

NLB and IES Renew Partnership

National Library Board (NLB) and The Institution of Engineers, Singapore (IES) reaffirmed their commitment to collaboration at a Memorandum of Understanding (MOU) signing during the official launch of National Engineers Day (NED) 2011 at the National Library Building. On 24 March, Ho Siong Hin (President, IES) and Ngian Lek Choh (Director, National Library), each representing their respective institutions, renewed IES and NLB's dedication to working together to promote knowledge and learning in the engineering field. This was formalised through a signing ceremony, witnessed by Minister of State, Trade and Industry, & Manpower, Lee Yi Shyan — himself a chemical engineer by training.

The MOU is symbolic of the agreement to work towards the enhancement of the Engineering collection at the National Library. As part of the MOU, a new Engineering Corner at Level 7 of the Lee Kong Chian Reference Library will showcase engineering-related displays and projects such as the Biosuit™ and the 'N' class oil rig model from Keppel FELS. New exhibitions will be featured on a regular basis in this space.

In turn, NLB's industry standards collection, relocated from SPRING Singapore to Level 7 of the National Library in December of last year, will be a vital resource to engineers.



Ho Siong Hin, President of IES, and Ngian Lek Choh, Director of the National Library, exchange the signed documents at the ceremony witnessed by Minister of State Lee Yi Shyan.

The single most comprehensive collection of standards in Singapore, this collection of International standards (such as the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) standards), national standards of major countries, key industry and consortia standards, and those from Singapore will be a boon to those working in the Engineering field.

Both organisations will work in tandem to provide access to information and services which promote engineering and in the process, develop greater understanding of the industry among practising and aspiring engineers, and the greater public. Some of these new offerings will be information services, codes of practice, standards and reference materials on the Engineering Sciences.

At the opening of NED 2011, Dava Newman — Professor of Aeronautics & Astronautics and Engineering Systems and Director of the Technology and Policy Program, MIT — was invited to speak about her invention, the Biosuit™, currently

on display at the Engineering Corner. Honoured as Aerospace Educator of the Year and one of Time Magazine's Best Inventors of 2007, Newman delivered an illuminating lecture on human spaceflight research and the BioSuit™.¹

The restrictive nature and burdensome 130 kg weight of the current Space Shuttle Extravehicular Mobility Unit (EMU), a two-piece, semi-rigid spacesuit worn by National Aeronautics and Space Administration (NASA) astronauts inspired Newman to create the BioSuit™ System, an invention which stands to



At the opening of the Engineering Corner, Minister Lee Yi Shyan discusses the Keppel FELS N-class oil rig (model pictured), one of the world's largest jackup rigs to be constructed for the North Sea.

revolutionise space exploration by improving astronaut mobility and flexibility in different planetary environments.

The BioSuit™ provides life support by applying mechanical counter-pressure to an astronaut's whole body through the tight-fitting suit with the helmet for their head. This design is based on the concept of a "second skin" capability, which makes use of skin replacement and materials from biomedical breakthroughs.

Additionally, the outer layer of the Bio-Suit is embedded with "wearable technologies", and is recyclable, while the inner layer of the Bio-Suit can be sprayed or disposed of after each EVA mission. This is yet another design advantage in the extreme dusty planetary environments in which the astronauts commonly work.

Newman concluded her keynote address by stating that "the world's space faring nations are at the threshold of a new era of human spaceflight" and brought up the larger issue: Why human space exploration? This timely question alludes to the considerations that engineering raises and the impact asking these big questions can have on the future as well as knowledge gathering as a whole. ■



Dava Newman gave a lecture on "A New Age of Exploration: Human Spaceflight Research and Future Directions" at launch of National Engineers Day 2011. Guests were also treated to a face-to-face viewing of her invention, the Biosuit™.

For more information on the Biosuit™, refer to mvl.mit.edu/EVA/biosuit/index.html

About the Institution of Engineers, Singapore (IES)

Formally established in 1986, The Institution of Engineers, Singapore (IES) is the national society of engineers in Singapore. Well-represented by faculty members of the major engineering institutions of high learning in Singapore and in close collaboration with the local universities and polytechnics, IES organises courses, seminars and talks for engineers and IES members to advance and ensure the continual development of the engineering field. The institution also maintains close links with professional organisations of engineers regionally and throughout the world, including those in Australia, China, Japan, United Kingdom and the United States.

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