



UNESCO International Centre for Engineering Education



Newsletter

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From the Director

On 24 March 2001, my wife Dorota and I will be celebrating the 20th anniversary of our arrival in Australia. This special occasion, spanning the two decades of our life and work in this *land of strangers*, provides me with the opportunity to reflect on many things that I, in my active life, rarely have time to do. The obvious observation is that the last twenty or so years have changed Australia and its community enormously, so that a remote island of the descendants of those early colonists has become a vibrant, cosmopolitan and multicultural society.

Australia is no longer isolated and is no longer a bastion of one ethnic group or one people. It has accepted the globalisation process as its own, and as a small nation has already contributed significantly to building a new and better world for peace, stability and development.

I am grateful to the then Australian Government of Mr Malcolm Fraser and the Australian people for the fact that I was able to find a rescue in this land when political storms had blown me away from my beloved Poland. However, I wish to point out the fact that I have earned my Australian citizenship by working extremely hard, being committed and paying high taxes. In my commitment to Australia, I have always endeavoured to contribute, as much as I could, to the advancement of Australia, and to the development of its intellectual and economic potential.

I am thankful to Australia for I have been able to realise so many of my dreams as an academic, a human being and a global citizen. These have all been possible because of the strong Australian democratic system, the existing human and material resources, the kindness of its people

and the opportunities that one can still find in this country. In building a *global village*, we should not forget that Australia is one of the greatest countries in the world, which, in no doubt, may be called a *country of opportunity*, or for some even a *lucky country*. Despite the semantics, we should all embrace, treasure and strongly protect it.

UICEE Annual Conference

The extremely successful 4th UICEE Annual Conference on Engineering Education was held at the Menam Riverside Hotel, Bangkok, Thailand, from 7 to 10 February 2001. The Conference was staged in collaboration with four of the UICEE's Contributing members in

Thailand, namely: King Mongkut's University of Technology in Thonburi, Kasetsart University in Bangkok, Khon Kaen University in Khon Kaen, and Thammasat University in Prathutani.

Conference delegates gathered in Bangkok to discuss issues of importance to engineering education, the activities of the UICEE and the satellite centres, and indeed the main theme of the Conference, which was *Innovation in Engineering Education*.

The Conference had a rich formal academic programme as well as exciting social and accompanying persons programmes. Close to 150 persons registered in the programme, including almost 30 partners. The friendly atmosphere and the variety of cultural backgrounds of the participants, representing nearly 30 countries worldwide, created a pleasant and efficient environment for paper presentations, discussions and the formulation of future activities.

A volume of Conference Proceedings was produced that



The photo shows Prof. Michael L. Brisk, Dean of the Faculty of Engineering at Monash University, delivering his Opening Welcome at the 4th UICEE Annual Conference on Engineering Education.

UICEE Partners



includes papers presenting a multitude of innovative approaches to engineering education and specific activities which are demonstrated in the four opening addresses, 12 keynote addresses, 16 lead papers and over 60 regular papers.

Several papers discussed research and development activities in the host country, which has several high-class universities topping the list of best universities in Asia.

There are still a few copies of the Proceedings left, which may be purchased from the Centre.

Badge of Honour Awards

Four international academics received the Silver Badge of Honour Awards on the occasion of the 4th UICEE Annual Conference, which was held at the Menam Riverside Hotel in Bangkok, Thailand. The UICEE's Silver Badge of Honour is awarded for *distinguished contributions to engineering education, outstanding achievements in the globalisation of engineering education through the activities of the Centre, and, in particular, for remarkable service to the UICEE.*

Three recipients were awarded at the Conference Banquet, namely: Prof. Frank Bullen from the University of Tasmania in Hobart, Australia; Prof. Yildirim Uctug from the Middle East Technical University in Ankara, Turkey; and Prof. H. Öner Yurtseven from the Indiana University-Purdue University Indianapolis in Indianapolis, the United States of America. Prof. Uwe Nissen from the Technical University of Denmark in Copenhagen, Denmark, received his Award the previous day.

Staff, students and associates of the UICEE congratulate the awardees on the occasion of receiving this prestigious UICEE award.

Best Paper Awards

Participants at the 4th UICEE Annual Conference on *Engineering Education* again selected papers, which had been included in the volume of Conference Proceedings, for the UICEE Best Paper Awards. These awards include five categories: Diamond, Platinum, Gold, Silver and Bronze. Due to the high quality of the papers presented, the results from the voting proved very close, with seven papers sharing the five awards.

