



UoW Success in IEAUST National Engineering Week

University of Wollongong budding engineers have taken out first and second prize as part of the Institute of Engineers Australia National Engineering Week. With a total of \$2500 in prizes collected by the students, the competition was a given to be a challenge.

The competition, held at the heart of the Sydney CBD, brought forward competitors from a range of universities including the University of Sydney, UNSW, University of Technology Sydney and the University of Western Sydney.

Amongst a total of twenty teams that

competed this year, Wollongong Mechatronics, Electrical and Civil undergraduates provided a dominating performance to take out both first and second place, with a credible effort in also securing third.

The challenge given to the students for the day consisted of constructing a bridge from a limited amount of materials, to hold a nominated load over a 2.4 metre span. With just two and a half hours build time, one of the four UOW teams held the nominated weight and was the lightest

bridge on the day to do so.

Ghiath Wahbi and Adam Hoare, Mechatronics and Electrical undergraduates from UOW, were very pleased by the win in a field of engineering that was more so a civil engineering orientated competition. "It was a good challenge, with some fairly competitive teams" Ghiath Wahbi said.

Second prize, for the bridge able to hold the greatest weight over the presented span, was also heavily contested by two UOW teams. Being the only

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Dean's Spot

The Australian University system receives much of its funding based on the number of student 'places' the Government has agreed to allocate to a particular University. Different courses attract different levels of funding; for example it is much more costly to educate an engineering student, partly because of the cost of providing expensive equipment for engineering laboratories, than most other students. Hence the Government provides the greatest amount of funding per student for engineering and other laboratory-based disciplines. There is a severe shortage of engineers in Australia, and in many other countries around the world, caused by a number of factors such as an aging population (meaning that many engineers will retire over the next few years); a growing economy which requires many more engineers to provide for the rapidly expanding electrical, mechanical and civil infrastructure required to support a modern country; and the rapid development of two of the worlds largest nations, China and India, which require countries such as Australia to expand their capacity to export goods and services.



The long-term demand for engineers is now so pressing that the Government has agreed to fund an additional 500 engineering places per annum nationwide beginning in 2008, which will produce about 2000 additional engineering graduates over the next eight years. This is many millions of dollars of additional funding. Universities with major engineering Faculties have made representations to Government to have these places allocated to them, and last week it was announced that our University of Wollongong has attracted 70, or 14%, of these new places. We are particularly proud of this significant recognition by Government of the stature and quality of Engineering at Wollongong; this is more places than any other University in NSW, the second highest allocation to any University in the whole of Australia (even though most other Universities in Australia are substantially larger than Wollongong) and we are one of only two Universities outside a capital city to be awarded any

engineering places. This strong vote of confidence in us by Government, backed by a substantial funding increase, is a tribute to the University generally, and to all the staff in Engineering in particular, who have built and sustained over many years the very high quality comprehensive engineering education provided to all our undergraduates enrolling in our nine separate engineering disciplines.

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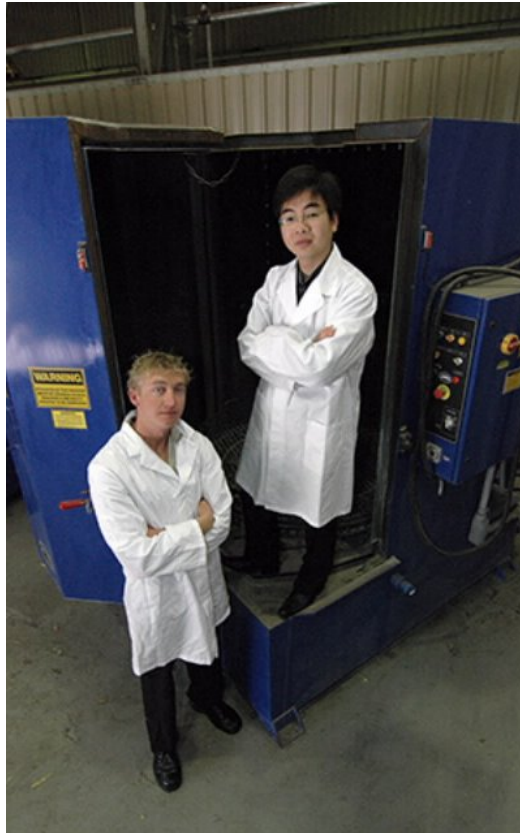
Water as a replacement for machinery cleaning

