



Dean's Spot

As part of our 'Early Entry' program, the Faculty last week interviewed over 220 students who have expressed interest in joining our Faculty as undergraduates in 2006. These students came from schools from all over New South Wales, and many drove very long distances to get here. Over two full days nine teams of interviewers talked individually to every prospective students about careers in physics and engineering, and the courses they could undertake here. In addition, every student was offered a tour of our laboratories and other facilities. It was a great team effort involving our academic, administration and technical staff, and also many of our existing students, who helped with the tours. It was certainly very encouraging to talk to so many talented and enthusiastic new students wanting to enrol in our Faculty next year.

The results of the University's 'Small Grants' research scheme were announced recently and the Faculty received several new grants for 2006. These grants will assist in pursuing new research work in several different engineering and physics areas, such as buildings and structures, including off shore platforms for oil drilling, materials (especially steels), superconductors, virtual reality (for robotics), and semiconductors.

These small grants provide 'seed money' to allow researchers to develop their ideas further in order to attract major industry and other funding in the future.



Visitors

One of our former graduates, Dr. Ahmed Mosbah has recently spent six months here as a Visiting Fellow conducting research on electric discharge assisted plasma milling with Dr. Andrzej Calka and Dr. David Wexler. Ahmed has now returned to his lecturing position at Tripoli University.

The Faculty was visited by a delegation from the University of Science and Technology, Beijing, China on 22 September. Discussions were held with the Dean, Discipline Leaders and Researchers and the delegation was given tours of research laboratories in the Faculty. This visit follows on from visits to China that Profs. Cook, Tieu and Dippenaar have made to establish collaboration with the University of Science and Technology, Beijing.

Dr. Emilia Illeková from the Institute of Physics, Slovak Academy of Science, Bratislava, Slovakia visited the Faculty from 16-25 September. Dr. Illeková is an expert on thermal analysis and collaborates with Dr. Andrzej Calka on an ARC Discovery Grant researching stability of materials synthesised by electric discharge synthesis.

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Prof. Sarah Springman from ETH-Zurich visited UOW to establish collaborative research with Prof. Buddhima Indraratna in Railway Geotechnology and Ground Improvement. Sarah is one of the most well known geotechnical experts in the world today and we valued the opportunity for geotechnical research students to have meetings with her and give her a tour of our soils laboratories. Apart from Sarah's academic achievements, she was several times the British and European Champion of Womens' Triathlon.



Prof Sarah Springman and the UOW Geotechnical Research Group

Staff News

Dr. Xiaolin Wang, Coordinator of Spintronic and Electronic Materials Group at ISEM visited Dr. Ian Plumb's Hydrogen Generation Group at the Industrial Physics Division, CSIRO in Sydney. During his visit, Dr. Wang gave a talk on materials science and physics of novel materials suitable for spintronics and water splitting applications to a large audience. This visit has resulted in collaborative research being planned for developing novel photocatalyst for water splitting applications through the CSIRO's Flagship Program. Dr. Plumb's group visited ISEM at the end of September to see the facilities here.

Dr. Gustavo Alvarez has joined the Spintronic and Electronic Materials Group at ISEM. He joins us from the International Superconducting Science and Technology Center of Japan, where he was a researcher.

Dr. Brett Lemass has coauthored a book with Anne Gardner that links fundamental mechanics principles and structural analysis to engineering design of a major structure. The book titled "*Fundamental Structural Analysis for Design*" is aimed at students in the early years of civil, environmental or construction engineering degree programs.

