

# IEEE Region 8 News

No 86 - May 1989

Europe, Middle East and Africa



Editor

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## 1992

A group of twelve European countries - the EEC - whose aim is to form a single unit having no trade or other barriers, has declared that 1992 will be the year in which a substantial part of that aim will be achieved. The Common Market has 12 legal systems, 12 histories and cultural backgrounds, 12 educational systems, 12 nationalistic politics of all shades of opinion and a dozen of everything else to which 2000 years of war, pillage, art and science have contributed. What problems, what promise and what challenges does this newborn society present to the Regional Members of the IEEE, both within and outside the EEC?

In the orderly chaos of this international Region, music, the arts, religion (and the IEEE), each in its own way, exemplifies an international communality of which the Fathers of the EEC would approve: no barriers except competence and good will.

### Industrial Regrouping

By acquisition, merger or private arrangement, many companies are regrouping to profit from this very large market of more than 320 million consumers; and those who take the view that the EEC might impose import conditions on "foreign" merchandise are hastily establishing European manufacturing bases. The former may provide development and research facilities, which can do nothing but good for professional engineers, but whilst from the latter we might expect general economic benefits, the professional engineer may find little therein to exercise his innovative skills.

### Standards

There is nothing which pleases the tidy bureaucratic mind more than rigid standards to which their "world" must adhere; doubtless the EEC bureaucracy will be no different from the rest. A few professional engineers with practical experience could be a great asset in establishing practical standards, which like laws, are of value only if a) they can be enforced and b) are seen by the public to be reasonable.

### Education

You may, in Europe, become professionally qualified at any age from 15 to 90 and this after a course of university study lasting from 3 to 13 years. Every country has its requirements for professional status and in an attempt to introduce some degree of order into the process, the EEC is dissuading a directive which should ensure that engineering qualifications would be recognised in all countries. They are not the first to make the attempt and one hopes that they will be more successful than their predecessors - midwives, vets and dentists have already reached agreement, why not engineers?

### Language

A longstanding popular misconception is that all Europeans speak English. All Region 8 members read English, some speak it and others write it - the spoken and written word in all languages are quite separate. If mobility of professional labour is to be achieved, it is language more than anything else which will for many years impede the engineer's freedom to work in any part of the EEC. Those who use computer "British English" spelling checkers or who purchase the emerging English/American dictionaries, will quickly realise that language contains a

dynamic element. We have perhaps to accept that English in one form or another is the language of science, but we have also to guard against its adoption as a universal language; to do so would be to lose centuries of literature and forms of expression for which English is unsuited.

### The Law

If you commit murder or theft in any European country the practical consequences are straightforward and the outcome simple. But the fusion of 12 separate legal systems which deal with matters such as company law, staff health, safety, and product liability, surely present a daunting prospect of complexity and delay from which only the legal profession can profit; if to this we add the European Court, only the young will survive to hear the court's verdict.

It might be thought that these are not matters of concern to Region 8 members, but even with the existing law an individual engineer can be sued under Product Liability. Professional liability insurance premiums in the U.S. can exceed \$100,000 per year and have led some to abandon their profession and enter a field where the risks and damages are less severe; how do we avoid a similar situation in Europe?

### The EEC and Us

The EEC provides us with nothing directly, only an atmosphere of cooperation, it is our responsibility to take advantage of the opportunity that this cooperation presents. Above all else there is a need for tact and diplomacy. In spite of repeated and sincere assertions from the United States that they support fully a policy of cooperation, there remain some European suspicions concerning a "US takeover"; suspicions which are reinforced by a vocal minority of

US members with isolationist views.

We should search for services which are rarely, if at all, provided by the national societies: highly specialised conferences, small perhaps and by invitation only; there might be "The Fiat Electronic Forum - Design, Manufacture and Use of Tri-state Electronic Devices"; do we speak to the right audiences? a didactic conference for Local Government Officials - "The Generation of Electricity from Domestic Refuse". There is some evidence to suggest that a European International Standards Service would be of use. There must be many more.

The IEEE Region 8 has much in its favour: in some ways it has already arrived at the EEC's concept of a harmonious community, it has experience in the conduct of international committees, access to a considerable volume of technical literature and a demonstrated ability to live in peace with nationalism. All this surely forms a basis for enhancing our steadily improving relations with national societies, in a way which will complement their activities and perhaps introduce some new thinking into a partnership between professional engineers and the lay public. Opportunity will knock politely on your door, if there is no reply it will go quietly away to some more hospitable place.

The Editor

## 1992



## West Germany

### "25 Years of Service to the Profession"

By Prof. Dr.-Ing. Adolf J. Schwab

This year the Germany Section celebrates its 25th anniversary; it was founded on 8th April 1963 and its membership, since that time, has increased tenfold from 200 to almost 2000. Two very active Chapters (MTT/AP and Computer), two more in planning (Circuits and Systems - contact Prof. Mlynski - Karlsruhe) and (Power Engineering - contact Prof. Handschin - Dortmund), 8 Student Branches and participation in more than 10 national and international conferences in 1988, bear witness to our fast growing IEEE activities.

Since its start, of particular importance for the IEEE in Germany has been our good rela-

tionship with the national German Organisation, VDE, which in addition to cooperating extensively in scientific matters, conferences etc., handles the secretarial functions of the Section.

The formal Section celebration under the theme "25 years Service to the Profession" will take place at the CompEuro '89 Conference in Hamburg, with a Lunch Speech and an historical review of the IEEE in Germany.

During the Region 8 25th Anniversary celebrations in Munich, the first IEEE Heinrich Hertz medal, commemorating 100 years of Hertz's discoveries,

was awarded to Professor H.G. Unger, from Braunschweig. Three new IEEE Fellows were elected in the Germany Section: Prof. K. Feser - Stuttgart (High Voltage), Prof. R.H. Jansen - Ratingen (Microwaves) and Prof. P.J. Kuhn - Stuttgart (Communications).

• In July 1989 the Standards Office of the IEEE will be presenting, in Munich, a series of computer software seminars. These will be given in American English. Each of the six seminars is composed of lectures and a small group workshops; the number of delegates is limited to 30 on each occasion.

• A conference on "Microelectronics for Information Technology" will be held in Stuttgart from 3rd-5th October 1989.