The Diamond award went to H.Ö. Yurtseven of the Indiana University-Purdue University Indianapolis in

Indianapolis, the United States of America, for his keynote address on how the image of engineering affects student recruitment and retention.

Platinum awards were bestowed upon two papers: M.S. Zwyno and W.K. Waalen from Ryerson Polytechnic University in Toronto, Canada, for their keynote address on individual learning styles in technology-enabled education; and L.N. Green (from the University of New South Wales in Sydney, Australia) and E. Bonollo (from the University of Canberra in Canberra, Australia) for their paper concerning understanding design methodology.

With two equal second Platinum awards, there was no Gold award given, and four papers received equal next highest frequency of selection and were awarded equal Silver awards. These Silver award papers were accorded to: C. Hacker and R. Sitte from Griffith University on the Gold Coast, Australia, for their paper on computer-based inter-



The photo shows (l-r) Prof. Y. Uctug of the Middle East Technical University receiving his Silver Badge of Honour from Prof. P.LeP. Darvall and Prof. Z.J. Pudlowski of the UICEE.

active teaching software; S. Kolari (from Tampere Polytechnic in Tampere, Finland) and C. Savander-Ranne (from Helsinki Polytechnic in Helsinki, Finland) for their paper covering pedagogical training for engineering educators; K.J. McDermott, Ö. Göl and A. Nafalski from the University of South Australia in Adelaide, Australia for their paper tackling experience-based learning; and K. Schilling, H. Roth and O. Rösch from Fachhochschule Ravensburg-Weingarten - University of Applied Sciences in Wein-

garten, Germany, for their paper looking at mobile mini-robots and their use in engineering education.

The selection process was not easy as the Proceedings included many excellent papers. Expanded versions of these award papers will be published in one of the upcoming issues of the *Global Journal of Engineering Education* in the near future.

South Asia Centre Launch

The UICEE Director, Prof. Zenon J. Pudlowski, visited Anna University, Chennai (Madras), India, between 8 and 11 January 2001 to discuss collaborative ventures between the UICEE and Anna University. These have been planned under the Partnership Agreement signed in mid-2000.

On 10 January 2001, an official launch of the South Asia Centre for Engineering Education (SACEE) was conducted with the presence of the University management, deans of faculties, directors of institutes and centres, as well as the

local press. The SACEE is the next in the family of satellite centres being established under the auspices of the UICEE, and is under the Directorship of Prof. Adinarayana Kalanidhi, the Vice-Chancellor of Anna University. Prof. Vaithilingam Guruswamy has been appointed Honorary Director and Dr Swaminathan Ramakrishnan is Coordinator of the Centre.

It is envisaged that this Centre will provide a focus for academic and research activities related to the work on teaching methodologies in developing countries. In particular, special efforts will be directed towards developing teaching methodologies for education in the establishment of small to medium sized enterprises that are so vital for economies in developing countries.

The picture shows the UICEE Director lighting the lamp as a metaphor in commemorating the inauguration of the work of the Centre, assisted by Prof. A. Kalanidhi. The UICEE Director is adorned with the symbols of honour for the University, presented to him on this occasion, which are important to Indian academic culture.

India Update

In order to focus on the research and development in the area of engineering education, Anna University in Chennai, India, has recruited the first batch of 100 young and bright Teaching Research Associates (TRA) across all engineering disciplines. Within three to four years, it is envisaged that they will be well-trained in teaching and research activities to garner a PhD. This novel scheme has been introduced only in Anna University under the leadership of the SACEE Director, Prof. A. Kalanidhi, the vibrant and visionary Vice-Chancellor of the University. There are ten positions available for international scholars to do their PhD at Anna University.

Anna University will host the 5th UICEE Annual Conference on Engineering Education in February 2002.

Furthermore, Anna University has undertaken efforts for academic cooperation with Hochschule Wismar - University of Technology, Business and Design in Germany; the Hong Kong Polytechnic University in Hong Kong; the Technical University of Czestochowa in Poland; and Fachhochschule Weingarten - University of Applied Sciences in Germany.

