International Network for Engineering Education and Research
(iNEER)
General Secretariat

iNEER REPORT FOR 2005

General Secretariat

iNEER
e-mail: ineer@ineer.org
http://www.ineer.org

July 1, 2006

A. Introduction

In 2005, iNEER made significant progress in all aspect of its activites. Big strides were made in networking and information disseimnation. Represetnatives of iNEER made outreach visits to universities in Myanmar, Korea, and Portugal. Two conferences were held successfully: iCEER-2005 and ICEE-2005. For the first time, two editions of the Special Volume were published.

All these activities led to a significant increase in the global membership roster, which reached 25,904 on December 22, 2005.

The iNEER Secretariat continued to operate be in good fanancial health.

B. iCEER-2005: Taipei/Tainan, Taiwan, March 1-5, 2005

Held under the leadership of Prof. Shan-Hwei and Prof. J.J. Miau, the International Conference on Engineereing Education and Research was convened during February 28 – March 5, 2005 on the island of Taiwan, R.O.C. The pre-conference workshop was held in Taipei, while technical sessions took place on the campus of National Cheng Kung University.

The workshop was organized by the Institute of Engineering Education Taiwan (IEET) under the leadership of Dr. Che-Ho Wei, Chairman of the National Science Council of Taiwan during 2001-2004 and currently Professor of Electrical Engineering at National Chiao Tung University, Hsinchu, Taiwan. The Secretary-General of iNEER presented an invited talk concerning the impact of workforce trends on international cooperation in engineering education and research. Other speakers include: Dr. Alex Chan, Immediate Past President of Hong Kong Institution of Engineers (HKIE) on the HKIE accreditation system; Dr. Andrew M. Wo, Director of International Affairs of IEET on accreditation of engineering programs in Taiwan; Prof. Hu Hanrahan of the University of Witwatersrand, South Africa on quality in engineering education, focusing on the interplay of standards, accreditation, curriculum and assessment.

The theme of the workshop concerned improving engineering education through partnership, especially through cooperation and mutual recognition of accredited engineering programs. Chan, Wo and Hanrahan represent countries that are signatories to the Washington Accord. This is an international agreement between bodies responsible for accrediting professional engineering degree programs in various countries. The agreement recognizes the substantial equivalency of accredited programs as having met the academic requirements for entry to the practice of engineering.

The Accord was established in 1989 by 6 signatories: Australia, Canada, Ireland, New Zealand, UK, and USA. Subsequently, Hong and South Africa joined. In 2001, Japan became the first country to join as the first non-English speaking signatory on a provisional basis. Countries that joined as provisional signatories in 2003 were Germany, Malaysia, and Singapore. Membership in the Washington Accord is expected to be further enlarged later this year, as more countries or economies (such as Taiwan) become provisional signatories.



(2005-02-27_067R) (2005-02-27_058R) (2005-02-27_121R)

C. Joint iNEER Board-ISC meeting, Tainan, Taiwan, March 1, 2005

This meeting was held from 7 – 11 PM on March 1 and was co-chaired by Prof. Tomas Cermak (right photo below, 2nd from right), Chair of the iNEER Board and Rector of VSB – Technical University of Ostrava, Czech Republic, Prof. S.H. Ou (right photo below, 1st from right), General Chair of iCEER-2005 and Vice President of National Cheng Kung University, Tainan, Taiwan, and myself.

The purpose of the meeting was to review recent developments in global engineering education. ISC members provided updates on activities and plans to increase the quality of engineering education, and students' experience, through international cooperation. During the meeting, the iNEER Board gave final approval for 2 of 7 formal proposals, under review by iNEER since June 2004, for future conferences. As a result, members of the iNEER Network will meet in Portugal in 2007 for ICEE-2007: Coimbra, and in Hungary in 2008 for ICEE-2008: Budapest-Pecs.

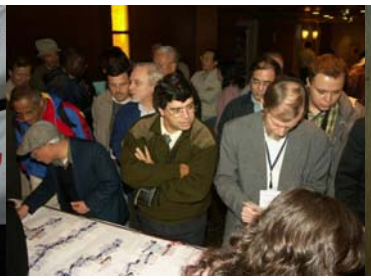


(2005-02-27_108R) (2005-02-27_145R) (2005-02-27_158R)

D. iCEER-2005, Tainan, Taiwan, March 2-5, 2005

This conference was hosted by National Cheng Kung University (NCKU) under the leadership of Prof. Shan-Hwei Ou, Vice President and Dr. Jiun-Jih Miau, Professor of Aeronautics and Astronautics. About 200 attendees from 27 countries participated. Included in the registration package was a copy of the 2005 iNEER Special Volume: *Innovations 2005 – World Innovations in Engineering Education and Research*, edited by Win Aung, Robin King, Jerzy Moscinski, Shan-Hwei Ou, and Luis Manuel Sanchez Ruiz (see: http://www.ineer.org/iNEERPapers/Welcome.htm).