A meeting of the Executive Committee was held in Stuttgart on 16-17th January, followed by technical excursions and a members' meeting in Böblingen, with talks and discussions dealing with the IEEE and other matters; this was well received by about 30 guests. The next meeting is scheduled for 13-14th November in Frankfurt - Main

Section Chairman: Prof. Dr-Eng Adolf J. Schwab, Kaiserstrasse 12, 7500 Karlsruhe 1, Federal Republic of Germany. Fax +49 721 608 4290

## France

By Mr. J. Cladé

### Chapter Activities

The France Section enhances its technical activities through its Chapters and it is happy to announce the establishment of the new MTT Chapter (Microwave Theory and Techniques). The active French Chapters are now the following:

- ASSP - Acoustics, Speech and Signal Processing: Chairman M. Bellanger.
- PE - Power Engineering: Chairman J. Cladé
- COMSOC - Communications: Chairman D. Lombard
- COM - Computer: Chairman E. Gelenbe
- MTT - Microwave Theory & Techniques: Chairman V. Fouad Hanna
- EMC - Electromagnetic Compatibility: Organiser F. Mayer

### Awards

The France Section has pleasure in announcing the election of four Senior Members to the Fellow grade - we congratulate them:

*Eugene J. Dieulesaint, for contributions to acoustoelectronics and the application of surface acoustic-wave devices in signal processing.*

*Claudé R. Galand, for leadership in digital speech coding technology*

*Odile M. Macchi, for contributions to adaptive filtering in communications and signal processing*

*Henri C.R. Persoz, for contributions to the development of modern methods in the planning and operation of electric power systems.*

In association with other Societies, the France Section of Region 8 is co-sponsoring EUROSPEECH (Paris 26-28th September 1989). Information from J.P. Tubach, Sup Telecom, Département Signal, 46 rue Barrault, 75634 Paris Cedex 13, France. E-Mail - Tubach a Enst.Fr.

### Other French News

Dans le cadre des accords passés entre l'A.R.E. et la Section française de l'I.E.E.E., nous annonçons la conférence suivante: L'évolution générale des semi-conducteurs (7 juin 1989)

Cette conférence aura lieu à 17 H 30, salles des Commissions FIEE - 17 rue Hamelin - Paris.

Section Chairman: Dr. J. Cladé, Directeur Adjoint à la D.G. d'EDF, 2 rue Louis Murat, 75384 Paris, Cedex 08, France.

## Icelandic Honours



*Tony Welch receives his Knight's Cross from President Vigdis (Photo courtesy Morgunbladid, Reykjavik)*

On 14th February 1989, during his 79th visit to her country, Mr. T.W. Welch of T.W. Welch & Partners Ltd, was invested by the President of Iceland with the Knight's Cross of the Icelandic Order of the Falcon. This Icelandic Knighthood was conferred for services to Iceland since 1970, as Consultant Engineer to the Icelandic Civil Aviation Administration.

Mr. Welch was engaged in 1979 to study and define ways in which radar could assist the Icelandic Air Traffic Control service; he has since been able to assist the Foreign Office of that country, the Coastguard service and the Post, Telephone and Telegraph Department. He is a Fellow of the IEE, a Senior Member of the IEEE and a Member of the Royal Institute of Navigation.



# THE ELECTRONIC MEDIA EXPLOSION



## TOWARDS GLOBAL INFORMATION

ITU-COM 89 will attract thousands of visitors to Geneva during October 1989 to see the latest advances in electronic mass media applications, including broadcasting. Among these visitors will be some 800 broadcasting experts from the ITU's 166 member countries attending the CCIR Final Meetings between September and November 1989.

The International Telecommunication Union invites all companies, corporations and governments, to participate in the Exhibition with displays of their electronic mass media applications and services to the largest and best informed audience in the world. ITU-COM 89 will place particular emphasis on broadcasting-oriented applications and will provide an ideal opportunity for industry-leaders to open up new scope for their activities.

Three Symposia will draw together policy-makers, engineers, scientists, film and television producers, lawyers, users to hear and exchange views on the following themes:

- Policy Symposium: "Information Exchange in Tomorrow's World"
- Technical Symposium: "New Horizons in Electronic Media"
- Legal Symposium: "A Legal Mosaic for Global Communications".

With the Exhibition, Symposium and Book Fair, ITU-COM 89 will be the venue for meaningful and stimulating dialogue as well as demonstrations of electronic mass media applications for communications between nations, between communities and between individuals.

### High Definition Television – the new challenge in broadcasting

High Definition Television (HDTV) is the most talked-about development in broadcasting. Its impact on the industry, on viewing patterns and on market penetration is still a matter for animated discussion although this is expected to be fully realized only in the 1990s. However, the future impact of HDTV has already been compared with that

of colour television, because of the radical changes it would bring to the way in which broadcasts are produced, projected and received.

At ITU-COM 89, you will have an opportunity to see and compare the different schemes being developed in Japan, Europe and the United States. Displays will be arranged in both the Japanese and American National Pavilions and it is expected that the Eureka Project will also participate with a special stand.



## 1st World Electronic Media Symposium & Exhibition

Please send more detailed information on:

- |  |  |
|--|--|
| <input type="checkbox"/> ITU-COM 89                            | <input type="checkbox"/> Legal Symposium, 4-6 October 1989 |
| <input type="checkbox"/> Policy Symposium, 2-4 October 1989    | <input type="checkbox"/> Book Fair, 3-8 October 1989       |
| <input type="checkbox"/> Technical Symposium, 4-7 October 1989 |  |

Name

Company

Organization

Address

Tel.  Date

**Return to: International Telecommunication Union, ITU-COM 89 Secretariat, Place des Nations, CH-1211 Geneva 20, SWITZERLAND**

## GENEVA 3-8 OCTOBER 1989



## From the Regional Director

**Professor Sven-Olof Öhrvik**

In the February Region 8 News I mentioned the preparations for the IEEE Transnational Desk; it was established at the end of March under the name "Transnational Office", with Barbara Ettinger as its manager. She has worked with the IEEE for eight years, including participation in the Transnational Committee. We are fortunate in having access to a very efficient and experienced person to help us with special Regional problems, where the normal process of contacting the New York or Piscataway offices does not work as well as we should like. Barbara attended the Region 8 Committee in Budapest in order to establish personal contacts. The R 8 News will report on these discussions in the next issue.

The IEEE is a dynamic organisation, trying continuously to improve its operations and its organisational structure so as to serve the members better, especially those outside the US. We in the non-US Regions are gradually becoming more important - our growth rate is considerably larger than that within the US. As these activities will occupy a large part of my time this year, I should like to give you a short summary of the central organisation seen from my point of view, and indicate the areas in which there might be changes.

In the diagram I have tried to indicate the most important parts of the very complicated IEEE organisation. The top level consists of the Executive Committee (EXCOM) and the Board of Directors (BoD). The

EXCOM deals with operational matters and the BoD is responsible for policy and planning for the future.