Following a Memorandum of Understanding signed with the Tomsk Polytechnic University (TPU) in Tomsk, Russia, two Faculty members from the TPU will visit Anna University in September/October 2001 and deliver guest lectures to senior students. These visitors will be Prof. Galina V. Kashkan and Prof. Nadyeshdu V. Sepaylova.

Partnership with Tomsk

Just before Christmas 2000, Prof. Yuri P. Pokholkov, Rector of the Tomsk Polytechnic University (TPU) in Tomsk, Russia, and the UICEE Director signed a Memorandum of Understanding on partnership between the two organisations, effective from 1 January 2001. This new partnership brings the total number of UICEE Partners to seven and it strengthens significantly the so-called *UICEE Global Family of Engineering Educators*.

Under the agreement, the TPU, as one of the prime Russian academic institutions, has set up a Central Asia Centre for Engineering Education (CACEE) as a satellite centre of the UICEE. The Centre will provide a focus for academic and research activities related to the work on the transfer of new technologies to other countries, and to developing countries in particular. The marked effort of the Centre will be to develop human resources for academic research on a worldwide basis, especially for new and emerging technologies.

Prof. Alexander I. Chuchalin, First Vice-Rector of the TPU, has been appointed the Foundation Director of the CACEE, with Sergey Mogilnitsky as the Deputy Director. There will be several CACEE Coordinators in the following areas: Prof. Oleg Boev (international educational programmes); A/Prof. Olga Masourina (international programmes and funds); A/Prof. Inna Cheremisina (professional language training programmes); and A/Prof. Viktor Pushnykh (engineering education). The secretary is Margaret Vorobieva.



The photo shows (l-r) the UICEE Director and Prof. A. Kalanidhi at the official launch of the South Asia Centre for Engineering Education.

Urban Design Update

Urban design is at times in conflict with engineering practice. The UICEE's Urban Design Education Programme (UDEP) has helped to address these issues through the international exchange of ideas and professionals as one of its key objectives. This supports and informs public and professional debate on the urban design of cities and provides examples of best international practice in this field. Furthermore, the UDEP's Visiting Fellows Programme contributes directly to this benchmarking process.

Prof. William Alsop of the UK, who has previously been active in other international innovative projects such as the Rotterdam transport hub, was an ideal candidate given that his expertise in the integration of urban design and infrastructure planning is of particular relevance to Victoria.

The Fellowship Programme covered three days in late November 2000 and included an executive seminar on *Infrastructure in the Making of Cities*. There was also a public lecture held, titled *Whose Work is it Anyway?*, which was attended by over 400 architects, planners and developers.

The major activity was a design studio that explored ideas for the redevelopment of Richmond train station, which spans a major intersection near the Central Business District in Melbourne, Australia. This attracted significant media attention and contributed to public education and discussion. It also encouraged the linking of stakeholders in the place management process, such as engineers, town planners, architects and councillors.

Frege Centre in Wismar

We are delighted to announce that the UICEE network of satellite centres will be further strengthened with a new satellite centre based at the Hochschule Wismar – University of Technology, Business and Design in Wismar, Germany. The Frege Centre was introduced by the co-directors, Prof. Dieter Schott and Prof. Norbert Grünwald, at the 4th UICEE Annual Conference, held in Bangkok, Thailand, from 7-10 February 2001.

The Frege Centre, founded in November 2000 by a group of 12 professors engaged in basic engineering education, fights for strengthening, updating and raising basic science education to an advanced international level in tertiary education.

Hochschule Wismar officially upgraded to UICEE Partner status in January 2001. The Frege Centre will bring its specific orientation into the UICEE network of engineering educators.

German Masters Course

One of the UICEE's Supporter members, Fachhochschule Mannheim - University of Applied Sciences Mannheim in Mannheim, Germany, is set to start offering a 1½-year international Masters in Chemical Engineering course. This course is expected to begin in autumn 2001 and is designed for chemical engineers, mechanical engineers and natural scientists who seek to expand their skills and job opportunities with organisations that operate on a multinational basis.

The curriculum structure will include lectures, project teamwork and the Masters thesis, which will have to be done in close contact with German industry. The curriculum contains essential project-oriented teaching and learning methods from the METEOR Centre, based at Fachhochschule Mannheim. This has already been presented at various UICEE Conferences and in UICEE publications.

Some lectures are to be held in German. Due to the close industrial contact, a good knowledge of the German language is required.

