



# Newsletter

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## From the Director

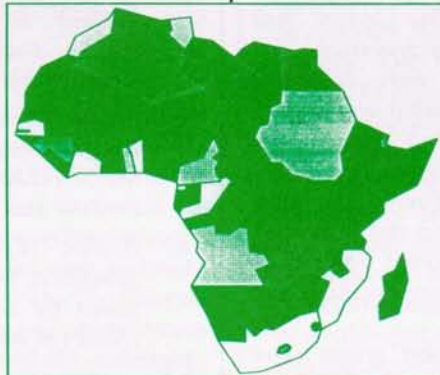
Much has changed in the Australian academy since the publication of the last issue of the USICEE Newsletter in March 1996. Their success in the March federal election gave the Liberal-National Party coalition a strong mandate for carrying out policies to restructure the Australian economy, and in a consequence to change the entire social infrastructure. After 13 years of Labor government, that resulted in an enormous national debt, the Australian population was eager to pass the management of the country on to other hands and hence was willing to make some sacrifices in order to improve the balance of payments. The new government, however, has taken its mission so seriously that several sectors of the community are going to pay much too heavy a price. The hardest hit by the new budget are obviously the assistance programs for Aborigines, national education and foreign assistance programs.

The USICEE's level of activities depends very much on support grants, and these will now be very difficult to obtain. One of the USICEE's immediate losses in this area followed from the recent decision of the coalition government to axe the Australian Program of Training for Eurasia (APTEA), which apparently was Australia's only program aimed at assisting new democracies in Central and Eastern Europe in their struggle to restructure their education systems. It has always been our conviction that a Liberal government would commit its support to democratic movements and democratic ideas, especially where such support is of tremendous importance.

The APTEA Head of Mission Fund (HOM) enabled the USICEE, during the past two years, to pursue two inexpensive and highly successful projects, involving 11 countries in Central and Eastern Europe. The objective of these two projects has been to transfer information on engineering education from Australia, thereby assisting academics at technical universities in their endeavours to restructure and improve their engineering education. Over 700 individual academics particularly involved in

engineering education were identified and received our publications. Also, over 70 libraries in those countries received books, conference proceedings, journals and other printed materials published by the USICEE, thereby establishing much needed collections on engineering education. It was also envisaged that the projects would assist these countries in their efforts to develop market-based economies by means of the promotion of specialist skills which, in turn, would foster business contacts between developed countries and countries in the region.

As far as future activities of the USICEE are concerned, the important goal for the period 1997/98 is to place emphasis on the development of human resources in science, technology and engineering education in Africa. A comprehensive plan of action has been set up to pursue this objective. Some of the activities envisaged under this plan have been in place for some time already (see the item *Initiatives for Africa* in this issue).



## AEE News

The Association is gearing up for another successful *Annual Convention and Conference*, this year the 8th – to be held at the University of New South Wales (15–18 December) under the theme *Keeping Pace with Social and Technical Change*. The Centre had an excellent response to the call for papers for the Conference: over 150 abstracts were submitted, and of these 15 were authored by international engineers representing such countries as the Czech Republic, Hong Kong, Macedonia, Malaysia, Nigeria, New Zealand, Romania, the United Kingdom and the United States. Well over 200 indications of interest were received. The Conference Proceedings are currently in preparation for publication, and will be available for purchase from the USICEE in December.

The first issue of volume 7 of the *Australasian Journal of Engineering Education* is now in circulation both in hard copy and electronic versions. Readers will no doubt by now be aware that the *AJEE* is the world's first and only engineering education journal having its entire text available through the Internet. The Centre is at

present exploring ways in which to improve both the presentation of, and the scope of information included in, the electronic version. Both issues of volume 6 and the first issue of volume 7 can be accessed at the USICEE Home Page address.

## East-West Congress

The 3rd East-West Congress on Engineering Education was held in Gdynia, Poland, between 15 and 20 September 1996, and was attended by over 170 delegates from academic institutions of 33 countries. The Australians formed the second largest national group; Poland, the host country, sent the largest delegation of any country. The Congress was included in the official program of celebrations of the 70th anniversary of the foundation of the city of Gdynia.