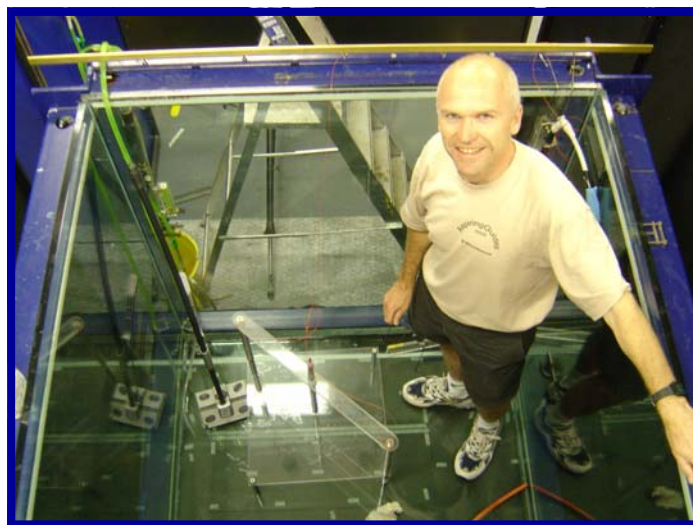
URC Small Grant Success

A number of Faculty of Engineering staff were successful in the latest round of University Research Council Small Grants. Congratulations to Dr. Samantha Liyanapathirana, Dr. Dominic Phelan, Dr. Weihua Li, Prof. Brian Uy, Dr. Cheng Lu, Dr. Alex Remennikov, Dr. Rodney Vickers, Dr. Prabuono Kosasih, Dr. Gustavo Alvarez, Dr. Chris Hawley, Dr. Xialing Wang, Prof. Tim McCarthy and Dr Koren Ward.

University International Links Grants

Recent winners of a University Internationalisation Committee (UIC) grant are A/Prof Paul Cooper and Prof John Norrish. The grant will assist them in further developing collaboration with Dr. Gary Hunt of the Department of Civil & Environmental Engineering, Imperial College London (ICL). The grant will support research on welding fume dispersion and, in particular, the modeling of the fluid mechanics and fundamental physics of the generation of and dispersion of welding fume, which is now recognized as being a significant health issue for welders.

This work follows on from two recent research visits by Paul Cooper to Imperial College where he carried out experimental modeling of the flows involved using water/saline solution scale models. This collaboration also complements other strong links with Civil and Environmental Engineering ICL, such as Prof Brian Uy's work with Prof Nethercot.



Paul Cooper in the water/saline solution scale modeling facility at Imperial College London

Undergraduate Student News

Thirty four mechanical, environmental and mechatronics students in MECH378 Sustainable Energy Technologies recently visited the BP Solar photovoltaic manufacturing plant at Olympic Park, Homebush with Paul Cooper. In MECH378, students study how renewable energy technology options operate (including photovoltaic solar cells) and how they can reduce our impact on the environment.

The manufacturing plant is currently being upgraded and will shortly produce 50MWpeak of solar cells per annum. There were lots of interesting materials and mechanical engineering issues to be seen; from the robotic processing and testing of the cells through to the complex processing of the silicon slices of the cells.

Immediately after the visit to the BP Solar plant, the group went on to see the Houses of the Future with various advanced housing technologies on display in demonstration buildings, also at Homebush.



MECH 378 Students at the BP Solar Manufacturing Plant

University of Wollongong students again performed to a high standard in the 20th Annual Society of Manufacturing Engineers Sydney Chapter 144 Student Presentation evening. The competition was open to students from the UNSW, Sydney, Western Sydney and Wollongong Universities. Five UOW students presented topics ranging from robotised drilling, vibrations of a reversing mill for rolling hot strip aluminium, manufacturing of a high efficiency evaporative air coolers, project management of solar competition car and F-SAE teams and design for manufacture of a F-SAE car chassis.

First place was awarded to Mr Elias Kassas, Mechanical Engineering, UOW, for his presentation on the 'Design for Manufacture of the 2005 UoW F-SAE car chassis'. Janet Baird, Mechatronics, UOW, presented her BE thesis project 'Robotic Normalising Force Feedback', and was a close runner up. The SME Student Night Co-ordinator praised the attendance of the supporting UOW F-SAE team members and took opportunity to wish the team well in the forthcoming F-SAE competition.

Students of the Future

Recently UOW hosted an information session for students studying civil/structural engineering at TAFE. Dr Muhammad Hadi gave a presentation to the students about the University, the Faculty of Engineering, School of Civil, Mining & Environmental Engineering and the civil engineering course. Two of our students, Lucinda Phelps and Ben Beasley also gave a presentation from the perspective of a current student. The presentations were well received and generated interest amongst the TAFE students.

Dr David Martin, lecturer in Physics and Ms. Deirdre MacDonald, Physics technical assistant, helped a group of nineteen Year 12 students from St. Patrick's College, Sutherland who recently visited the First Year Physics laboratory. The students were able to gain a better understanding of one of the more difficult physics modules, prior to the HSC, thanks to David's expertise and enthusiasm and Deirdre's help in the laboratory.

