

Report on the International Conference on Engineering and Education (ICEE) in the 21st Century

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THE ICEE was held in Kuching on 23-25 March 2009 at the Hotel Riverside Majestic, Kuching, Sarawak. The conference kick started the year-long celebration of The Institution of Engineers, Malaysia (IEM) 50th Anniversary (IEM was founded on 1 May 1959).

The conference was supported by the Board of Engineers, Malaysia, the Academy of Sciences, Malaysia, the International Science & Technology Innovative Centre (ISTC) and the ASEAN Academy of Engineering & Technology (AAET). A total of 234 participants from more than 10 countries attended the conference.

The ICEE was officiated by YAB Pehin Sri Haji Abdul Taib Mahmud, Chief Minister of Sarawak. The IEM, in recognition of the contribution in Engineering Advancement, Development and Achievements by YAB Pehin Sri Haji Abdul Taib Mahmud, conferred him the Honorary Fellow of IEM. The IEM President, Y.Bhg. Dato' Paduka Engr. Haji Keizrul bin Abdullah, read the citation at the opening ceremony and presented him with the certificate.

After delivering his opening address, YAB Pehin Sri Haji Abdul Taib Mahmud declared the opening of the conference by striking the 'gong'. The Chief Minister, on behalf of the State Government of Sarawak, donated a piece of land to IEM Sarawak for the setting up of a centre of excellence for renewable energy and biodiversity. This was followed by the presentation of certificates of appreciation by the IEM President to the sponsors after the opening ceremony.

The international conference has a rich program with keynote lectures from prominent speakers such as Dr Winfred M. Phillips (Chairman of the Washington Accord), Ir. Dr Wee Ka Siong (Deputy Minister of Education 1, Malaysia), Eng/Ing Barry J. Gear (President of WFEO), Prof. Dr Walter Erdelen (Assistant Director General for Natural Sciences, UNESCO), and Academician Dato' Engr. Lee Yee Cheong (Chair, Governing Board, ISTIC).

Other speakers and panellists during the roundtable sessions were Peter Godfrey (National President, Engineers Australia), Mme Donghong Cheng, Richard Hancock (Past President, Engineers Canada), Er Foo Say Wei, Past President, IES and Dato' Engr. Prof. Dr Chuah Hean Teik (President Elect, IEM), Dato' Engr. Prof. Dr Ow Chee Sheng (Immediate Past President, IEM) and many others who contributed towards the success of the conference.

The conference program, with other technical papers being presented in parallel sessions, was well executed within

the allocated time frame thanks to Engr. Yim Hon Wa (IECC Organisation Chairman), Engr. Dr Ooi Teik Aun (Chairman of Technical Papers Committee) and the organisers. The state government sponsored the Conference Banquet and the cultural show at the banquet.

A technical visit to the Bengoh Dam construction site together with a visit to a typical longhouse at Kampung Annah Rais, which was along the way, was also arranged for the participants of the conference.

The conference was successfully concluded with the Kuching Declaration and declared closed by Dato' Paduka Engr. Haji Keizrul bin Abdullah. The highlight of the conference was the Kuching Declaration which was endorsed by the conference delegates and is as follows:

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THE KUCHING DECLARATION THE INTERNATIONAL CONFERENCE ON ENGINEERING AND EDUCATION IN THE 21ST CENTURY (ICEE 2009) 24 March 2009

PREAMBLE

Fifty speakers, and more than 200 engineers and engineering academicians from over 10 countries came together for The Institution of Engineers, Malaysia (IEM) International Conference on Engineering and Education in the 21st Century (ICEE 2009). The conference was held with support from the Board of Engineers Malaysia (BEM); Academy of Science Malaysia (ASM); the ASEAN Academy of Engineering and Technology (AAET), and the International Centre for South-South Cooperation in Science Technology and Innovation under the auspices of UNESCO (ISTIC).

The objective of the ICEE 2009 was to create awareness and understanding of the importance of engineering and engineering education worldwide and its latest trends. The new millennium will require engineering institution and education reforms. ICEE 2009 brought together national engineering organisations, engineers, academicians, technopreneurs and experts that represent at least 15 million engineers from all over the world for the sharing and exchanging of information on the quality of engineering education, the system and training of the professional engineers.