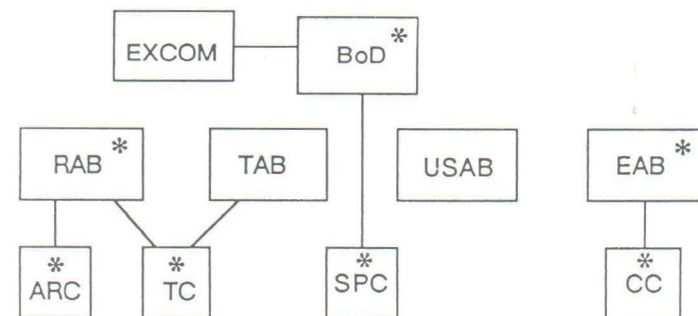
The Board of Directors consists of some thirty members; ten representatives from the Regions and ten from the Societies. This duality can also be seen in the two parallel entities, the Regional Activities Board (RAB) and the Technical Activities Board (TAB). Since about 80% of the Institute's members are in the US, their specific interests are the responsibility of the US Activities Board (USAB), an example of such specific interests being Professional Activities.

Another important US activity is the accreditation of technical universities, which is within the province of the Educational Activities Board (EAB), whose other major project is Continuing Education. Topics and problems which are of concern to all non-US Regions are within the province of the Transnational Committee (TC) - established in 1989. Previously there were two separate transnational entities: one attached to RAB, the other to TAB and since there is no separate entity for the non-US Regions, our interests tend to dominate the work of the TC.

There is also a large number of committees which deal with more specific topics. A few examples are: the Strategic Planning Committee (SPC), Awards and Recognition Committee (ARC) under RAB, and the Curriculum Committee (CDC) under EAB. The SPC is extremely active with several meetings during the first half of 1990; the Region 8 representative on that Committee is Folke Bolinder from Chalmers, Sweden. The CC is newly formed and more information is given below. A very minor committee, of which I am the Chairman, is the ad hoc committee to enquire

into the possibility of speeding up IEEE services to all members; the response time is sometimes very long in areas remote from the US. Entities in which I participate are marked with an \* in the diagram, and I am especially interested in your comments and suggestions related to these.

A major top level objective for 1989 is to review the IEEE organisation. Examples of items for discussion are:



- Can the contacts and relations between RAB and TAB be improved, including contacts and support of chapters via the Sections? A start was the establishment of a Joint TC between RAB and TAB, and also the RAB/TAB ad hoc Chapter Committee.
- Should the organisation structure more clearly take into account the differences in background and interests between the US and non-US regions, but keeping in mind that one of the most important strengths of the IEEE is the world-wide unity of its members?
- In view of the rapid changes in needs and technical possibilities, what are the most important educational topics which should be considered? Again taking the point of view of a non-US Region, do we have a special interest in

Continuing Education packages or are there special problems with the use of US produced material, with its different background, technical standards and even language? One urgent problem is that some of the continuing education programmes need heavy subsidies from general funds.

- Another matter of special interest to us is the new Curriculum Committee. EAB has

requested that the Committee should focus their study on the West European situation. The objective is to devise a recommendation for an "invariant core" that should be included in the university education of all electrical engineers in the Regions and which would change only slowly with time.

A general problem is that there is insufficient contact and dialogue between the Members and the IEEE HQ, which results in large difficulties in assessing the real needs and interests of the members. By means of reports in the Region 8 News I hope to be able to make a small contribution towards bridging this communication gap. However, it is vital that you give me your views on what you expect in return for your IEEE membership subscription.

*Professor Sven-Olof Öhrvik, Vins-tavagen 20, S-16354, Spanga, Sweden. Fax: +46 461 89948.*

## Greece

*By Professor B.C. Papadias*

During the past six months Membership Development has been spectacular, the total membership of the Section being now some 650 (including 75 members from the Cyprus Sub-section). The educational activities in the period October 1988 to April 1989 comprise seven Technical Meetings plus one educational and social event, at the beginning of the New Year. A distinguished lecturer on power electronics has been invited to Athens to give a lecture in October next.

Our students too are very active. Apart from editing "Horizons", they have entered three papers for the Student Paper Contest to be held in Lisbon; they have also organised two visits to Lisbon.

The participation of the Section in MELECON '89 is also good, with thirteen papers; several authors will be visiting Lisbon.

*Section Chairman: Prof. Basil C. Papadias, Dept of Electrical Engineering, National Technical University of Athens, 42 Patission Street, Athens 106 82 Greece. Tel: 01 3600551*



# **Journées d'électronique 1989**

## **10–12 Octobre 1989, Lausanne, SWITZERLAND**

### **International Conference on**

# **ARTIFICIAL NEURAL NETWORKS**

#### **Programme and Objective**

The objective of these "Journées" is to cover as exhaustively as possible all aspects of Artificial Neural Networks. Intelligence, artificial or not, is concerned by several steps of cognition. The first step is the field of perception (signal or pattern recognition). The second step is the field of language (from signal association to natural languages). The third step is the field of inference (from problem solvers to expert systems). The last step is the field of action (autonomous motion and robot control).

The first day constitutes a theoretical introduction to the field with full tutorial sessions. The second day is concerned with the applications of neural networks. The last day is devoted to physical implementations of neural nets.

#### **Invited speakers**

Presentations are given in French or English exclusively by invited speakers, top level scientists and managers from Europe and USA.

#### **Information, detailed programme and registration forms:**

Secrétariat des Journées d'Electronique  
DE – EPFL, ECUBLENS  
CH-1015 LAUSANNE (SWITZERLAND)

Tel: ++ 41.21.693.26.24  
Fax: ++ 41.21.693.46.60  
Telex: ++454.062 epfe ch

#### **Registration Fees:**

Before September 15th, 1989: normal fee	Frs. 300.–
special rate for EPF students and EPF members	Frs. 50.–
Extra charge for registration received after September 15th	Frs. 50.–



'89 Intensive Short Course organized by

Electronics Laboratory of the Swiss Federal Institute of  
Technology (EPFL), LAUSANNE, SWITZERLAND

