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## HARMONICS IN POWER SYSTEMS

The Lecture/Symposium on Harmonics in Power Systems held at Clunies Ross House on the 20th March, 1984 was attended by over 130 engineers. This was the first of the special events for 1984 which are being jointly sponsored by IEEE, IEAust., IREE, and IEE. The attendance figure and the enthusiastic tone of the meeting augur well for future events of this type.

The meeting was chaired by Associate Professor Bill Bonwick of Monash University, who is also Chairman of IEE Victorian Organisation. The Speakers were Roger Merridew (ASEA), Dr. Tony Marxsen (SECV) and Dr. Theo Baitch (formerly Metropolitan Water Supply and Drainage Board, Sydney).

Although power system harmonics have long been recognised as a problem, it has in the past only affected a few isolated areas of particular systems. With the proliferation in recent years of solid-state power devices in industrial and consumer apparatus, the problem has become much more widespread. The undesirable effects encountered include telephone interference, disturbances to other power users, and system resonances. Voltage 'notching' such as caused by SCR converters is a particularly troublesome harmonic source.

Many attendees at this Symposium were surprised at the sophistication of the harmonic measurement techniques now being used by power authorities. This area was eloquently surveyed by Dr. Marxsen. Another point of interest, which arose from Mr. Baitch's presentation, is the scope of the recent Australian Standard (AS 2279) which specifies comprehensive design and performance characteristics for industrial equipment. The harmonic performance of this class of apparatus is not covered by ISO Standards.

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### 'FALL TIME'

Pilot entry in Maintenance Log: 'AUTOLAND' engaged. Aircraft landed very firmly to the left of centreline.

'Most unsatisfactory'

Maintenance Engineer's remarks: 'AUTOLAND' not fitted to this aircraft' (from Aviation Safety Digest)

.../2

## STUDENT AFFAIRS

Section Committee would like to see the formation of IEEE Student Chapters at all Tertiary Institutions in Victoria.

Committee recommends that wherever practicable Student Chapters should be affiliated with existing IEAust. Campus Chapters. This will help conserve organisational and financial resources, and will be consistent with the spirit of active co-operation which presently exists between IEEE and IEAust.

Enquiries relating to student membership and the formation of Student Chapters should be addressed to George Banky, Co-ordinator of Student Affairs, C/- Department of Electrical & Electronic Engineering, Swinburne Institute of Technology, P.O. Box 218, Hawthorn, Victoria, 3122 (Telephone: 819 8084). A list of contact persons at the various Institutions will be supplied on request.

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## COMMUNICATIONS CHAPTER NEAR

In the February Newsletter notice was given of a planned Communications Chapter. The required number of petitioners was subsequently obtained, and the Petition is now being processed by the IEEE Communications Society. Administrative approval is expected in the near future.

The new Chapter will serve the special interests of Telecommunications Engineers in Victoria. Operating under the general control of Section Committee, it forms a channel of direct liaison with the parent Society. This will be the first Chapter of any Society to be formed in Australia.

The convener is John Millott of Telecom Research Laboratories (Tel.: 541 6366) who is being assisted by Robin Court (Tel.: 541 6346) and Reg Coutts (Tel.: 541 6421). Enquiries and expressions of support are invited and should be directed to the aforementioned.

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## AWARDS AND PRIZES

The IEEE Centennial Medal has been awarded to the following Australian engineers: Mr. I.P. Bates (SECV), Prof. L.W. Davies (AWA), Dr. R.H. Frater (CSIRO), Prof. D.G. Lampard (Monash Univ.), Prof. H.K. Messerle (UNSW), Mr. P.I. Somlo (CSIRO), Mr. J.J. Vasseleu (Power Electronics), Sir William Tyree (formerly Tyree Industries).

The L.J. Clementson Memorial student prize of the Australian Section has been awarded to Mr. B.F. Alexander of Monash University.

COMING EVENTS

TUESDAY 17 APRIL - LECTURE 'RESEARCH INTO FUTURE SATELLITE COMMUNICATIONS SYSTEMS'

Speaker: Dr. Steve Seumahn, La Trobe University

Venue: Lecture Room E5, Electrical Engineering Department, Monash University, Wellington Road, Clayton, 3168.

Time: 6.30 p.m. (refreshments 6.00 p.m.)

Enquiries: Dr. Reg Coutts (Tel.: 541 6421)

15 - 17 MAY - VLSI-PARC (see enclosed brochure)

TUESDAY 22 MAY - LECTURE/SYMPOSIUM 'ASPECTS OF VLSI', CLUNIES ROSS HOUSE, 6.00 P.M. (refreshments 5.30 p.m.)

MONDAY 18 JUNE - SYMPOSIUM/WORKSHOP 'SELECTION OF COMPUTERS FOR ENGINEERING APPLICATIONS' (details to be announced)

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ROBOTICS CHAPTER PLANNED

The fast-developing field of Robotics is difficult to cater for in a traditional Learned Society setting because it involves so many of the established engineering disciplines, for example: mechanical, electrical power, control, computer systems, manufacturing, etc.

The Robotics field is of special significance in Australia, since many observers believe that our secondary industry may not survive unless we rapidly acquire and apply sufficient skills in this area.

Section Committee is very conscious of these problems, and plans to sponsor the formation of a Robotics Chapter as a means of focussing attention on robotics technology, and co-ordinating Learned Society activities in the field.

Anyone interested in helping to organise such a Chapter should contact Tony Gascoigne on 589 5472.

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IN BRIEF

\* A lecture on 'Biological Effects and Medical Applications of Electromagnetic Radiation' held at Monash University on February 24th attracted 40 engineers and students. The speakers were Dr. Maria Stuchly of the Department of Health and Welfare, Ottawa, Canada, and Dr. Stanislaw Stuchly of the University of Ottawa. The Stuchlys are presently on sabbatical leave at Monash. Following their presentation there was extended discussion lasting approximately 1 hour.

\* Japanese researchers are developing a Robot Cow. The self-propelled machine ranges over a field, seeking out the best pasture with the aid of an oxygen sniffer. The grass is cut, mulched and digested using a specially-developed biological process which simulates the natural digestive processes in a cow. The digester produces synthetic milk which is sent to an on-board storage tank, and a thick slurry which is periodically ejected from the machine. (From ABC Radio).

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Enquiries re advertising rates etc. to Tony Gascoigne on 589 5472.