PROCLAMATION

MINDFUL that world in which we live today has become complex and is facing severe challenges; that the environment continues to deteriorate; that there are more frequent and devastating natural and man-made disasters; that there is mass depletion of natural resources;

HEEDFUL that our current model of development poses significant challenges when it comes to achieving a more just society based on respect for nature and human rights, and demands a fairer economy and greater solidarity towards different cultures and future generations;

AWARE that the world and its cultures need a different kind of engineer – the ‘UNIVERSAL ENGINEER’ – one who has a long-term, systemic approach to decision-making, one who is guided by ethics, justice, integrity, equality and solidarity, and has a holistic understanding that goes beyond his or her own field of specialisation; one who is acceptable the world over;

CONCIOUS that Engineering Education is a vital tool to be used for facing today’s challenges, for building a better world and essential for achieving sustainable development and social progress; maintain social cohesion, reduce poverty and promote peace and understanding;

WE HEREBY DECLARE THAT

The Engineers of today and tomorrow must:

- Possess universal skill for international mobility and alertness towards financial tsunamis and/or unethical practices of the profession;
- Be creative, innovative, and market ready.
- Have high moral fibre, ethics and integrity.
- Adapt their design and work to address the issues of sustainable lifestyles, resource efficiency, pollution prevention and waste management.
- Be more ‘society-conscious’ i.e. understand how their work interacts with society and the environment, locally and globally, in order to identify potential challenges, risks and impacts.

- Participate actively in the discussion and definition of economic, social and technological policies, to help redirect society towards sustainable development.
- Apply professional knowledge according to universal values and ethics.

IN ORDER TO ACHIEVE THE ABOVE:

- Universities and Engineering Institutions must be:
 - All-inclusive and not exclusive
 - Multi-level
 - Multi-disciplinary
 - Multi-national
- Engineering Education must:
 - Have an integrated approach to knowledge, attitudes, skills and values in teaching.
 - Stimulate creativity and critical thinking.
 - Raise awareness on the need to address issues on renewable energy, conservation, green energy, and sustainability.
 - Teach about harmonising development with environmental goals.
 - Encourage reflection and self-learning.
 - Increase awareness about the need to safeguard the environment
 - Show ways of incorporating the framework of sustainable development into mainstream development planning.
 - Raise awareness for the challenges posed by globalisation.
 - Give more emphasis on ethics and integrity through seminars, talks & workshops.
 - Be structured with a view to ultimately eradicate bad behaviour and corruption amongst engineers.
 - Benchmarking with the global best.

CALL TO ACTION

We, the participants at the International Conference on Engineering and Education in the 21st Century (ICEE 2009) hailing from Australia, Canada, France, Germany, India, Indonesia, Kuwait, Malaysia, Myanmar, Nigeria, Pakistan, the People’s Republic of China, Singapore, the United States of America and Vietnam do hereby commit ourselves in this Kuching Declaration and issue a call on engineers, universities, engineering organisations, governments and international bodies to acknowledge and adopt the actions stated in this declaration:

In view of the consensus that industry participation is essential in the education of engineers, The Institution of Engineers Malaysia (IEM) is mandated to take the lead in establishing a roadmap for this purpose.

In response to the call by the Sarawak State Government to participate in the Sarawak Corridor on Renewable Energy (SCORE) project, The Institution of Engineers, Malaysia (IEM) shall focus on its International Engineering Centre (InTEC) on human capacity development essential for the success of the project.

On the issue of women engineers, the engineering profession shall encourage the participation of more women in engineering.

Done in Kuching, Sarawak, Malaysia on the 24th Day of March in the Year Two Thousand and Nine. For and on behalf of the Participants of the ICEE 2009.



Figure 1: Partial view of ICEE 2009 participants



Figure 3: Chief Minister of Sarawak declaring the ICEE 2009 open



Figure 2: Chief Minister of Sarawak delivering his opening address and thank you speech



Figure 4: Roundtable session on engineering education panels