## $\Sigma$ - $\Delta$ Modulators

June 26-29, 1989

### COURSE CONTENT & INSTRUCTORS

1. "Introduction to the Oversampling Method for A/D and D/A Conversion"  
**Dr J.C. CANDY** AT & T Bell Labs, HOLMDEL, N.J., U.S.A.
2. "Comparison of Oversampling Data Converters with Alternative Techniques"  
**Prof. G.C. TEMES** UCLA, LOS ANGELES, CA, U.S.A.
3. "Quantization Noise in  $\Sigma$ - $\Delta$  Data Converters"  
**Prof. R.M. GRAY** STANFORD UNIVERSITY, CA, U.S.A.
4. "Nonideal effects in  $\Sigma$ - $\Delta$  Data Converters"  
**Dr B. BOSER** AT & T Bell Labs, HOLMDEL, N.J., U.S.A.
5. "Higher-Order Oversampling Data Converters"  
**Prof. C.G. SODINI** MIT, MA, U.S.A.
6. "The Practical Realization of  $\Sigma$ - $\Delta$  Converters"  
**Dr R. KOCH** SIEMENS CORP., MUNCHEN, W. GERMANY
7. "CAD and Design of Digital Filters for  $\Sigma$ - $\Delta$  Systems"  
**Mr E. DIJKSTRA** CSEM SA, NEUCHATEL, SWITZERLAND

Deadline for registration : June 1st

Registration fee in Swiss Francs: 2'000.-

Mailing Address: Dr V. Valencic, EPFL-LEG, EL-ECUBLENS, 1015 LAUSANNE, SWITZERLAND

Phone: +41-21-693'39'72 Fax: +41-21-693'46'60

## United Kingdom and Republic of Ireland

By Mr. Mike Bennett (Secretary)  
CHAPTERS

### ASSP/COMM - Future Meetings.

- ICASSP: 23rd-26th May 1989 - Glasgow, Scotland
- Satellite TDMA Communication Technology: 25th May 1989 - London
- Spread Spectrum Communication in the Home: 14th June - London
- Spectral Estimation Workshop: 25-26th July 1989 - London
- Adaptive Filters Colloquium: 13th September 1989 (with CAS) - Edinburgh
- Cordless Telephones and Mobile Communication System Design: 25-26th September 1989 - London
- Discrete Mathematics for Signal Processing and Communication System Design: 4th October 1989 - London
- AGM and Evening Lecture: December 1989
- Error Control Coding for Communications: 2-day Workshop - 1990
- Fibre Optic Communication Systems: Evening Lecture - 1990

- Genetic Algorithms and Neural Networks: 2-day Workshop - April 1990

- Data Communications: 2-day Workshop - 1990

Chapter Chairman: Dr. Richard C. Green, Active Memory Technology Ltd., 65 Suttons Park Avenue, Reading Berkshire, RG6 1AZ. Tel: 0734 661122

### Magnetics

The Magnetics Chapter suffered a great blow with the tragic loss of its Chairman, Professor Peter Wohlfarth; his role has been taken over by Professor David Melville, who has recently been elected to ADCOM, the Central Committee of the Magnetics Society. Members of the UK Chapter are currently in the process of organising INTERMAG 1990, which will be held in Brighton. The Chapter is also co-sponsoring joint meetings with the Institute of Physics and the Institution of Electrical Engineers. The following is a list of future meetings:

- Modelling of Magnetic Characteristics for Field Computations: IEE/IEEE co-sponsored Meeting - 22nd May 1989
- Research in Magnetic Materials and their Applications: Salford - Date to be arranged
- Advances in Applied Magnetics: Lancaster Polytechnic - date to be arranged

Chapter Chairman: Professor David Melville, School of Physics and Astronomy, Lancashire Polytechnic, Preston, PR1 2TQ. Tel: 0772 22141

(Continued on page 8)





Intensive Summer Course  
on

# CMOS VLSI Design

ANALOG & DIGITAL

LAUSANNE, SWITZERLAND  
August 28 - September 15, 1989

organized by

Electronics Laboratory of the  
Swiss Federal Institute of Technology, Lausanne (EPFL)

3 one-week modules are proposed to the participants with the possibility of choosing any combination of the 3 modules. However, if PART II is chosen, it is strongly recommended to follow PART I as well. In addition to the lectures, a **hands-on training** will be provided to the participants in a modern **Computer Aided Instruction** laboratory.

**PART I INTRODUCTION TO CMOS INTEGRATED CIRCUIT DESIGN**  
(1st week: August 28 - September 1)

**PART II ADVANCED VLSI DESIGN AND ARCHITECTURE**  
(2nd week: September 4 - September 8)

**PART III ADVANCED ANALOG DESIGN**  
(3rd week: September 11 - September 15)

*Deadline for registration : **June 15th***

*Registration fees in Swiss Francs: 1 week; 2'500.-, 2 weeks; 3'500.-, 3 weeks; 4'500.-*

## INSTRUCTORS

F.ANCEAU, M.ANNARATONE, R.CASTELLO, P.DEBEFVE, M.J.DECLERCQ,  
M.R.G.DEGRAUWE, C.ENZ, K.ESHRAGHIAN, W.FICHTNER, B.HOCHET, S.M.KANG,  
F.KRUMMENACHER, J.C.MARTIN, A.O SSEIRAN, C.PIGUET, F.RAHALI, A.SANGIOVANNI-  
VINCENTELLI, W.M.C.SANSEN, G.C.TEMES, C. TRULLEMANS, V.VALENCIC, E.A.VITTOZ

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phone: + 41-21-693'39'72 fax: + 41-21-693'46'60



# Electrical & Electronics Engineers' calendar of Conferences & Exhibitions in Europe, the Middle East & Africa.

No. 16

Issued by the Institute of Electrical & Electronics Engineers Region 8 and printed in the Region 8 News, which is sent free of charge to all IEEE members in the Region. Dr. J. Baal-Schem, the Region 8 Conference Co-ordinator, is always interested in receiving information on future Conferences and Exhibitions being held in the Region. Information should be sent to him at the address given below.

May 1989

## May 1989

- 28-05:01-06. 16th Annual Symposium on Computer Architecture.  
Jerusalem, Israel.  
Contact: Secretariat, POB 3190, Tel-Aviv 61031, Israel.
- 29-31 3rd Workshop on Time-varying Image Processing and Moving Image Recognition  
Florence, Italy  
Contact: ENIC via S.Caterina d'Alessandria 12, 50129 Florence, Italy
- 29-05:02-06. 20th Symposium on Automotive Technology and Automation  
Florence, Italy  
Contact: ISATA Secretariat, 42 Lloyd Park Avenue, Croydon, CRO 5SB, England.
- 29-05:02-06. Ninth International Workshop on Expert Systems and their Applications.  
Avignon, France.  
Contact: EC2 - 269-287, rue de la Garenne, 92000 Nanterre, France
- 31-05:02-06. IPAT 89 - 7th Conference on Ion & Plasma Assisted Techniques  
Geneva, Switzerland.  
Contact: IPAT Secretariat c/o CEP, 26 Albany Street, Edinburgh EH1 3QH, UK.