In a plus for the environment, an engineering student at the University of Wollongong has achieved promising results for using water instead of solvents to clean industrial machinery parts.

Liam Pettigew, originally from the Northern Territory, is a final year student in UOW's School of Civil, Mining and Environmental Engineering. He recently won the inaugural Ted William Scholarship for environmental engineering students. Liam is undertaking his research under the supervision of Dr Long Nghiem.

The scholarship gave Liam the opportunity to undertake a project that will not only help the environment but also save money for manufacturing industries.

Over the past three months, Liam has been conducting a research project to evaluate the effectiveness of water-based



Dr Long Nghiem with Liam Pettigew testing out their environmentally friendly research at the Area 21 Maintenance Workshop at BlueScope

parts cleaning technology over its traditional solvent-based counterpart.

“So far his tests show that performance of the water-based technology has been outstanding,” Dr Long said.

“The demand for parts cleaning devices in maintenance workshops in a region like the Illawarra is huge”, he said.

“Using solvent-based products means much of the toxic solvent will either end up in the air or waterways hurting the environment.

Liam said that for the water-based cleaning devices to work effectively they should be equipped with a micro-filter and oil skimmer to prolong the cleaning solution life time.

“Otherwise, this technology may not be effective at all,” he said.

Liam and Dr Long will present the outcome of this research work to an environmental conference in Cairns this December.

Article by Bernie Goldie

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two teams on the day to hold the maximum load of 40kg, the lighter bridge of these two was awarded second place.

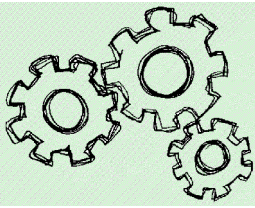
Associate Professor Bob Wheway from the University of Wollongong commended the student's success in Sydney and noted that “it is good to see that UOW engineering undergraduates are getting a broad end education into fields that are not necessarily related to their specialisation”.

Honourable Mention

Professor Buddhima Indraratna and his past PhD student Dr. I. Sathanathan have been honoured by the Canadian Geotechnical Society with “Robert M. Quigley Honourable Mention” for outstanding contribution to the Canadian Geotechnical Journal during the past year. The contribution, dealing with a new theory on “radial consolidation based on non-linear flow for stabilising soft coastal clay with vertical drains”, has been recognised by the International Editorial Board as one of the three best original contributions to the field of

geotechnical engineering during the past year.

This recognition for Professor Indraratna and the geotechnical team at UoW is well deserved, and is a very prestigious felicitation by the Canadian Geotechnical Society.



2007 Vice-Chancellor's Challenge Grant for Early Career Researchers

Congratulations to Professor Buhima Indraratna who has been awarded a Vice-Chancellor's Challenge Grant 2007: "Fostering Support for Early Career Researchers (ECR) and New Academics and Monitoring their Research Progress".

The grant was approved by Prof. Gerard Sutton for an amount of \$30,000 for the period 2007-2008 and will be utilised to fund CME Early Career Researchers and New Academics. It is important to note that almost one third of CME staff are ECRs.

The funds will be administered through the Centre for Geomechanics and Railway Engineering (GRE) and will be available for shared/common equipment and computer software, specific site work, professional networking, laboratory materials and other justified research activities.

The Researchers may apply for these funds directly to Professor Indraratna by e-mail with a brief proposal (about 300 words). The funds will be dispersed with the understanding that at

least ONE article in a reputed Journal will directly result from these funds.