(2005-03-04_080R)


(PICT0240R)

(2005-02-27_008R)

The 4-day conference featured 7 keynote speakers and 10 invited lecturers. There were 125 contributed papers, and 40 poster papers. Topics covered include the following: Assessment of Curriculum Design and Student Learning; Combination of Classroom and Distance Education; e-Learning for Engineering Education and Research; International Engineering Education Accreditation; Language and Communication in Engineering Education; Engineering Education in Nanotechnology; Online Laboratory Computing and Infrastructure Technologies; Education in Opto-Mechatronics and System on Chip; Wireless and Mobile Technologies in Engineering Education; Biotechnology; International Cooperation and Exchange Programs; and Problem-Based Learning.

Specifically, the Organizing Committee issued the following Calls for Papers:

Call #1: Workshop on ABET Accreditation (M. Ilyas/ S. Hsu)
Call #2: Assessment in Engineering Education (J. Muffo/ V.K. Lohani)
Call #3: Assessment of Curriculum Design and Student Learning (J.T. Teng)
Call #4: Combination of Classroom and Distance Education (A. Babich/ H. Saliah-Hassane/ K.D. Taylor)
Call # 5: Education of Disaster Prevention and Hazard Mitigation (W.L. Chiang)
Call #6: e-Learningfor Engineering Education and Research (P.T. Yu/K.J. Chen)
Call #7: Collaboration between Engineering and Education Faculties (V.K. Lohani/J. Muffo)
Call #8: Collaboration between Industry and technical and Vocation Higher Education (K.Y. Li/J.L. Huang)
Call #9: International Engineering Education Accreditation (Y.B. Yang/P.F. Chang)
Call #10: Language and Communication in Engineering Education (H.L. Jian)
Call #11: Nanotechnology (C.K. Lee)
Call #12: Online Laboratory Computing and Infrastructure Technologies (H. Salish-Hassane/ M. Saad)
Call #13: Opto-Mechatronics (R.C. Luo/ F.T. Cheng)
Call #14: System on Chip (J.Y. Jou/ J.D. Huang)
Call #15: Telecommunication (H.J. Li/D. B. Lin)
Call #16: Wireless and Mobile Technologies in Engineering Education (F.E. Sandnes)
Call #17: Biotechnology
Call #18: Government Policy Issues
Call #19: Information Technology
Call #20: International Cooperation and Exchange Programs
Call #21: New Development in Engineering Education
Call #22: Problem-Based Learning

Call #23: Other Topics

Present at the opening ceremony and delivering welcoming remarks were: Professor Tomas Cermak, Chair of the iNEER Board and Rector of VSB-Technical University of Ostrava, Czech Republic; Dr. Lu Mu-Lin, Vice Minister of Education, Republic of China (ROC) on Taiwan; Dr. Chun-Chen Liao, Deputy Minister, National Science Council, ROC; Professor Chiang Kao, President NCKU, and Professor Shan-Hwei Ou, Vice President, NCKU; Professor Juh-Wah Chen, Dean Emeritus, Southern Illinois University; and Dr. Win Aung, Secretary-General, iNEER.


(2005-03-04_85R)


(2005-03-02_031R)


(2005-03-03_004R)

Professor David Chang, President, Polytechnic Institute of New York was a keynote speaker (center picture above, 1st from right). Professor Yury Chebotarevsky, Rector, Saratov State Technical University, Saratov, Russia (standing in the middle in center photo above) was an invited speaker. Among the many participants from overseas was Lt. Col. Chris J. Putko, of the U.S. Military Academy at West Point, New York, who is pictured in the photo on the right above in a light-hearted moment.


(2005-03-02_017R)


(2005-03-02_025R)


(2005-03-03_008R)

The mayor of Tainan and the Tainan City Council Chairman welcomed and greeted attendees with a reception and a memorable musical evening at Tainan City Hall. Participants also attended the Tainan Lantern Festival (photo below, right) on the outskirts of Tainan.

(2005-03-02_070R)

(2005-03-02_063R)


(2005-03-02_084R)

In addition to lab tours, a technical tour was organized for participants to the Southern Taiwan Science Park. At the award ceremony held following the cultural performance (2nd for conference participants) at the conference banquet, Prof. Che-Ho Wei (Taiwan) was presented with the Leadership Award, and Prof. Hamadou Saliah-Hassane (Canada) the Achievement Award.


(2005-03-03_049R)


(2005-03-03_063R)


(2005-03-03_056R)

On the last day of the conference, the authors of 4 contributed papers were presented with Best Paper Awards, one of the award recipients being Professor Taylor Martin of the University of Texas, Austin, TX (seen in the center photo below with presenter Dr. Vojislav Ilic of the University of Western Sydney, Sydney, Australia). Some of the participants also paid a courtesy visit to Professor Chiang Kao (seated in the middle facing camera, right photo below), President of National Cheng Kung University.