## June 1989

- 21-23. 3rd Conference on Heat Transfer, Energy and Environment Applied to Communication and Computer Fields.  
Perros-Guirec, Tregastel, France.  
Contact: Mme Marie-France Piquet, CNET/LAB/IFE, BPO 40 22301 Lannion France.
- 23-23. Comsig 89 - Southern African Conference on Communications and Signal Processing  
Stellenbosch, South Africa.  
Contact: C.Pauw, Dept of Electronics & Computer Engineering, Univ. of Pretoria, 0002 Pretoria, South Africa.
- 26-29. Sigma-Delta Modulators - Intensive Short Course.  
Lausanne, Switzerland.  
Contact: Dr. V.Valencic, EPFL-LEG, El-Ecubens, 1015 Lausanne, Switzerland

## July 1989

- 03-06. Seventh Conference on Software Engineering for Telecommunication Switching Systems  
Bournemouth, England.  
Contact: IEE Conference Dept.

- 03-04. International Workshop on Microcomputer Control of Electric Drives.  
Trieste, Italy.  
Contact: Prof. Giuseppe S. Buja, Department of Electrical, Electronic and Computer Engineering, University of Trieste, via Valerio 10, 34127 Trieste, Italy.
- 11-14. Sixth Conference on Numerical Analysis of Semiconductor Devices & Integrated Circuits.  
Dublin, Republic of Ireland.  
Contact: Prof. J. Miller, Dept of Mathematics, Trinity College, Dublin 2, Republic of Ireland.
- 17-21. Third International Workshop on Computer-aided Software Engineering  
London, England  
Contact: Mr. John. O. Jenkins, Imperial College School of Management, London, England SW7 2PG
- 18-20. Third Conference on Image Processing and its Applications.  
Warwick, England.  
Contact: IEE Conference Dept.
- 25-26. Spectral Estimation Workshop.  
London, England.  
Contact: Mr. John Soraghan, Room 3.19d Signal Processing Division, Dept of Electronic Engineering, University of Strathclyde, Glasgow, Scotland, G11XW

## August 1989

- 13-19. Interdisciplinary Symposium on Symmetry of Structure.  
Budapest, Hungary  
Contact: Gyorgy Darvas, Inst. for Research Organiz. of the Hungarian Academy of Sciences, PO Box 4, Budapest, H-1361 Hungary.
- 16-18. VLSI 89 - International Conference on Very Large Scale Integration.  
Munich, West Germany.  
Contact: Conference Secretariat VLSI 89, Siemens AG, Otto-Hahn-Ring 6, 8000 Munchen 83, West Germany.
- 21-25. 10th International Conference on Noise in Physical Systems.  
Budapest, Hungary  
Contact: Oeif. A. Ambroz, Technical University, H-1521 Budapest, Hungary.
- 28-08:15-09 CMOS VLSI Design - Analogue & Digital  
Lausanne, Switzerland  
Contact: Dr. V.Valencic, EPFL-LEG, El-Ecublens, CH-1015 Lausanne, Switzerland

## September 1989

- 04-07. 19th European Microwave Conference.  
London, England.  
Contact: Microwave Exhibition Publishers, 90 Calverley Rd., Tunbridge Wells, Kent TN1 2UN, England.
- 05-07. Coding and Signal Processing  
Zurich, Switzerland.  
Contact: Advanced Technology Seminars, Ober Waidstrasse 17, CH-8037, Zurich, Switzerland
- 05-08. ECCTD 89 - European Conference on Circuit Theory & Design.  
Brighton, England.  
Contact: IEE Conference Dept.
- 07-10. Super Conductivity: Microjoule Applications - An Advanced Short Course  
Cambridge, England  
Contact: Dr. C.J.Padfield, University of Cambridge, Department of Engineering, Trumpington Street, Cambridge CB2 1PZ.
- 10-14. ECOC 89 - 15th European Conference on Optical Communication.  
Goteborg, Sweden.  
Contact: P. Andrekson, Dept of Elec. Meas., Chalmers Univ of Tech., S-41296, Goteborg, Sweden
- 11-13. Second International Conference on Holographic Systems, Components and Applications  
Bath, England.  
Contact: IEE Conference Dept.
- 12-14. Cryptography - Fundamentals and Applications.  
Zurich, Switzerland.  
Contact: Advanced Technology Seminars, Obere Waidstrasse 17, CH-8037, Zurich, Switzerland.
- 13-15. Fourth International Conference on Electrical Machines and Drives.  
London, England.  
Contact: IEE Conference Dept.
- 18-20. ISSE 89 - International Symposium on Signals, Systems and Electronics.  
Erlangen, West Germany.  
Contact: Ms U. Arnold, Lehrstuhl für Nachrichtentechnik, Universität Erlangen-Nurnberg, Cauerstr.7, D-8520. Erlangen, West Germany.
- 19-22. 16th International Conference on Computers in Cardiology.  
Jerusalem, Israel.  
Contact: Dr. Dan Adam, c/o Peltours Conventions, PO Box 394, Tel-Aviv 61003, Israel.

**IEEE Region 8 Conference Coordinator**  
**Dr. J. Baal-Schem, PO Box 1205**  
**Holon, 58112, Israel**



20-22. Symposium on Electromagnetic Fields in Electrical Engineering.  
Lodz; Poland.  
Contact: Prof. A. Krawczyk, Electrotech. Inst. Pozaryskiego 28, 04-703, Warsaw, Poland.

20-22. ESSCIRC 89 - 15th European Solid-state Circuits Conference.  
Vienna, Austria.  
ESSCIRC 89 - Interconvention, Am Hubertusdamm 6, A-1450 Vienna, Austria.

25-27. Conference on Main Line Railway Electrification  
York, England.  
Contact: IEE Conference Dept.

25-27. 1989 IFAC Workshop on System Structure and Control: State-space and Polynomial Methods.  
Prague, Czechoslovakia.  
Contact: IFAC Workshop, Inst. of Information Theory & Automation, 18208 Prague 8, Czechoslovakia.

#### October 1989

03-05. 1989 Carnhan Conference on Security Technology  
Zurich, Switzerland.  
Contact: Pieter de Bruyne, ETH Zentrum-IKT, CH8092, Zurich, Switzerland.

03-05. ITG Conference on Microelectronics for Information Technology.  
Stuttgart, West Germany.  
Contact: Dr. Ing. F. Coers, Stresemannallee 15, VDE Haus, D-6000 Frankfurt 70, West Germany.

03-08. ITU-COM 89, 1st World Electronic Media Symposium & Exhibition  
Geneva, Switzerland.  
Contact: ITU-COM Secretariat, Place des Nations, CH-1015, Geneva, Switzerland.

