

# A C I newsletter

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## A HISTORY OF CONTROL EDUCATION IN AUSTRALIA



*From left to right: Dr Kishor Dabke, Professor Pedro Albertos, the IFAC President, Professor Mike Brisk*

The National Committee for Automation, Control and Instrumentation initiated work on publishing a book on the history of control education in Australia. The initiative was financially supported by a grant from the Electrical College of the Institution of Engineers Australia which made preparation of the history book possible.

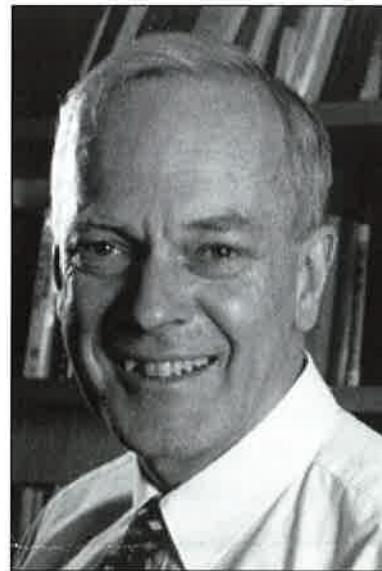
The Book is authored by Kishor P Dabke and Michael L Brisk of the Faculty of Engineering, Monash University. It reveals the period from 1948 to 1980, concentrating mainly on undergraduate education in control.

The 2000 IFAC Symposium on Control Education, held in Australia for the first time, in December 2000, was chosen as the most appropriate opportunity to launch the book and present our historical findings.

NCACI wishes to acknowledge the great effort by the book's authors and many others who provided help and information. We believe, the book will become a reference source in the literature and a part of the Australian control community's heritage.

*Copies of the book can be obtained from the IEAust Secretariat Ph: 02 6270 6599.*

## BRIAN ANDERSON TO RECEIVE THE IEEE EDUCATIONAL MEDAL



*Another extraordinary achievement by Professor Brian Anderson !*

Here, re-printed is the Media Release as prepared by the ANU Public Affairs.

"Professor Brian Anderson, from the Research School of Information Sciences will receive the prestigious Education Medal in the Institute of Electrical and Electronics Engineers (IEEE) 2001 international Honours Awards.

The medal is presented to the year's most inspiring educator for "outstanding graduate texts of lasting value and far-reaching

international influence, and for outstanding leadership in the development of electrical engineering education in Australia."

Professor Anderson's long list of academic and industry achievements began with undergraduate degrees in Mathematics and Electrical Engineering at Sydney University and a doctoral degree in Electrical Engineering at Stanford University in 1966. He worked in industry in the United States and at Stanford University before serving as Professor of Electrical Engineering at the University of Newcastle, Australia from 1967-81. In 1981 he became Professor and Head of the Department of Systems Engineering at the ANU, where he is now Director of the RSISE Research School of Information Sciences and Engineering. Along the way he has collected four more honorary degrees, and held many visiting appointments in the US, Europe and Asia, including the University of California, Berkeley, Stanford University and Swiss Federal Institute of Technology and Tokyo Institute of Technology.

Professor Anderson has served as a member of a number of government bodies, including the Australian Science and Technology Council and the Prime Minister's Science, Engineering and Innovations Council. He is also a member of the Board of Cochlear Limited, the world's major supplier of cochlear implants, and is the present President of Australian Academy of Science. Professor Anderson has written eight books and over 600 papers".

*Congratulations indeed Brian!*

## **AUTOMATION, CONTROL AND INSTRUMENTATION NATIONAL PROJECT EXCELLENCE AWARDS**

Michael Lucas, V-Chair of the NCACI presented the biennial IEAust Project Excellence Award in ACI (Automation Control and Instrumentation) at the *M.A. Sargent Award*

*Dinner* held in Sydney, 29 Jun 01. The Project Excellence Awards recognise outstanding applications of ACI, and the awards are designed to encourage the application of 'best practice' ACI techniques to achieve greater productivity, more efficient use of resources including energy, and reduced emissions.

The *Julius Kruttschnitt Mineral Research Centre*, at the University of Queensland, was awarded this year's prize for their work in designing, and developing, a state-of-the-art Conductor Non-Conductor (CNC) gauge for use in the automated separation of two of the major raw materials, rutile (conductive) and zircon (non-conductive), which are found together in typical titanium mineral sand deposits.

CNC gauges developed by the *Julius Kruttschnitt Mineral Research Centre*, are part of a program of scientific research and product development which was initiated in 1987 with the JKMRC/AMIRA P255 project. The CNC gauge replaces a manual product quality measurement process which did not provide timely feedback to the operator about important influences on the separation process, such as atmospheric disturbance. The CNC gauges which are now installed at Cable Sands Bunbury operation provide real time analysis of the titanium mineral streams, and have helped to more clearly see the effects of atmospheric disturbance, and feed composition variation on product separation quality, enabling timely manual plant adjustments.