(PICT1021R)


(2005-03-04_115R)


(2005-03-04_044R)

E. 3rd International Conference on Computer Applications (ICCA), Yangon, Myanmar, March 9-10, 2005


(2005-03-10_003)


(2005-03-10_015)

The iNEER Secretary-General attended this conference during his visit to Yangon, Myanmar after the conclusion of iCEER-2005. The host of ICCA was Prof. Dr. Pyke Tin, Rector of the University of Computer Studies, Rangoon (aka Yangon) Campus, Burma (aka Myanmar). About 350 academics were present. About 20 of them were from overseas.

Papers were presented in regular session format as well as in poster sessions. Sessions topics were of contemporary interest, such as: parallel and distributed computed computing; network and computational analysis; web engineering; image processing; software engineering; computational biology and bioinformatics.

The University of Computer Studies has two campuses. The one in Yangon has about 4,000 students. About 65% of the students are female. The Pro-Rector, Prof. Dr. Ni Lar Thein, is also female. Also present at the conference was U Soe Myint, Pro-Rector of the University of Computer Studies, Mandalay Campus.

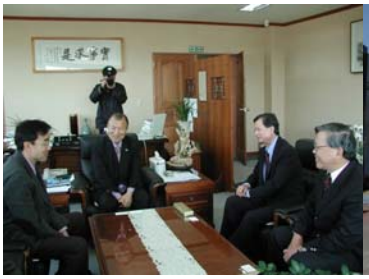
The success of the University to attract a large percentage of its students from the female population appears to be unique in the international community. Indeed, it appeared that the majority of the attendees of the conference were women (see left photo above).

F. Korea University of Technology and Education (KUT) in Chonan; KOSEF (Korea Science and Engineering Foundation) and Hanyang University in Seoul, South Korea, March 13-17, 2005

KUT was established by the Korean government in 1992 as the Korean Institute of Technology and Education. It was renamed Korean University of Technology and Education in 1995. International cooperation has been an emphasis at the university since its inception. In 1999, it was designated

Its undergraduate division comprises 6 schools (Mechanical Engineering; Mechatronics Engineering; Information Technology Engineering; Internet-Media Engineering; Industrial Management; and Liberal Arts and Education) and 5 departments (Control System Engineering;

On March 10, 2005 an iNEER delegation paid a courtesy visit to KUT. The delegation included Dr. Che-Ho Wei, Past Chairman of the National Science Council of Taiwan (seated on right in left photo below) and Dr. Win Aung, Secretary-General of iNEER. The visitors met with Dr. Hyung-Nam Moon, the current president of the university (seated 2nd from left in left photo below), and with reseatchers at HRDI (Human Resource Development Institute; photo below, center photo) and the nearby Independence Hall (photo on right, below).


(2005-03-14_010R)


(2005-03-14_043R)


(2005-03-14_077R)

Through HRDI, KUT provides vocational training for domestic as well as international managers and engineers, and is supported by the Ministry of Labor. At the time of our visit, a group of 20 Egyptian engineering personnel (some pictured in photo below, left) were undergoing a 3-month, resident training program at HRDI.

The hosts provided a demonstration of web-based courses developed at HRDI jointly by in-house web-developers and KUT faculty. These web-based courses were credited with significantly improving student retention and graduation rates. To help motivate student learning, the courses rely heavily on case studies and problem-based learning. Up-to-date pedagogical approaches are also employed, such as e-notebook, online simulations, and web-based assessment.

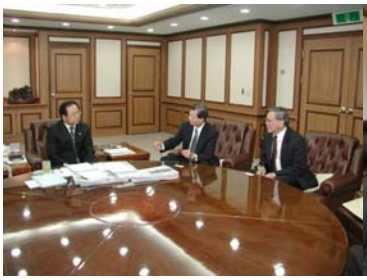
The visitors also briefly attended lectures in progress at SETEC (Semiconductor Equipment Technology Education Center; photo below, center). SETEC, under the direction of Prof. Kwang-Sun Kim (seated left in left picture above; standing 1st left in left photo below) is supported by major Korean semiconductor companies (Samsung Electronics; LG Semicon; Hyundai Electronics; and Anam Semicon).


(2005-03-14_56R)


(2005-03-14_067R)


(2005-03-14_072R)

The discussion at KOSEF (Korean Science and Engineering Foundation), with Dr. Oh-Kab Kwon (first from left on left photo below), Chairman and CEO, and Dr. Byung-Wan Ho (third from right, center photo below), Director of International Programs, was focused on possible approaches to increasing the cooperation between Korean academics in engineering and allied fields and the international community. One option being discussed was to hold a major conference on engineering education and research in Korea. It was pointed out by Dr. Ho that the KOSEF budget for international cooperation has grown significantly, and it now approaches US$50M.