Further information is available on the Web at: www.chem-eng.fh-mannheim.de or by contact by e-mail: chem.eng@fh-mannheim.de

Meeting of UICEE Partners

The 3rd UICEE Partners Meeting was held in Bangkok, Thailand, in conjunction with the 4th UICEE Annual Conference on the Tuesday immediately prior to the Conference. Issues of major importance and concern were raised and discussed during the meeting. UICEE Partners presented their activities and achievements accomplished in the period since the last meeting at the 2nd Global Congress on Engineering Education in Wismar, Germany in July last year.

The meeting helped to establish several new collaborative initiatives and projects, and was followed by the UICEE Partners dinner. It has been decided that the next meeting of UICEE Partners will be held in association with the 3rd Asia-Pacific Forum on Engineering and Technology Education to be held in Changhua, Taiwan, in July 2001. At the Partners' request, there will be another meeting at the 5th Baltic Seminar on Engineering Education in September as well.



The Annual Conference in Bangkok provided participants with the opportunity for some relaxation and enjoyment. The picture shows (l-r) Dr S.P. Maj (Aus); Dr R. Ostragonac-Seserko (Aus); Ms C. Savander-Ranne (Fin) and Mr S. Kolari (Fin) chatting on board the riverboat excursion.

Visit to Taiwan

The UICEE Director paid a brief visit between 26 February and 2 March 2001 to the National Changhua University of Education (NCUE) in Changhua, Taiwan, in order to discuss and finalise the preparations for the 3rd Asia-Pacific Forum on Engineering Education. The Director was received by the University President, Prof. Tze-Li Kang, who was briefed by the Director on recent developments at the UICEE. They also discussed the *modus operandi* of the 3rd Asia-Pacific Forum, which will be part

of the celebrations of the 30th anniversary of the establishment of the NCUE.

Further, the Director presented a lecture to the staff and postgraduate students of the School of Industrial Education on issues of importance to engineering and technology education, as well as the role and activities of the UICEE.

The Director also visited the Chinese Culture University in Taipei, a Sponsor member of the UICEE, where he was invited to a 39th anniversary gala dinner of the University as a guest of Prof. Fong-Ming Lee, Dean of the School of Engineering there. The Director also visited the Faculty and its facilities, including the Digital Earth Research Centre, and discussed potential future collaborations. He also had the opportunity to see the University's museum and art gallery, which had several Chinese cultural artefacts that dated back to the early Centuries AD.

Graduate Courses

A meeting of developers of the Graduate Courses in Engineering Education was held in conjunction with the 4th UICEE Annual Conference in Bangkok, with several developers attending. Unfortunately, not all the developers were able to attend the meeting, and therefore several subjects have not been looked at and discussed.

This meeting has evolved from the meeting held in conjunction with the 2nd Global Congress held in Wismar, Germany. Two or three subjects have demonstrated progress, particularly with the GCEE07 - *Educational Technology & Computers in Engineering Education*, by the Ryerson Centre for Engineering Education. This subject is at the forefront of the whole development with the target of making it available on the Web by October 2001.

The next progress meeting has been scheduled to be organised with the 3rd Asia-Pacific Forum.

Membership Growth

Many institutions see the operations of the UICEE and its activities as an opportunity for realising their objectives in technology and engineering education. Hence, UICEE membership has continued to climb, particularly with regard to institutional membership.

It is feasible that the number of Partners itself will grow to ten this year, with the likelihood of establishing several new satellite centres on engineering education in different regions of the world.

RAEE's Awards

Chairman of the UICEE Academic Advisory Committee, Prof. Peter LePoer Darvall, and the UICEE Director, Prof. Zenon J. Pudlowski, each received the Gold Medal of Honour from the Russian

Association of Engineering Education (RAEE) for distinguished contributions to engineering education through the activities of the UNESCO International Centre for Engineering Education, persistent and tireless initiative and efforts in creating of a new engineering environment of the 21st century and especially for remarkable dedication to the cause of engineering education.

The awards took place at the Closing Ceremony of the 4th UICEE Annual Conference on Engineering Education on Saturday 10 March 2001 and were presented by Prof. Alexei Nesterov, Director General of the Russian Association for Engineering Education (RAEE). The awardees have developed a friendly working relationship with the RAEE since 1993 when they were both leading the Australasian Association for Engineering Education (AAEE).