09-10. Conference on Electronic Packaging and Interconnections.  
Florence, Italy.  
Contact: Segreteria CCTE-Microelettronica, CC&F srl, via P. Maffi 5, 27100 Pavia, Italy.

09-11. 3rd European Conference on Power Electronics and Applications.  
Aachen, West Germany.  
Contact: Mr. Schatz, EPE 89 Secretariat, VDI/VDE - GMA, Postfach 1139, D-4000 Düsseldorf 1, West Germany

10-12. 1989 Journées d'Electronique on Artificial Neural Networks.  
Lausanne, Switzerland.  
Contact: Sec. Journées d'Electronique, EPFL-Ecublens CH-1015, Lausanne, Switzerland.

17-18. First IEE International Conference on Artificial Neural Networks.  
London, England.  
Contact: IEE Conference Dept.

#### November 1989

13-16. IFIP International Workshop on Applied Formal Methods for Correct VLSI Design  
Luven, Belgium  
Contact: Dr. Luc Claesen, IMEC vzw, Kapeldreef 75, B-3030 Luven, Belgium.

#### March 1990

07-09. 11th ITG/GI Conference on Architecture of Computing Systems  
Munich, West Germany.  
Contact: Dr. Ing F. Coers, Stresemannallee 15, VDU Haus, D-6000 Frankfurt 70, West Germany.

12-15. Design and Automation Conference.  
Glasgow, Scotland.  
Contact: European Design & Automation Secretariat, CEP Consultants Ltd., 26 Albany Street, Edinburgh EH1 3QH, Scotland.

#### April 1990

17-20. INTERMAG 90  
Brighton, England  
Contact: Courtesy Associates Inc., 655 15th Street, N.W. Suite 300, Washington D.C. 20005, U.S.A.

#### May 1990

07-09. CompEuro 90 - IEEE International Conference on Computer Systems and Software Engineering.  
Tel-Aviv, Israel.  
Contact: Conference Secretary, c/o ORTRA, PO Box 50432, Tel-Aviv 61500, Israel

13-17. First International Conference on the Application of Industrial Electronic Systems  
Jerusalem, Israel.  
Contact: Conference Secretary, c/o ORTRA, PO Box 50432, Tel-Aviv 61500, Israel.

#### June 1990

27-29. First International Conference on Expert Planning Systems.  
Brighton, England.  
Contact: IEE Conference Dept.

29-29. COMSIG 90 - Southern African Conference on Communications and Signal Processing  
Johannesburg, South Africa.  
Contact: C. Pauw, Dept of Electronics and Computer Engineering, University of Pretoria, 0002 Pretoria, South Africa.

#### July 1990

02-05. Bilkent International Conference on New Trends in Communication, Control & Signal Processing.  
Ankara, Turkey.  
Contact: Dr. Abdullah Atalar, Bilkent University, P.K.S., Maltepe, Ankara 06572, Turkey

#### September 1990

09-13. 12th IEEE International Semiconductor Laser Conference  
Davos, Switzerland  
Contact: Conference Secretary, Mrs. Glasl, IQE-HPT, Swiss Federal Institute of Technology, CH-8093, Zurich, Switzerland.

21-25. 1990 International Broadcasting Convention  
Brighton, England.  
Contact: B. Osborne, 2 Wimot Cottages, Park Road, Banstead, England SM7 3DH

#### May 1991

22-24. MELECON 91 - Mediterranean Electrotechnical Conference  
Ljubljana, Yugoslavia.  
Contact: Prof. B. Zajc, Fakulteta za Elektroteknika, Trzozke 25, 61000 Ljubljana, Yugoslavia

#### June 1991

20-22. Fourth International Conference on Television Measurements.  
Montreux, Switzerland.  
Contact: IEE Conference Dept.

**IEE Conference Department,  
Savoy Place, London, England, WC2R  
0BL**

### U.K.R.I.

(Continued from Page 6.)

#### Control Systems Chapter.

- Fermentation Control: 25th May 1989 - Liverpool Polytechnic
- Software Environments for Real-time Control (In the planning stage) - University of Bradford.
- Systolic Arrays - In association with the Computer Chapter.

*Chapter Chairman: Dr. R. Clarke, Central Electricity Generating Board, South West Region, Bedminster Down, Bridgewater Road, Bristol, BS13 8AW.*

#### Regional Activities Board Innovation Award

Dr. Brian Cory, of Imperial College London, and our immediate Past Secretary, was the recipient of this 1988 award; "For Creative Leadership in the planning and implementation of the UKRI Forum on Safety in Engineering Systems". Our congratulations to Dr. Cory on his organisation of a very successful and highly specialised meeting.

*Section Chairman: Mr. Roland J. Saam, 84 Lilley Road, London, England, SW6 1TN.*





ASSOCIATION DES INGENIEURS ELECTRICIENS SORTIS DE  
L'INSTITUT D'ELECTRICITE MONTEFIORE  
ASSOCIATION OF THE MONTEFIORE ELECTRICAL  
INSTITUTE ALUMNI

## GEORGE MONTEFIORE FOUNDATION

A prize, to be awarded every five years, will be bestowed through an international competition for the best original piece of research contributing to scientific advance and progress in electrical science and engineering.

Only recent papers, written or published during the five years preceding the deadline for receipt of papers, will be considered for the award. They must be written in English or French, and may not have more than two authors.

The different papers should be sent to the A.I.M. through an "introducer" who will enclose a list of three experts in the appropriate field of research.

Nine copies of each paper must be submitted, whether printed or typewritten. These should be sent, postage paid, to the Secretary of the Montefiore Foundation, Hôtel Montefiore, 31, rue Saint-Gilles, B-4000 Liège, Belgium.

The sum to be awarded amounts to **500.000 Belgian Francs**.

The deadline for receipt of papers by the board of Examiners is **February 1st, 1990**.

Every paper submitted should be clearly and prominently headed: "Travail soumis au concours de la Fondation George Montefiore, session 1990".

For any further information, please contact Mrs. Ch. LACROSSE, A.I.M. Secretariat, 31, rue Saint-Gilles, B-4000 Liège (Belgium).  
Tel. +32/41/22.29.46. - Fax +32/41/22.23.88 - Telex 41485 AIM B

## Yugoslavia

*By Professor Baldomir Zajc*

Preparation for MELECON '90 is our main task this year; forms of invitation are ready and will be distributed shortly. The principal topics for the Conference will be: electronics, computer techniques, control and robotics, telecommunications and education.

It is the intention of the conference to highlight technical subjects of particular interest to the electrical and electronics industrial research centres. It will provide a major international forum for the exchange of new experience and to develop Continuing Education.