(2005-03-15_061R)


(2005-03-15_056R)

(2005-03-15_054R)

KOSEF was established in 1977 for the purpose of improving South Korea's capabilities in science and technology by developing research, education and international cooperation programs involving its academic institutions. In 1989, KOSEF initiated the Centers of Excellence Program: the Science Research Centers (SRC) and the Engineering Research Centers (ERC), each with a 9-year funding cycle. To date, a total of 104 centers have been created.

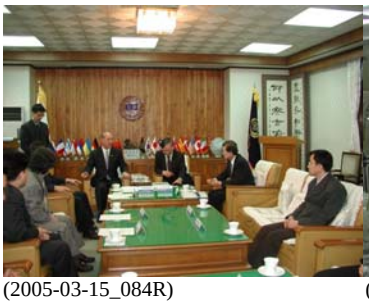
Hanyang University is one of the largest and most prestigious universities in South Korea. A private institution, it was established in 1939 as Dong-A Engineering Academy and elevated to a university and given its present name in 1959. The university has campuses in Seoul and Ansan. In 2000, it ranked 4th in the total amount of research funds awarded by the Ministry of Education, and 1st in the production of executives for major corporations. In 2002, at 13 papers per professor, the university ranked 1st in the rate of increase in research papers published per professor.

The combined Seoul and Ansan campuses have over 24,000 students, close to 10,000 of whom being undergraduate students in engineering. In addition, there are close to 8,000 graduate students, all on the Seoul campus.

The university offers M.S. and Ph.D. programs in 5 divisions, 67 departments and 9 majors.

Hanyang University is very active in international cooperation. It has held a biennial joint symposium with Waseda University of Japan since 1996. The 2001 Asian-Pacific University Presidents' Conference was held at the university. Hanyang University currently has 114 academic exchange with 18 countries, and offers various study abroad programs. The university also actively recruits foreign students, and there are over 350 foreign students studying at the university.

Both Prof. C.H. Wei and Dr. Win Aung visited Hanyang University on March 15, 2005 and met with Prof. Li-Hyung Lee (first from left facing camera, seated, left photo below), Vice President and Professor of Architecture, and a number of deans and faculty members. The visitors also toured research laboratories for materials science and engineering (center photo below).


(2005-03-15_084R)


(2005-03-15_113R)


(2005-03-15_124R

G. Visits in Portugal, July 18 – July 23, 2005

The iNEER visits in Portugal were side trips planned as an important adjunct to ICEE-2005 conference attendance in Poland. The purpose of these brief visits to selected institutions in Portugal was twofold: (a) to expand the global community in engineering education and research of which the U.S. community is a part; and (b) to share information on international developments in engineering education and research, so as to pave the way for increased future interaction between faculty and students in these institutions and the larger global community.

Dr. Vojislav Ilic, Senior Lecturer, University of Western Sydney, Sydney, Australia, joined Dr. Win Aung in the visits to Portuguese institutions. The visits involved four institutions: three in Lisbon, located in the southern part of the country; and the fourth in Coimbra which is situated in central Portugal. Two of these are universities: Technical University of Lisbon **(**UTL) and the University of Coimbra. These are among the largest and most prestigious universities in Portugal. The U. of Coimbra is actually also one of the oldest universities in Europe, having been founded in 1290. In Lisbon, we also visited the Instituto Superior Técnico (IST), the autonomous school of engineering of UTL, and a polytechnic, the Instituto Superior de Engenharia de Lisboa (ISEL, Lisbon Institute of Engineering). ISEL is under the Lisbon Polytechnic Institute.

The university system in Portugal dates from the 13th century and comprises 13 public universities and several private universities, the University of Coimbra being the oldest and, from 1290 until 1559, the only university in Portugal. A university is led by a Rector. Its structure includes schools, institutes and colleges. Universities have the exclusive right to grant masters and doctoral degrees.

The polytechnic system evolved from industrial and vocational schools, and started offering higher education in the 1980s. A polytechnic is headed by a President and is organized into schools and institutes. Like the universities, the polytechnics are regulated by the Ministry of Science and Technology and Higher Education.

The iNEER visits took place during July 18 – July 23, 2005. The following sections provide the list of people who met with the visitors, and some basic information about each institution.

Technical University of Lisbon (UTL)
Lisbon, Portugal
José Dias Lopes da Silva, Rector

One of the largest of universities in Portugal, the Technical University of Lisbon (UTL) was established in 1930. It has 7 schools and 50 academic disciplines with almost 1,900 faculty members, 20,000 undergraduates, and 3,000 graduate students. As a means to achieving excellence in UTL's mission, it is structured such that each of the 7 schools has significant autonomy. These schools are: Faculty of Veterinary Medicine; School of Agronomy; School of Economics and Management; School of Engineering; School of Social and Political Sciences; Faculty of Human Kinetics; and, Faculty of Architecture. All Ph.D. programs are taught in English.