The Committee notes with interest that this award is the first to be made for an outstanding development in the area of instrumentation and represents the culmination of a program of scientific research and development which the Australian mineral sands industry has supported and of which they should be proud. There is nothing quite like the CNC gauge. It has filled an instrumentation niche and may have significant worldwide application. Mineral sands plant operation was viewed as a "black art" prior to the commencement of the 1987 project and the CNC is a fundamental and significant step down the path of plant automation.

The *JKMRC* project joins those of the inaugural 1997 prizewinners PCT, Perth, for their work on Stage 1 of the ERA Ranger Uranium Mine plant upgrade, and BHP Engineering and BHP Coated Steel, jointly, for the Springhill Coil Packaging and Handling Project, Port Kembla, and the *CAMMS Automation and Electrical Services* project, a state-of-the-art winery control and automation system for BRL Hardy's \$18M premium winery, Stonehaven Vineyards, at Padthaway, South Australia, the largest single new winery to be built in Australia in the last twenty years.

The *JKMRC* project was a very encouraging continuation of a new award program sponsored by the NCACI.



*A plant operator at Iluka Resources demonstrates the 'flow through' feature of the CNC gauge in operation*

## REPORT ON ACE 2000, THE IFAC/IEEE SYMPOSIUM ON ADVANCES IN CONTROL EDUCATION

The Advances in Control Education conferences are held once every three years under the auspices of the International Federation of Automatic Control (IFAC). ACE 2000 received sponsorship from the Institute of Electrical and Electronic Engineers (IEEE) Control Systems Society, and the Institution of Engineers, Australia National Committee on Automation, Control and Instrumentation.

103 authors from 31 countries submitted complete manuscripts of their papers. Each received at least three reviews, overseen and coordinated by International Program Committee members. Twenty six members of the International Program Committee participated in the review process. All reviewers were anonymous. In many cases, after writing initial assessments, reviewers were put in touch with the Program Committee Co-Chairman to discuss a paper further by e-mail. Sixty five papers were accepted for full presentation. Only those actually presented at the conference are included in these proceedings.

The ACE 2000 Program featured:

- Three Plenary Sessions by leading academics and practitioners:
  - Professor Panos Antsaklis, University of Notre Dame, USA, 17 December 2000
  - Dr Sam Crisafulli, CICS Automation Pty Ltd Australia, 18 December 2000
  - Professor Fumio Harashima, Tokyo Metropolitan Institute of Technology, Japan, 19 December 2000
- Semi-Plenary Session on History of Control in Australia. This launched the outcomes of the project on "Control Education in Australia - Past and Present", which traces the early history of control teaching in Engineering Faculties in Australia, and reviewed the current state of the art. The Project is an initiative of the National Committee on

Automation, Control and Instrumentation of the Institution of Engineers Australia;

- Welcome Reception;
- ACE 2000 Dinner; and
- The ACE 2000 Related Events
  - The 2000 Annual Meeting of the Steering Committee of the Asian Control Professors Association (ACPA), held on 16 December.
  - The Undergraduate Thesis Prize in Automation, Control and Instrumentation, which was presented to the 1999 competition winner Ozan Perincek, for his project, *Automation of Hydroacoustic Transducer Calibration and Characterisation*. The Prize is sponsored annually by the National Committee on Automation, Control and Instrumentation (NCACI) of the Institution of Engineers Australia. It is aimed at recognising individual excellence achieved in undergraduate project work in the disciplines of automation, control and instrumentation.



*Presentation of the 1999 NCACI Undergraduate Thesis Award from left-to-right: NCACI Chairman, Dr Michael Evans, Award winner, Mr Ozan Perincek, and IFAC President, Professor Pedro Albertos*

ACE 2000 was chaired by:

- IPC Co-Chair, Professor Mike Brisk, Dean, Faculty of Engineering, Monash University, Melbourne;
- IPC Co-Chair, Associate Professor Ljubo Vlacic, Head of School, School of

Microelectronic Engineering, Griffith University, Brisbane; and

- NOC Chair, Dr Gordon Weiss, Energetics Pty Ltd, Sydney.

Copies of ACE 2000 Proceedings (ISBN 0 43245 X.), edited by Vlacic and Brisk, can be ordered from IFAC Publisher

Elsevier Science Ltd  
C/o IFAC Publications  
The Boulevard  
Langford Lane  
Kidlington, Oxford  
OX5 1GB, UK  
Fax: +44 (0) 1865 843920  
[www.elsevier.com/locate/ifac](http://www.elsevier.com/locate/ifac)

ACE 2003 will be held in Finland, June 16-18, 2003. For details, please visit [www.ntsat oulu.fi/ACE](http://www.ntsat oulu.fi/ACE)

## YEAR 2000 UNDERGRADUATE STUDENT PRIZE IN AUTOMATION CONTROL AND INSTRUMENTATION

The winner of last year's prize was presented to Shane Spiteri for his project *Universal Reefer Refrigeration Controller*. Shane was a student from the School of Communications and Informatics at Victoria University, studying for his Bachelor of Electrical and Electronic Engineering. His prize, which comprised of a medal, a cheque for \$1000, and an IEAust Certificate was presented by NCACI Deputy Chair, Michael Lucas, at the Electrical College Board MA Sargeant Dinner, in Sydney on the 29 June 2001.

