokyo in 1962, 1964 and 1967 respectively. In 1967 he became an associate professor at Ehime University. Since 1980, he has served as Full Professor and Head of Laboratory of Environmental Informatics and Control, Department of Bio-mechanical Systems, in Ehime University. He was a visiting professor at Duke University, USA in 1983. He also was an exchange scientist between the Royal Society of London and the Japan Society for the Promotion of Science (JSPS) in 1985, between the Belgian Academy and the JSPS in 1993 and between the Deutsche Academy and the JSPS in 1997. He organized the joint seminar between NSF and JSPS about measurement in plant science.

He is the author of several books: "Measurement Techniques in Plant Science"(Academic Press), 1990, "The Computerized Greenhouse"(Academic Press), 1993.

He is also member of the editorial board of "Computers and electronics in agri-culture"(Elsevier) and associate editor of "Control Engineering Practice"(Pergamon).

He was President of JaicAE(Japanese NMO of CIGR), SHITA (Japanese Society of High Technology in Agriculture). He is the President of JSAI (Japanese Society of Agricultural Informatics) and ECB (Japanese Society of Environment Control in Biology). He is also a member of the Science Council of Japan.

He is a Fellow of SICE, JaicAE, SHITA and JSAI, respectively and received the OCA from SICE, SHITA, JSAI and CIGR and the academic prize from ECB and SHITA.

Professor Hashimoto is currently the Chairman of the "Life Support Systems" Coordinating Committee of the International Federation of Automatic Control (IFAC), and was Chairman of the WG on Modelling and Control in Agriculture from 1988 to 1990, Vice-chairman of the TC on Applications and Chairman of the WG on Automatic Control Applications in Agriculture from 1990 to 1993, and Chairman of the TC on Control in Agriculture from 1993 to 1996. He has been a member of the Technical Board since 1995, serving as Chairman of the Coordinating Committee on Infrastructure and Environment from 1995 to 1996 and Chairman of the CC on Life Support Systems since 1996. He has been IPC Chairman and NOC Chairman of several IFAC events. He is now Chairman of IFAC-NMO, Japan.

Forthcoming Events

The list of forthcoming events is available on the IFAC Homepage at

<http://www.ifac-control.org>

or

in the printed version of the IFAC Newsletter, which is available from the

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Schlossplatz 12, A-2361 Laxenburg

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