Each participant will work in a highly specialised field of his own interest to affirm his work, attend invited and tutorial lectures of his choice and make contacts with other participants. Information can be obtained from: Melecon '91 Secretariat, F.E.R., Trzaska 25, 61000 Ljubljana. Tel: 3861 265 261. Tax: 3861 264990.

In addition to Melecon '91 the Section is also taking part in the organisation of three other meetings:

i) 3rd International MODULA 2, which deals with the theory of the Modular 2 language and its application in microcomputer systems. This will be held on 9-11th October 1989. The preceding meeting of this kind was in Augsburg, West Germany, last year. Please contact: Institut Jozef Stefan, Mr. M. Spegel, Jamova 39 61111 Ljubljana.

ii) XIII Symposium for Telecommunications, and

iii) SEMEC 89 - International Seminar on the application of micro-processors in measurement techniques. The theme this year is "Intelligent Measurement Systems".

The last two meetings will gather professional people at the time of the annual electronics exhibition, 3rd-4th October 1989 in Ljubljana. For information please contact EZS, Titova 50, 61000, Ljubljana.

*Section Chairman: Professor Baldomir Zajc, Fakulteta za Electrotehniko in Raiunalnistro, Trzaska 25, 61000 Ljubljana, Yugoslavia.*

## Disco '90 - Call for Papers

*International Symposium on*

### THE DESIGN AND IMPLEMENTATION OF SYMBOLIC COMPUTATION SYSTEMS

- Symbolic and Algebraic Computation
- Automated Reasoning
- Geometric Modelling and Computation
- Automatic Programming

**Papers are expected on the following topics**

#### Theory

- Specification and Verification Logics
- Abstract Data Types and Type inference
- Specification Languages
- Executable Specifications

#### Languages

- Language Design
- Language Constructs for Different Computing Paradigms (numeric, non-numeric, logic)
- Language Implementation
- Integration of Programming Paradigms

#### Architectures

- Parallel and Specialised Architectures
- Software/Hardware Interfaces

#### Software Environments

- System Design and Implementation
- Systems for Different Computing Paradigms (numeric, non-numeric, logic)
- Software Development Tools
- Visual and Graphic Tools
- User Interface

**This list of topics is not exhaustive; papers are encouraged on the design and development of significantly innovative running systems and on outstanding applications.**

**SUBMISSION OF PAPERS:** Four copies of a one-page abstract and of the full paper (in English and not exceeding 15 double-spaced pages) must be received by the Programme Committee Chairman by 10th October 1989.

**Deadlines:** Papers due 10th October 1989: Acceptance Notification 5th January 1990: Camera-ready copy due 1st March 1990

The Symposium is being organised by: Centro Interdipartimentale de Calcolo Scientifico, Università "La Sapienza", Roma; Dipartimento di Informatica e Sistemistica, Università "La Sapienza", Roma; Dipartimento di Matematica, Università di Milano; Istituto di Analisi dei Sistemi ed Informatica, CNR - Roma; Istituto di Analisi dei Sistemi ed Informatica, CNR - Roma; Istituto per la Matematica Applicata, CNR - Genova; Olivetti Systems & Networks, Ivrea; Scuola Superiore G. Reiss Romoli, L'Aquila.

With the Cooperation of: IEEE Central and South Italy Section, ACM, SIGSAM, SAME, ECCAI, EATCS, AICA, AIIA.

**Please address all correspondence to: Prof. Alfonso Miola, Conference Chairman, Dip di Informatica e Sistemistica, via Buonarroti, 12 - 00185 Roma, ITALY. Tel: (+39) 6 7312367/7312328/733412. Fax: (+39) 6 734616.**



## IEEE Awards to Region 8 Members 1970-1988

- 1970 Medal of Honor • Dennis Gabor  
 1970 International Communications • Herre Rinia  
 1971 Liebmann • Martin Ryle  
 1972 International Communications • John A. Greefkes  
 1973 Edison • B.D.H. Tellegen  
 1973 International Communications • V.A. Kotelnikov  
 1974 International Communications • Leslie H. Bedford  
 1976 Habirshaw • Francis J. Lane  
 1977 Liebmann • Horst H. Berger  
 1978 International Communications • F.L. Stumpers  
 1979 Bell Medal • A.C. Jacobaeus  
 1979 Brunetti • G.W.A. Dummer  
 1979 International Communications • A. Nyat Ince  
 1981 Sarnoff • Cyril Hilsum  
 1981 International Communications • Richard C. Kirby  
 1982 Control Systems • Howard M. Rosenbrock  
 1982 Leeds • Lothar Rohde  
 1982 Morton • D. Frohman-Bentchkowsky  
 1982 Phillips • Werner Kleen  
 1986 Haraden Pratt • Robert C. Winton  
 1986 Simon Ramo Medal • Arnaldo Marie Angelini  
 1986 Tesla • Eric R. Laithwaite  
 1987 W.R.G. Baker Prize Paper • James L. Massey  
 1988 Herman Halperin • Luigi Paris  
 1988 Browder J. Thompson Prize Paper • Lothar Thiele



Heinrich Hertz (1857-1894)



Hans-Georg Unger

During the 25th Anniversary Ceremonies in 1988, the following Awards were presented.

- To Prof. Dr. Eng. Hans-Georg Unger, the Heinrich Hertz Award.  
 To Dr. Jacob Baal-Schem, the Larry K. Wilson Transnational Award  
 To Joao Carlos Goncalves, The Larry K. Wilson Student Award  
 To Prof. Daniel M. van Dommelen, the Student Counselor Award  
 To Professor Dr. Berthold G. Busch, his Fellow Certificate  
 To Dr. Hugo Rüchardt; a certificate of Recognition.

### Prizes are also awarded to Non-members

- 1966 Lamme • Rene A. Baudry  
 1966 International Communications • E. Maurice Deloraine  
 1971 Education • Franz Ollendorff  
 1971 Habirshaw • Gunnar Jancke  
 1972 International Communications • Frank de Jager  
 1972 Zworkyn • Robin E. Davies  
 1974 International Communications • Leslie H. Bedford  
 1974 Sarnoff • Frederik L. Sangster  
 1980 Zworkyn • E.H. Walter Wirth  
 1983 Piore • Niklaus Wirth  
 1986 Baker Prize Paper • Adi Shamir

## President Elect - 1990

*Wallace S. Read*



Much of what we undertake in the IEEE is done very well but there is always room for improvement; I would pay particular attention to several frustrating annoyances which are of particular concern to Region 8: Late Delivery of Publications, Delays in Processing Member Applications, Slow Replies to Correspondence, and Difficulties in the Payment of Subscriptions. Perhaps there is no complete solution to all of these problems but we can do better.