Two major addresses were presented at the Congress Opening Ceremony. Professor Adnan Badran, Deputy Director-General of UNESCO, spoke of *Current Developments in Engineering Education at UNESCO and Their Relevance to the Situation in Central and Eastern Europe*. The second address was delivered by Professor Michael L. Brisk, Dean of the Faculty of Engineering at Monash University. Professor Brisk offered his insights on *Engineering Education for 2010: The Crystal Ball Seen from Down Under (An Australian Perspective)*.

In addition, 14 keynote addresses were delivered during the course of the Congress, expanded versions of which will be published in a forthcoming issue of the *Australasian Journal of Engineering Education*. Over 100 regular paper presentations were delivered, covering almost all aspects of engineering education and industrial training. These are included in a hardbound volume of Congress Proceedings, copies of which are available for purchase from the USICEE.

The Congress received several support grants. The most significant of these included a grant from the APTEA Head of Mission Fund, through the generosity of His Excellency M. Jonathan Thwaites, Australian Ambassador to Poland, the Czech Republic and Slovakia, and an Australian Counterpart Fund grant administered jointly by the Australian Embassy in Warsaw and the Council of Ministers of the Republic of Poland through the Directorate of Education, Science, Environment and Social Programmes.

The USICEE was fortunate in being able to attract funding in order to facilitate the attendance at this year's Congress of about 80 engineering academics from Central and Eastern European countries. In view of the important role played by the USICEE's government-funded projects in stimulating international awareness of the importance of engineering education, the federal government's decision to terminate APTEA beyond this year comes as a great disappointment. The USICEE Chairman, Professor Peter Darvall, has written to the Prime Minister, asking him to reconsider the demise of APTEA.

Dr Badran generously made available a UNESCO grant enabling the attendance at the Congress of academics from developing countries. The Congress organisers express their appreciation to the granting bodies for their support and encouragement.

## USICEE Paper Awards

For the first time the USICEE has presented awards in celebration of academic excellence. These were presented recently at the 3rd East-West Congress on Engineering Education to the authors of the papers included in the volume of *Congress Proceedings* that were considered, by popular vote of the Congress participants, to offer the most significant contribution to the field of engineering education. The five award categories were Diamond, Platinum, Gold, Silver and Bronze, and were presented to the following outstanding authors:

- Diamond - *Woman in engineering in the age of information technology* by Prof. Y. Guran (USA).
- Platinum - *Issues related to the use of peer assessment in engineering courses using a problem-based learning approach* by Mr I.D. Thomas, Mr R.G. Hadgraft & Mr P.S. Daly (Aust.).
- Gold - *Building creative, people-oriented departments* by Mr R.G. Hadgraft (Aust.).
- Silver - *A hypertext-based interactive teaching system for designing integrated circuits with VHDL* by Mr J. Frickel, Mr U. Heinkel, Mr M. Padeffke & Prof. W.H. Glauert (Germany).
- Bronze - *A comparison of the problems facing higher education in the United Kingdom, Ukraine and Australia* by Mr T.G. Oliver (UK), Mr K. Travers (Aust.) & Prof. A.A. Minayev (Ukraine).

## News from Donetsk

As part of the 75th anniversary celebrations of the Donetsk State Technical University the USICEE, in conjunction with the Technical University itself, organised an International Seminar on Engineering Education between 31 May and 3 June 1996. The encouraging attendance of academic representatives from many nations helped to ensure that this was a most successful initiative in engineering education, and offers further demonstration of the high importance that the Technical University attaches to this discipline. The USICEE Director, last year appointed Honorary Dean of the Donetsk English Engineering Faculty, chaired the seminar and delivered three papers during its course. He also assisted in the drafting of a 'Final Document', in which a number of important issues were identified. These included a proposal for the establishment of a UNESCO Supported Centre for Engineering Education based at the Donetsk State Technical University and a proposal for the development of a special program

coordinated by the Technical University and involving a variety of funds, associations and centres that would assist in facilitating educational processes within the international community. The Final Document also confirmed the readiness of Donetsk State Technical University to develop a specialist course in mechatronics. Additionally, the Final Document declared 'the establishment of the International Engineering Faculties with foreign languages of instruction at the Donetsk State Technical University to be well-timed and extremely important for the development of engineering education'.