UTL schools are spread across the city of Lisbon, each with residence halls located nearby. During our visit, Rector da Silva emphasized that UTL schools are the oldest and biggest in their respective specialty, each with their own financial and management responsibility. Each school is structured to handle its own external relations and linkage with their own major stakeholders in Portugal. He also emphasized that UTL schools are charged with not only achieving and maintaining academic excellence, but also encouraging and supporting the social and cultural development of the students. Each school participates actively in the Socrates Program of the European Commission, and each has a Socrates institutional program coordinator.

Rector da Silva himself is a physical chemist, and is the President of the Council of Portuguese Rectors.



Instituto Superior Técnico (IST)
Lisbon, Portugal
Carlos Matos Ferreira, President and Full Professor
Afonso Manuel dos Santos Barbosa, Vice President and Professor Catedrático
Eduardo Baptista Ribeiro Pereira, Member of Executive Board and Associate Professor

IST has two campuses in Lisbon: The main campus in Alameda and the Taguspark campus. Though autonomous in much of its operation, IST is organizationally a part of UTL as its School

of Engineering. It offers 21 undergraduate programs attended by 8,500 students. In 2002/2003, 1,000 students graduated from IST.

At the Master's (MSc) level, IST has 31 programs, some of which are offered jointly with other schools at UTL. In 2003, 140 MSc degrees were awarded by IST. IST offers the doctorate degree through UTL in 22 programs. In 2003, about 100 students obtained the degree.

Research is carried out within academic departments at IST. In 2002, an assessment by the Ministry of Science and Technology rated 78% of the institute's programs as Excellent or Very Good. Ninety percent (90%) of the researchers have the Ph.D. degree.

IST is active in the European Commission's SOCRATES/ERASMUS exchange program.

Instituto Superior de Engenharia de Lisboa (ISEL)
Lisbon, Portugal
Maria Ana Viana Baptista, President
Manuel José de Matos, Vice President and Professor

The Instituto Superior de Engenharia de Lisboa (ISEL), translated as Lisbon Institute of Engineering, is a part of Instituto Politécnico de Lisboa (Lisbon Polytechnic Institute) and is a polytechnic institution of engineering within the Portuguese higher education system. It originated with the establishment of the Industrial Institute of Lisbon *(Instituto Industrial de Lisboa)* in 1852. Until 1974, ISEL was a vocational school.

The Institute is led by a President (Maria Ana Viana Baptista), a Vice President for Research (Elmano da Fonseca Margato), and a Vice President for Academic Affairs (Hernâni Jorge Cardoso Mergulhão). The teaching staff comprises about 600 full time and part time faculty members including: 387 full professors of whom 72 have the Ph.D; and 164 assistant professors, most without the Ph.D. There are close to 7,000 students pursuing undergraduate degrees in five disciplines: civil engineering; electrotechnology and automation engineering; electronics, telecommunication, and computer engineering; mechanical engineering; and chemical engineering.

Led by a woman President, ISEL has a large female student population that makes chemical engineering its most popular discipline.

University of Coimbra
Coimbra, Portugal
Fernando Seabra Santos, Rector.
Lélio Quaresma Lobo, Dean, Faculty of Sciences and Technology.
Maria da Graça Bontempo Vaz Rasteiro, Associate Professor of Chemical Engineering.
Paulo Rupino da Cunha, Assistant Professor of Engineering Informatics.
Manuel Carlos Gameiro da Silva, Associate Professor of Mechanical Engineering.
Maria José Almeida, Department of Physica.
Luis Godinho, Dept. of Civil Engineering.
Rui Fugueiredo, Mechanical Engineering.
Fernando Figueiredo, Mechanical Engineering.
Nelson Rodrigues, Computer Science.
Antonio Dias de Figueiredo, Engineering Informatics.
Carlos Sá Furtado, Electrical Engineering, Dean Emeritus, Faculty of Sciences and Technology.

The **University of Coimbra** (**Universidade de Coimbra**) is one of the oldest universities in Europe and one of Portugal's most important higher education and research institutions. It led in the formation of a consortium of leading European research universities known as the Coimbra Group. It was founded in 1290 in Lisbon but later moved to Coimbra.

The University has eight faculties: Letters, Law, Medicine, Sciences & Technology, Pharmacy, Economics, Psychology & Education Sciences, and Sports Sciences & Physical Education), comprising about 23,000 students. The university houses a huge and well-known old central library, a large botanical garden, a stadium and sports complex, an astronomical observatory, and a private church.

The Faculty of Sciences and Technology offers a full range of degree programs in the following areas: Anthropology; Architecture; Biology; Biochemistry; Communications and Multimedia; Environmental Engineering; Biomedical Engineering; Civil Engineering; Electrotechnical and Computer Engineering; Physical Engineering; Geographical Engineering; Geological Engineering; Informatics Engineering; Materials Engineering; Mechanical Engineering; Mining Engineering; Chemical Engineering; Physics; Geology; Mathematics; Chemistry; and Industrial Chemistry.