A Certificate of Commendation was also awarded to Peter Rose from Murdoch University for his project *Heat Interchange Controller Design*.

## **CONTROL RELATED EVENTS IN AUSTRALIA IN 2000**

**Australian Conference on Robotics and Automation (ACRA 2001),**  
Sydney, November 14th-15th, 2001.

(<http://www.acfr.usyd.edu.au/ACRA2001/call-for-papers.html>)

Authors from academia and industry are invited to submit either a full paper, or a poster, for review. Both full papers and posters will be peer reviewed and, if accepted, will be published in the Proceedings.

Full papers may describe new theoretical or new applied research in the robotics field. This year, papers describing commercialisation of robotics technology by academia and industry are particularly encouraged. The organisers would also like to encourage proposals for papers that provide a "state of the field" review.

Posters are intended to encourage authors (both students and researchers) to present work which is better viewed in a less formal, interactive setting than a presentation. Poster subjects may include simulations of new concepts, demonstration of hardware, or work that may be at an early stage, but would still benefit from being shared with others in the robotics community.

To obtain further details please contact Prof. Hugh Durrant-Whyte, The University of Sydney, via [hugh@acfr.usyd.edu.au](mailto:hugh@acfr.usyd.edu.au)

**Information, Decision and Control**  
Adelaide, Australia, 11 - 13 February 2002  
(<http://idc.cssip.edu.au/2002/index.html>)

IDC 2002 will bring together scientists, engineers and mathematicians working across the disciplines of signal processing and communications, decision and control, and data and information fusion. Progress in these disciplines is critical to the successful implementation of large interconnected and distributed systems such as military C4I systems, communication networks, distributed sensor networks, large scale distributed control systems, and multi-platform autonomous vehicle applications. In particular, IDC 2002

will attempt to highlight interfacing issues between fundamental technology and algorithms (low level) and applications (high level) aspects of system design.

IDC 2002 is structured along the lines of similar multi-conferences held over recent years around the world. It is planned to provide technically strong symposia for each of the core disciplines with significant opportunity for overlap and interaction between the various groups.

The IDC 2002 Organising Committee invites researchers and practitioners in academia, industry and government to submit papers for one or more of the symposia of IDC 2002 as detailed overleaf. All submitted papers are peer reviewed on their originality, relevance, significance and clarity. The accepted papers will be invited for presentation at oral/poster sessions and published in the IDC 2002 Proceedings.

Information about IDC 2002 is also available on the IDC 2002 world wide web site [IDC.cssip.edu.au](http://IDC.cssip.edu.au), or by contacting the IDC 2002 Secretariat electronically at [plevin@camtech.net.au](mailto:plevin@camtech.net.au) or in writing at IDC 2002, Plevin & Associates, PO Box 54 Burnside, SA 5066 Australia.

### **ICAIS 2002 - First International ICSC Congress on Autonomous Intelligent Systems**

Deakin University,  
Waterfront Campus  
Geelong, Australia  
12 - 15 February 2002

[www.icsc-naiso.org/conferences/icais2002](http://www.icsc-naiso.org/conferences/icais2002)

Autonomous intelligent systems area is a very fast growing research area attracting the attention of many researchers around the globe. The aim of the International Congress on Autonomous Intelligent Systems (ICAIS) is to bring the researchers, system developers and users both from industry and academia together to exchange their views and receive the very latest information on the on-going research and development. This will be carried out through a series of keynote addresses, technical sessions, workshops and exhibitions.

## ACPA HELD ITS 2000 ANNUAL MEETING IN AUSTRALIA



*ACPA Meeting participants.*

The 2000 annual meeting of the Steering Committee of the Asian Control Professors Association (ACPA) was held in December 2000, in conjunction with the 2000 IFAC/IEEE Symposium on Advances in Control Education. The meeting was hosted by the Australian representative, Associate Professor Ljubo Vlacic, Head of Griffith University's School of Microelectronic Engineering.

### EDITORS' POST-SCRIPT

- **Discussion Forum:** Letters to the editors in response to any article in the newsletter will have the responses published in subsequent editions.
- **News of interest** to the Australian community of control engineers are most welcome.
- **A special issue** of the newsletter may also be worthwhile. Please submit a proposal.
- **Contributions** will be reviewed against the Mission Statement of the Committee when editing received material. The editors reserve the right to make changes.
- **Your calls** are always welcome.
- **The Editors:** Dr Ljubo Vlacic (ph: 07 3875 5024; email: L.Vlacic@me.gu.edu.au) and Mrs Julie Armstrong (ph: 02 6270 6599; email: jarmstrong@ieaust.org.au).

The NCACI Newsletter is published twice per year, usually in April and November.