Presentation at the Powerhouse

In September PhD candidate, Ms. Melanie Werner gave a presentation at the Powerhouse Museum titled "A Small-Scale Solar-Powered Desalination Unit for Remote Communities". The presentation was part of an exhibition called 'Watts 'n Drops' that aimed to highlight water and energy efficient devices. As part of a small program called 'Young Minds New Ideas' ten PhD students presented their work over a weekend. The aim of this program was to highlight the work of young researchers in the fields of water and energy efficiency and was organized by the NSW Ministry for Science and Medical Research. Congratulations to Melanie, who is supervised by Dr Andrea Schaefer, on being selected to present her work at the Powerhouse Museum.



Melanie Werner

UOW Graduate Wins Award

Glenn Mathews, a civil engineering graduate of 1998, has been awarded the Young Professional Engineer of the Year Award for the Sydney Division of Engineers Australia at a Ceremony in Sydney on September 7th. Glenn is a consulting structural engineer who now runs the Wollongong Office of Northrop Consulting Engineers. Some of the recent projects he has worked on include the Campus East Accommodation of the University of Wollongong and the new Dwyer's facility in Fairy Meadow. Glenn is also the Deputy Chair of the Australian Steel Institute's Special Interest Group on Construction.

Editorial Board Appointment

Prof Brian Uy has just been appointed to the Editorial Board for the Journal on Constructional Steel Research. This journal is published by Elsevier Science and is considered to be the premier journal for scholarly research in steel and steel-concrete composite construction. The journal's impact factor has doubled in the last year. Brian Uy is one of only two Australian editors on the Editorial Board, which has over thirty editors worldwide.

Structural Engineering Conference

Academic staff and students of the School of Civil, Mining and Environmental Engineering recently delivered a total of six papers at the Australian Structural Engineering Conference (ASEC 2005) in Newcastle in September. Dr Alex Remennikov and Professor Brian Uy also chaired sessions at the conference. The conference was also attended by PhD student Mr. Nuri Elbasha and Visiting Associate Professor Salehi from Iran.



Professor Brian Uy, Dr Zora Vrcelj, (from UNSW and BE (Hons 1) graduate from 1998) & Dr Alex Remennikov in front of Newcastle City Hall which was the venue for ASEC2005

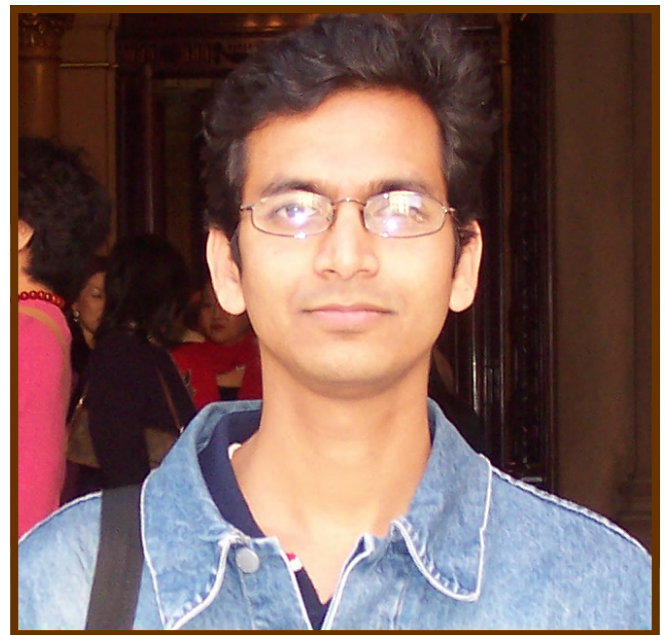
UOW Student Conference

The inaugural University of Wollongong Higher Degree Research (HDR) Student Conference was held at UOW on 29 September, 2005. HDR students had the opportunity to present their work to staff, peers and industry representatives throughout the day.

Two engineering students took out key awards at the conference. Mr. Behzad Fatahi won the Best Oral Presentation Award for the session on "Frontier Technologies" and Mr. Cholachat Rujikiamjorn won the Best Poster Award.

Student Profile

Digvijay Bagde is from the small, central Indian city of Nagpur. He completed his Bachelor Degree at Nagpur University and worked for a year in the CAD/CAM industry before coming to the University of Wollongong (UOW) to study a Master of Engineering Practice. Digvijay wanted to get to know the Australian way of life and also gain exposure to an international degree to further a career in consulting. He chose UOW because it is one of the top universities in Australia and he enjoyed his time at the University very much.



Diary Dates

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| 11 October | Postgraduate Research Committee |
| 11 October | School of MMM Safety Committee |
| 11 October | School of CME Safety Committee |
| 18 October | Faculty OH&S Committee |