Undergraduate enrollment in the Faculty of Sciences and Technology rose steadily from 1,629 during the 1972/73 academic year to a high of 7,800 by 1997/98. Then, it started to drop steadily to 6,600 by 2003/04.

Almost 10% of its students are foreign students, the highest among Portuguese universities. There are 70 different nationalities among the student population. The tuition fee for all its undergraduate students is equivalent of US$2,000 per year for 2004/2005, the limit allowed under State Law.

There are no evening programs at the university, where overcrowding is the norm in classes offered in some of the disciplines in the Faculty of Sciences and Technology, to the extent that there is standing room only for some of the students, sometimes outside of the classroom. It has been observed that these classes have the highest attrition rates, and students completing their courses also take the longest time to graduate.

The University of Coimbra will be the host of ICEE-2007; see below.

H. ICEE-2005, Gliwice, Poland, July 24 – 29, 2005

Geographically, the Upper Silesia region in southern Poland comprises only 3.9% of Poland, with 13% of its population. Yet, this part of Poland produces 20% of the Polish GDP. No wonder, since 91% of Polish coal comes from Upper Silesia, as well as 69% of the steel, 85% of the automobiles, 71% of the electronics goods and 20% of the computers. Located in the heart of Silesia is the city of Gliwice. First chartered in 1276 Gliwice, in Katowice Province, is a transportation hub as well as coal-mining center. Silesian University of Technology was established in Gliwice in 1945.

It was in this setting that close to 400 members of the iNEER network met for ICEE-2005 in July, 2005. Hosted by Silesian University of Technology (SUT) as a part of its 60th anniversary celebration, the conference was organized under the leadership of Rector Professor Dr. Wojciech Zielinski, with Prof. Jerzy Moscinski serving as chair of a 10-member Organizing Committee, and the able help from a team of 20 red-shirted student aides.

To be exact, there were 316 participants and 72 accompanying persons from 42 countries. A total of 320 papers were presented, along with 6 invited plenary lectures. Forty-four parallel sessions were organized, facilitated by 64 session co-chairpersons. The 5 countries with the largest number of participants were: Poland: 49; USA: 45; Taiwan: 34; Czech Republic: 21; and UK: 19. Women educators were particularly active at ICEE-2005 in all aspects of its activities, a trend that is expected to be maintained in conferences sponsored by the iNEER Network.

One of the highlights of the conference was the presentation of a letter of congratulations from Dr. Arden Bement, Director of the U.S. National Science Foundation, to Prof. Zielinski on the occasion of the 60th anniversary of the founding of SUT. The letter, signed by Dr. Bement, was framed and presented on Dr. Bement's behalf by me to Prof. W. Zielinski, Rector of SUT, during the opening ceremony on July 25. (See photo at the end of this report.) Another notable event was the presentation of the SUT Medal of Merit by Wojciech Zielinski to Win Aung, also during the opening ceremony on July 25.

Other highlights include:

(a) The presentation of plenary lectures by 6 invited speakers;
(b) The publication of a special edition of the iNEER Special Volume for 2005, a copy of which was distributed to every registered participant;
(c) The publication, and distribution to all participants, of the complete conference proceedings in both CD and book formats;
(d) The convening of the Joint iNEER Board/ISC meeting on July 24, an event co-chaired by Wojciech Zielinski and Tomas Cermak, Rector, VSB – Technical University of Ostrava, Ostrava, Czech Republic, who is also the chairman of the iNEER Board;
(e) The conference banquet and folk dance performance by students of SUT at the medieval castle in Toszek on July 25 when, just in time, the rain stopped and a rainbow appeared in the sky above the castle;
(f) The presentation of iNEER Awards to Wojciech Zielinski, Janos Barsony, and Jerzy Moscinski at the conference banquet in Toszek on July 25;
(g) The presentation of letters of felicitation on SUT's anniversary celebration by 9 representatives of foreign institutions, during the opening ceremony on July 25;
(h) The convening of the organizing meeting of the newly formed iNEER Leadership Council, chaired by Wojciech Zielinski, on Monday, July 25;
(i) The organization of the Janos Barsony Workshop, comprised of a series of 4 technical sessions held on July 25 and 26, in honor of the 65th birthday of Prof. Janos Barsony, Dean Emeritus of the Mihaly Pollock Faculty of Engineering at the University of Pecs, Pecs, Hungary;
(j) The Rector's Reception and folk music performance by students of SUT on the lawn of the Faculty of Chemistry on July 26;
(k) The performance on July 27, 2005 featuring the timeless music of Bach, Dvorak, Paderewski and Mendelssohn in the old and monumental St. Peter and Paul's Cathedral;

(l) The all-day technical tour and cultural event held on July 28 to Kraków, with all its monumental buildings and places of attraction, including the Wieliczka salt mine, a World Heritage site; and
(m) The dinner and dance at Zalesie Grange.