## Director's Doctorate h.c.

**A**ssociate Professor Zenon J. Pudlowski, Director of the USICEE, was recently awarded an honorary doctorate from the Donetsk State Technical University (DSTU), and is one of only 11 international figures to have been awarded this distinction by the DSTU. The presentation of the award formed part of the May celebrations of the 75th anniversary of this famous Ukrainian technical university. The doctorate was awarded in recognition of Professor Pudlowski's academic achievements in general, and more particularly of his outstanding contributions to research and development in engineering education both in Australia and abroad.

## UNESCO Grant to USICEE

**U**NESCO has granted a sum of \$US 37,700 to the USICEE in order to assist the Centre in its preparation and conduct of international courses and workshops relating to issues of engineering and technology education in the biennium of 1996/97. Courses and workshops on computer technology and international engineering education have been successfully undertaken in the past, and it is expected that similar programs will be forthcoming.

## Initiatives for Africa

**I**n accordance with UNESCO's resolve to place increasing emphasis on the development of human, technology and infrastructure resources in African countries, the USICEE, under the general direction of UNESCO, has begun work on a number of important initiatives for Africa. An *Australian-Nigerian Library on Engineering Education* has been established at Lagos State University, and the USICEE has donated books, conference proceedings, journals and other material to this library. The USICEE Director has contacted a significant group of African engineering academics, and arrangements are well in place for the establishment of an *Association for Engineering Education in Africa (AEEA)*. It is expected that the USICEE will assist in the publication and distribution of the *AEEA Newsletter*, at least in its early stages.

The USICEE intends to coordinate the transfer of engineering education publications to as many African academic libraries as possible, and will also establish a Pan-African Conference on Engineering Education to be held at the University of Cape Town, South Africa, in February 1998. This Conference will offer important input into the development of the AEEA.

The Director is confident that the USICEE's African initiatives will prove to be as successful as those undertaken over the last two years for universities in Central and Eastern Europe.

## UNESCO Committee

**O**n 3 June 1996 Dr Federico Mayor, Director General of UNESCO, drafted a memorandum in which he advised that the General Conference and Executive Board had requested that he ensure the involvement of UNESCO in essential long-term activities relating to the strengthening of engineering education in member states. In addition, it was requested that special emphasis be placed on the needs of developing countries. Accordingly, Dr Mayor has decided to establish a UNESCO International Committee on Engineering Education (ICEE) whose function will be to advise him on relevant issues involved in these areas of UNESCO activity. The International Committee will replace the UNESCO Steering Committee on Technical Human Resources Development, and is comprised of a number of distinguished engineering academics, including the USICEE Director. Dr Mayor has established the following priority areas for the ICEE: investigation into the educational applications of technological developments such as the Internet, distance learning and electronic publishing, and the tendering of advice on issues relating to the recognition and equivalence of engineering degrees and the accreditation of engineering programs.

## USICEE Collaborators

**T**he Director is pleased to announce that a further two European engineering faculties have entered into formal collaborative agreements with the USICEE, thus bringing to 14 the number of international institutions that have made such an arrangement with the Centre. The Fachhochschule für Technik und Wirtschaft, Berlin, in the Federal Republic of Germany, and the Technical University 'Gh. Asachi' of Iasi, Romania, have signed Memoranda of Understanding that will provide a basis for long-standing and fruitful cooperation between the institutions involved and the USICEE. Professor Rainer Knigge, President of the Fachhochschule für Technik und Wirtschaft, has indicated to the Director his hope that such cooperation with the USICEE will lead eventually to the establishment of a Centre for Engineering Education in Berlin. The USICEE looks forward to assisting in the fruition of this exciting proposal.