Diary Dates

9 Oct	Faculty Education Committee
16 Oct	Faculty Research Committee
23 Oct	Faculty Postgraduate Research Committee
6 Nov	WAC Committee

Engineer's Profile

Michaela Cutting started her BE in Civil Engineering in 2001 and graduated in 2004 with first class honours, scoring High Distinctions in 18 subjects and Distinctions in 13 subjects. Her thesis on the progressive collapse

of buildings was the first to tackle this problem in the Faculty.

Michaela was the president of the Civil Engineering Society during her final year of study. With her colleagues, she organised the engineering

ball in Wollongong. Several academic staff attended this successful event.

Since graduation she has been working with Arup in Sydney and was awarded the Australian Steel Institute (ASI) Award in 2004 for best steel design and has already contributed to a number of big city builds.

Michaela was recently profiled in the Steel Australia magazine (published by the Australian Steel Institute). The article outlined Michaela's very successful career path in structural engineering and readers were provided with insight into her current engineering projects which include the Australian Museum and King Street Wharf in Sydney.



Michaela Cutting

Student Scholarship

Negin Doulai, an undergraduate Mining Engineering student, has received a scholarship from Anglo Coal Australia, one of Australia's leading coal producers and a division of Anglo American PLC – a world-wide group of companies whose main focus of operations is natural resources.

This prestigious scholarship is offered to only 25 students from various disciplines, including Mining, Mechanical, Electrical and Chemical Engi-



Negin Doulai is presented with a scholarship by Connie De Senata CEO for Anglo Coal.

neering, as well as Geology, Surveying and Human Resources. In 2007 over

600 applications were received.

The scholarship is for \$7000 per annum for the course of their degree and includes one summer located mostly in Qld and NSW but with operations also in Victoria.

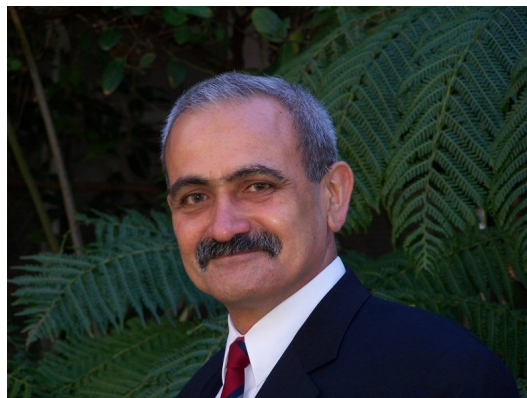
The scholarships were presented at a ceremony on the 6th September 2007 at the Mecure Hotel in Brisbane where scholarship holders met with industry representatives.

Staff News

Associate Professor Muhammad Hadi has recently attended two conferences. The first, the Eleventh International Conference on Civil, Structural and Environmental Engineering Computing was held in St. Julians, Malta. Muhammad was a member of the Conference Organising Committee, chaired one session and presented two papers, one in the area of modelling the behaviour of helically reinforced concrete beams and one concerning prestressed continuous beams. A third paper, presented by his coauthor, related to FRP in reinforced concrete.

Associate Professor Muhammad Hadi also presented one paper in the 4th International Structural

Engineering and Construction Conference, "Innovations in Structural Engineering and Construction", which was held in Melbourne from the 26 – 28 September 2007. This paper provided information on the use of different types of fibres in concrete. A second paper was presented by his co-author. The confer-



A/Professor Muhammad Hadi

ence was well attended with four parallel sessions over three days.

Top 25 Articles

The Journal of Alloys and Compounds has just rated its TOP 25 Journal Articles and an article by Dr Andrezj Calka and his collaborators from Canada titled "Mechanochemical synthesis of nanostructured chemical hydrides in hydrogen alloying mills" has been rated number 10. This is an extremely prestigious achievement.

For a full list of the Top 25 visit the website below:

http://top25.sciencedirect.com/?journal_id=09258388