The flawless organization of the conference; the high quality technical program; the well-attended technical sessions; the delicious food, the culture and the traditions; the new friends discovered; the beautiful land and the equally beautiful people, who are at once sincere, unassuming, generous and hospitable: iNEER conferences are memorable for many of the same qualities and yet each will also be remembered for its uniqueness.

Like many of the iNEER conferences before it, ICEE-2005 is one that many participants told the iNEER Secretary-General they would not forget for a long time to come.

Photographic highlights and video clips for ICEE-2005 may be viewed at:

http://www.ineer.org/Photo/Welcome.htm

(A complete photo and video presentations are given in the first link: "Link to Silesian University of Technology ICEE-2005 Photo Gallery: http://icee2005.polsl.pl/Photos.php." Listed in the middle of the page are the photos contributed by a number of participants. Further down, you will see a list of video clips grouped under three topics. A visit to the group under "Zalesie" is highly recommended.)

Future conferences of the iNEER Network are currently scheduled as followed:

2006:
ICEE-2006 - San Juan (Puerto Rico): July 23-28

2007:
ICEE-2007 - Coimbra (Portugal): Sept. 3-8
iCEER-2007 - Melbourne (Australia): Dec. 3-7

2008:
ICEE-2008 - Pecs/Budapest (Hungary): Aug. 11-17
iCEER-2008 - Montreal (Canada): July 8-10

2009:
Joint ICEE/iCEER Conference, Seoul-Chonan (South Korea): August 9-14, 2009

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

OFFICE OF THE DIRECTOR

July 7, 2005

Professor Wojciech Zielinski, Ph.D.
Rector, Silesian University of Technology
General Chair, ICEE-2005
Gliwice, Poland

Dear Professor Zielinski:

I congratulate you and your associates on the opening of ICEE-2005. I also congratulate you on the 60th anniversary of the founding of Silesian University of Technology, the host and home of the conference.

I appreciate the importance of the work that you and your colleagues in the iNEER Network are doing in building international partnerships. We all recognize that we are living and working in a new age of scientific and engineering discovery. The conduct of science has changed--thanks in part to new information and communications technologies. Work at the frontiers of discovery has accelerated. The time between discovery, development and commercialization is compressing. Science and engineering is also growing more complex, and the boundaries between disciplines are blurring. This naturally makes interdisciplinary and collaborative research the norm rather than the exception. International collaboration is yet another iteration of this process, greatly facilitated by our new communications and computer technologies.

In today's world, scientists and engineers must be able to operate in teams comprised of partners from different nations and cultural backgrounds. What you do at ICEE-2005 is very important. We believe that the concept of mutual progress through international partnership can and does work.

Once again, my heartiest congratulations.

Sincerely,

Arden L. Bement, Jr.
Director









J. "Innovations 2005" – the iNEER Special Volume

This book is the fourth volume in the iNEER Special Volume series on innovations in engineering education and research. Published in March 2005 in time for distribution to all participants of iCEER-2005 held in Taiwan, the hardcover 2005 iNEER Special Volume contains 542 pages of text, 20% more than the book for 2004.

Reflecting the collaborative base of much of the work being reported, the forty-one articles came from ninety-one authors. Authorship came from fifteen countries: Australia, Botswana, Brazil, Canada, Greece, Namibia, Norway, Pakistan, Portugal, Russia, Sweden, R.O.C. (Taiwan), United Arab Emirates, United Kingdom, and USA. Providing comments during the peer review process were more than two hundred sixty reviewers from over forty countries.

A wide range of topics is covered in this volume, particularly as concerned teaching and learning in engineering and computer science. New curriculum models; the teaching of design; internationalization; linkage to industry; web-based instruction; linkage between education and research; learning assessment: these are some of the subjects of concern in the chapters to follow. Authors are senior educators and junior faculty members; they are from developed countries and developing countries, from major research universities and smaller regional colleges. These authors have one thing in common: They all have something important to say that can benefit all of us.

William Wulf, President of the National Academy of Engineering and author of the first chapter, notes that we as engineers have transformed society in ways that are not easily comprehensible to non-engineers (Chapter 1). He believes that, as engineers, we have a responsibility to help people cope in the environment *we* have created, and to proactively help non-engineering students acquire the technical literacy they need. An influential public speaker and writer, Wulf believes that engineers need to speak up on all public policy issues that have a technical dimension, such as through op-ed columns in local newspapers, involvement in civic groups, or even running for public office.