## Open Universities

Work has been undertaken for the establishment of open universities in Poland and the Ukraine, with the Australian inputs coming from the USICEE, Open Learning Australia and other associated educational institutions, under the overall leadership of Monash University. It is anticipated that joint commercial ventures of this kind will create a vehicle for the transfer of Australian expertise in higher education to Central and Eastern European countries. These countries are in the transition period from a socialist to an open market economy, and are currently modernising their educational systems. Such activities constitute an extension of the USICEE's productive involvement in the educational culture of Central and Eastern Europe.

## APHEN-EE

The Centre is continuing to expand its database of contacts for the Asia-Pacific Higher Education Network (APHEN-EE), and is looking forward eagerly to the *1st Asia-Pacific Forum on Engineering and Technology Education* to be staged between 6 and 9 July 1997 at Monash University, under the Honorary Chairmanship of Professor Michael L. Brisk, Dean of the Monash Faculty of Engineering. To date over 40 proposals for the Forum have been received. Interested parties may request from the Centre a copy of the call for papers, which was circulated earlier this year, and may join the APHEN-EE database through the USICEE electronic mailing lists. Proposals for contributions to the Forum should be received by the USICEE by the end of 1996. The *Asia-Pacific Forum* will be one of a series of important regional gatherings of engineering and technology educators that will take place in 1997 and culminate in the *Global Congress on Engineering Education* to be held in September 1998 in Cracow, Poland.

## Global Congress

The next couple of years will witness some exciting developments in international engineering education. The USICEE is planning a *Global Congress on Engineering Education* to be staged in Cracow, Poland, in September 1998. This Congress will incorporate three other major international gatherings: the 4th East-West Congress on Engineering Education, the 5th World Conference on Engineering Education and the 1998 International Congress of Engineering Deans and Industry Leaders. The Director has invited several leading international organisations involved in engineering and technology education to become Global Congress co-sponsors.

A number of regional conferences on engineering and technology education will be organised as a forerunner to the Global Congress. This series of conferences will seek

to build up linkages among international engineering educators, to address prevailing problems and issues falling within the compass of engineering and technology education and, more broadly, to raise the profile of engineering and technology education in individual regions. Emphasis in these initiatives will be placed on Africa, Central and South America, the Arab world, the Asia-Pacific and the countries of the former socialist block.

## USICEE Publications

The following publications are available on request from the Centre:

*Proceedings of the 1995 International Congress of Engineering Deans and Industry Leaders*, edited by Zenon J. Pudlowski and Peter LeP. Darvall. The primary objective of the Congress was to provide an international forum for continued dialogue on adapting engineering education and research to the needs of less developed countries. Cost of volume: \$A100.

*Proceedings of the 7th Annual Convention and Conference of the Australasian Association for Engineering Education*, edited by Mohammad Aldeen and Zenon J. Pudlowski. Conducting its deliberations under the theme 'Internationalisation of Engineering Education', the 7th annual AAEE Convention and Conference addressed some of the major challenges confronting engineering educators in an age of educational globalisation. Cost of volume: \$A100.

*Proceedings of the 3rd East-West Congress on Engineering Education*, edited by Zenon J. Pudlowski. The Congress brought together engineering educators from East and West in order to continue the dialogue about common international problems in engineering education in an age of rapidly changing technology, and about the restructuring of academia in the context of the new economic conditions prevailing in countries of the former socialist block. Cost of volume: \$A100.

*Computers in Electrical Engineering Education – Research, Development and Application*, edited by Zenon J. Pudlowski *et al.* This monograph presents recent achievements in developmental research on the application of computers and computer technology to engineering education. Cost of volume: \$A50.

*The Application of Computer-Assisted Training Programs in Engineering Education*, edited by Zenon J. Pudlowski and Roger G. Hadgraft. Originating from a USICEE training course for academic teachers from the Asia-Pacific, this monograph will be of value to anyone interested in the most recent innovations in computer-aided teaching and learning, including the Internet and Electronic Library. Cost of volume: \$A70.

**Note:** In order to obtain copies of any of these volumes please draw a cheque in favour of Monash University – USICEE, adding to the cost of each volume ordered \$A10 for postage within Australia and \$A20 for overseas postage, and send to USICEE at the address listed at the foot of this page.