I wish to see a strengthening of the cooperation between Chapters, Societies and Sections, with a view to improving the number and standard of technical meetings, and better communication between Chapters, Societies and Sections. We should also reappraise the services which Headquarters provides to members in all Regions.

For some 37 years I have been a member of the IEEE, with considerable experience on IEEE Committees, National & International Boards and in the management of large industrial companies. I look forward to serving you as President Elect for 1990.

## Nigeria

*By Dr. T.I. Raji*

The problem facing the Nigeria Section at the moment is how to retain existing members and recruit new ones. With average yearly earnings for Engineers being about N15000, and an exchange rate of N10 = \$1, the engineer earns the equivalent of \$1500 per annum, after tax. A member who joins one Society has to pay about \$83 p.a. and even when he takes advantage of the 50% rebate (\$42) the dues still represent about 3% of his yearly earnings, and about 8% for a new graduate.

Furthermore, most employers are not willing to contribute towards these dues and would rather encourage their employees to join the Nigerian Society of Engineers, which charges only \$7.5. For students the picture is even worse; the \$12 fee represents about 10% of the total educational allowance of an average student.

The Nigeria Section proposes to forward a special petition to the IEEE BoD to consider a further rebate for members who have such low earnings; in this way we may be able to retain and even increase our membership

*Section Chairman: Dr. T.I. Raji, Dept of Electrical & Electronic Eng,  
Obafemi Awolowo University, Ile-Ife, Nigeria*

## Poland

*By Prof. W. Seruga*

Thirty three technical meetings were organised, thirteen of them since the beginning of 1989.

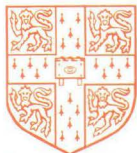
The Section was visited by Mr. Dick Portvliet and Student Branch problems were discussed.

We have a proposal for the foundation of a Circuits and Systems Chapter; this was sent to Mr. Lin, the President of the CAS Society

*Section Chairman: Prof. Wieslaw J. Seruga, Senatorska 20 M 23, 00095  
Warsaw, Poland*



## UNIVERSITY OF CAMBRIDGE



### Programme for Industry Super Conductivity: Microjoule Applications

An advanced industrial programme  
7-10th September 1989

This intensive short course is intended for senior engineers and scientists active in the fields of high-performance electronics, integrated circuit technology, device physics and materials science; and to managers needing to update their technical knowledge and assessment of the prospects for the technology of applied superconductivity. The course reviews high-temperature superconductivity both at a conceptual level and at the level of practical applications including device development, and also covering the most recent research results and findings. On this residential course, housed in Sidney Sussex College, one of the traditional older Colleges of the University of Cambridge, social aspects of the occasion will also be of major importance. Delegates and course lecturers will have the opportunity both during the formal sessions, and during the evening events and meals, to meet each other in an enjoyable atmosphere, to discuss current ideas and to debate the issues.

For full information please contact Ms Judith Parker, Board of Extramural Studies, Madingley Hall, Madingley, Cambridge CB3 8AQ, England. Tel: 44-954-210636, Fax: 44-954-210677



INDUSTRY APPLICATIONS SOCIETY



INDUSTRIAL ELECTRONICS SOCIETY



ISRAEL SECTION

## The First International Conference on Applications of Industrial Electronics Systems

Jerusalem, 13-17th May 1990

### CALL FOR PAPERS

#### Topics of Interest Include

- \* Applications in Agriculture, Irrigation and Water Supply
- \* Planning, Operation and Control of Energy Systems
- \* Industrial Applications of Programme Controllers
  - \* Computer Controlled Industrial Processes
- \* Applications in Automatic Manufacturing
  - \* Industrial Drive Applications

The Conference language will be English. Deadline for summaries: (5 copies on A4 - 600-1000 words) before 15th August

For full information please contact:

ORTRA 2, Kaufman St., PO Box 50432, Tel-Aviv 61 500, ISRAEL.  
Tel: (972) 3 664825, Fax: (972) 3 660952

## ACADEMIC POSITION OPEN

### Université Catholique de Louvain

The microelectronics laboratory in the Electrical Engineering Department has an opening for a full-time professor. Applications are invited. Applicants should have a distinguished research record and a strong commitment to teaching in the area of integrated systems (analogue and digital), and should have a PhD degree. The laboratory provides an excellent CAD environment and is well equipped with industrial design tools - a basic silicon fabrication facility also is available.

Applicants should have the ability to attract external funding and lead IC design work in fields such as: signal processing, telecommunications, robotics, medical electronics and instrumentation.

The New post will be open in the beginning of the 1989 autumn term. Applicants are invited to send a detailed résumé, including a list of references before May 29th to the Rector: Professor P. Macq, Place de l'Université 1, B-1384 Louvain-la-Neuve (Belgium).

## CODING AND SIGNAL PROCESSING

Course instructor:

RICHARD E. BLAHUT, Prof.Dr.  
IBM Corp., Owego, NY

September 5 - 7, 1989

Hotel International Zürich  
8050 Zürich, Switzerland

## CRYPTOGRAPHY

### Fundamentals and Applications

Course instructor:

JAMES L. MASSEY, Prof.Dr.  
ETH Zürich

September 12 - 14, 1989

Hotel International Zürich  
8050 Zürich, Switzerland

CALL OR WRITE FOR COMPLETE INFORMATION

TEL. 01/363 00 06 FAX 01/363 59 19

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CH-8037 Zürich  
Switzerland



**ECCTD  
89**

EUROPEAN CONFERENCE ON  
CIRCUIT THEORY AND DESIGN



University of Sussex, U.K.  
5-8 September 1989

Organised by the Institution of Electrical Engineers (IEE) in co-operation with the IEEE Circuits and Systems Society.

To be held on the delightful campus of the University of Sussex in the South Downs. It is near the famous attractive historical coastal resort town of Brighton which is readily accessible from Gatwick and London Heathrow airports. Inexpensive accommodation is available on campus.

The Conference has attracted significant research contributions from international authors on many aspects of electrical circuits. These range from classical circuit and system theory to neural networks and digital signal processing. Sessions will represent modern computer-aided and expert-systems techniques as well as current integrated-circuit influences.

On Tuesday 5th September, parallel tutorial sessions are arranged on Ga-As Circuits, Neural Networks, Digital Signal Processing and mixed analogue digital ASIC's. The programme also includes a reception, conference dinner and a visit to the Brighton Engineerium.

Programme and registration form available from:

Conference Services, IEEE, Savoy Place  
London WC2R 0BL, United Kingdom  
Tel: 01-240 1871 Ext. 289  
Telex: 261176 IEE LDN G Fax: 01-240 7735