UICEE Conferences in 2002

It has been decided that Anna University, in Chennai (Madras), India, will host the 5th UICEE Annual Conference on Engineering Education, between 6 and 9 February, 2002. The theme of the Conference will be *Student-centred Engineering Education*. Prof. A. Kalanidhi, Vice-Chancellor of Anna University, will be Conference Patron.

It is envisaged that this next Annual Conference will be held in a hotel, given the success of this year's Annual Conference in Bangkok. However, there will still be ample opportunities for Conference participants to visit various academic units within Anna University during the course of the Conference. It is envisioned that apart from the academic programme, the Conference will have rich social and accompanying persons programmes.

The Conference theme came out during the discussions at the recent UICEE Partners meeting, held in Bangkok, and was chosen in order to address critical and fundamental issues related to the education of students, that is the prime activity of any university. It is hoped that the Conference theme will identify and discuss best projects, programmes and examples concerning this matter.

It is also envisioned that apart from the annual meeting of the UICEE, a meeting of UICEE Partners will take place in concurrence with this Conference.

3rd Asia-Pacific Forum

Preparations are underway with the 3rd Asia-Pacific Forum on Engineering and Technology Education, to be held in collaboration with the National Changhua University of Education in Changhua, Taiwan, between 8 to 11 July 2001. Paper proposals have been received from all corners of the world and papers are coming in.

UICEE members and those who have strong interests in engineering and technology education should consider attending the Forum. Particular emphasis is placed on the participation of people from the Pacific Rim and all parts of the Asia-Pacific area.

Baltic Region Seminar

Following the success of previous seminars held annually in that region, a 5th *Baltic Region Seminar on Engineering Education* will be held at the Gdynia Maritime Academy in Gdynia, Poland, from 17 to 19 September 2001. The objective of the Seminar is to bring together educators from the Baltic region to continue dialogue on problems in engineering education, and to foster the cooperation and friendships already established. Several associated events are envisaged to coincide with the Seminar.

The Seminar announcement can be found on the UICEE's homepage, under *Conferences and Meetings*.

Russian Proceedings

The volume of Proceedings from the 1st *Russian Seminar on Engineering Education* was officially launched at the Opening Ceremony of the 4th *UICEE Annual Conference on Engineering Education* by the UICEE Director and Prof. Yuri P. Pokholkov, Rector of the Tomsk Polytechnic University (TPU) in Tomsk, Russia, and President of the Russian Association for Engineering Education (RAEE). Prof. Pokholkov also received copies of the Proceedings to distribute to his colleagues in order to promote engineering education and the Seminar series in particular.

Held in conjunction with the 100th Anniversary celebrations of the Tomsk Polytechnic University, its theme centred on Siberian engineering education, but also included Russian and international issues. The volume commemorating this momentous event collects two opening addresses and 20 regular papers presented at this inaugural Seminar and is available from the UICEE. Further details on the book can be found on the UICEE's website under *Publications*.

Student from India

Joining us from the Walchand College of Engineering in Sangli, India, is Mr Arun Patil, who seeks to achieve his PhD here in Australia. Mr Patil has contributed numerous papers to UICEE-run conferences and seminars over the past few years.

His prime field of interest lies in curriculum design and he will be researching the design of multimedia-based learning tools for basic electrical engineering. He is in Australia as a recipient of a UICEE Scholarship in Engineering Education.

Occupational Trainee

Ms Stephanie Grünwald, a student from the Department of Business at the University of Rostock in Rostock, Germany, joined the UICEE as an occupational trainee in mid-March. Her

prime area of study here is in looking at the double degree programmes available in Australia in engineering and business administration/commerce.

Ms Grünwald takes over from the previous occupational trainee, Ms Ulrike Schimmel, who has completed six months of research and study with the UICEE's Urban Design Education Programme (UDEP).

2000 Annual Report

The UICEE's 2000 Annual Report provides comprehensive information on the diverse and extensive activities that were carried out by the UICEE over the past year. Readers will be

able to see that 2000 was a year of progress, continued evolution and growth for the Centre. It is available on the UICEE's website, under *Reports*.



The photo shows Prof. Yuri P. Pokholkov, Rector of the Tomsk Polytechnic University, launching the Proceedings of the 1st *Russian Seminar on Engineering Education*, published by the UICEE.