The members of the Board of Editors for the 2005 iNEER Special Volume were: Win Aung; Robin W. King; Jerzy Moscinski, Shan-Hwei Ou, and Luis Sanchez Ruiz. Their biographies can be read at:
http://www.ineer.org/iNEERPapers/Board_of_Editors.htm

The List of Reviewers for the 2005 Special Volume is available at:
http://www.ineer.org/iNEERPapers/Reviewers_sorted_by_names_12_3_04.htm

The Table of Contents and Preface are available at:
http://www.ineer.org/iNEERPapers/2005_Cover_Contents_Preface.pdf

K. "Innovations 2005 – Special Edition"

This special edition of Innovations 2005 was issued to provide a sharper focus on teaching and learning tools, and programs and techniques that we consider to be particularly relevant to addressing emerging issues in engineering education and research. The overall goal remains that of providing a platform for highlighting recent innovatins in engineering education and research, thereby enhancing the opportunity for further progress through international cooperation.

The Board of Editors and the iNEER Board were pleased to dedicate this book to Silesian University of Technology, Gliwice, Poland on the occasion of the sixtieth anniversary celebration of its founding.

L. Operation of iNEER Secretariat and Financial Report

The 2005 financial statement and the auditor's report for iNEER were prepared Mr. Wang Neng-Hsiang, a chartered public accountant whose selection has been approved by the iNEER Board. The auditor's report is on file and available upon request; the statement on cash flow is attached in Appendix 1.

Respectfully Submitted,

Win Aung, Ph.D., P.E., Dr.h.c.
Secretary General
iNEER

APPENDIX 1

Financial Statements

	For the Twelve Months Ending December 31, 2004			For the Twelve Months Enging December 31, 2005		
	MD	NJ	TOTAL	MD	NJ	TOTAL
Revenues						
Income	$ 135,940.82	$ 25,000.00	$ 160,940.82	$ 114,824.61	$ 29,443.71	$ 144,268.32
Total Revenues	135,940.82	25,000.00	160,940.82	114,824.61	29,443.71	144,268.32
Expenditures						
Office Expenditures	25,027.05	145.20	25,172.25	19,467.33	-	19,467.33
Travel Expenditures	4,291.79	5,140.00	9,431.79	16,936.19	5,416.00	22,352.19
Other Expenditures	9,839.87	29,108.60	38,948.47	36,480.48	29,808.78	66,289.26
Meeting-related Expenditures	14,473.37	-	14,473.37	21,588.19	-	21,588.19
Total Expenses	53,632.08	34,393.80	88,025.88	94,472.19	35,224.78	129,696.97
Net Income	$ 82,308.74	$ (9,393.80)	$ 72,914.94	$ 20,352.42	$ (5,781.07)	$ 16,421.52

NOTES TO FINANCIAL STATEMENTS:

1. **The International Network for Engineering Education and Research, Inc**. **(iNEER**) is a Maryland-based non-profit organization, which was incorporated on July 16, 2002 as a Maryland corporation. Through collaboration in education and research, the iNEER works with members from both industrialized and developing nations to develop a global network of educators and researchers to help advance education and research around the world, and to achieve mutual progress through international exchanges and linkages, formation of cooperative partnerships, and information sharing to enhance the education experience for students. Membership in iNEER is free of charge

2. A letter dated July 16, 2003 from Internal Revenue Service establishes the following rulings: (1) accounting period ending: December 31; (2) foundation status classification: 509(a)(2); (3) advance ruling periods to begin July 16, 2002; (4) advance ruling period to end December 31, 2006; and (5) addendum not applied.

3. The Secretariat headquarters are divided between the New Jersey Secretariat, which is located at New Jersey Institute of Technology, Newark, New Jersey, and the Maryland Secretariat, which is located in Potomac, Maryland.

4. A comparative analysis of income and expenditures for two secretariat locations mentioned above for the past two years follows:

	Year ending 12/31/04		Year ending 12/31/2005	
	MD	**NJ**	**MD**	**NJ**
Revenue	$135,941	$25,000	$114,825	$29,444
Expenditures	53,632	34,394	94,472	35,225
Net Income	82,309	(9,934)	20,353	(5,781)

5. Although financial activities in both secretariat locations are combined and treated as one activity for financial reporting and audit purposes, it is treated separately for income tax reporting purpose. For tax reporting purpose, iNEER's activities at New Jersey is incorporated into the educational funds of New Jersey Institute of Technology. As to the activities in Maryland secretariat, Form 990 has been prepared and mailed separately to Internal Revenue Service Center, located at Ogden, UT 84201-0027.

6. An error was found leading to an adjusted journal entry this year (2005) on iNEER's activity in New Jersey (as a part of educational funds of New Jersey Institute of Technology). The entry follows: DEBIT: Checking Account $16,379.17
CREDIT: Retained Earnings $16,379.17. Such entry is in recognition of ending balance PER BANK of 2001. Prior to its incorporation as a Maryland Corporation, iNEER had been in existence in New Jersey whose activity ever since has been accounted for independent of the Maryland Corporation.