Guest Editorial

Associate Professor Ernest Baafi

EXPLORE UNDERGROUND COAL MINING at http://www.undergroundcoal.com.au

Mining Engineering at University of Wollongong has a strong National and International reputation, and it receives substantial financial support from the world’s largest multinational mining companies such as Xstrata, Rio Tinto, BHP Billiton, and many others. Our Discipline Advisor in Mining is Associate Professor Ernest Baafi and he is this newsletter’s Guest Editor to tell you about one of our Faculty’s Mining Engineering’s many industrially funded projects. Here is his editorial:

Mines are a complex interacting system requiring many skills, such as mechanical, electrical, mining, environmental engineers, economists, constructive engagement of local communities, logistics, transport, shipping, etc. Much of Australia’s, and indeed, the world’s, coal, especially high quality metallurgical coal, comes from underground coal mines in Wollongong and elsewhere in New South Wales. A crucial part of these mines is ‘Roadway Development’ i.e. the building of underground roadways to service the large quantities of coal being mined from the mine’s ‘Longwall’. Sharing information about the complex technical and workplace issues arising from Roadway Development can provide mine operators with a huge advantage.

Prof Elena Pereloma wins Best Paper Award 2009

The Faculty of Engineering’s Prof Elena Pereloma, was one of the recent recipients of the Best Paper Award for 2009, which was awarded by Steel Research International- Europe’s premier steel journal.

Prof Elena Pereloma was a co-author of the winning paper entitled; "Effect of Bake-Hardening on the Structure-Property Relationship of Multiphase Steels for the Automotive Industry." The paper gained the most votes among Editorial and Advisory Board members, and the main selection criteria for the award is based on scientific quality. The co-authors included Ilana Timokhina and Peter Hodgson from Deakin University, Simon Ringer and R.K. Zheng from the University of Sydney.

This award was presented at the 7th Pacific-Rim International Conference on Advanced Materials and Processing (PRICM), on the 5th of August, 2010 in Cairns, Queensland. The award was presented by Prof. John Beynon, Dean of Engineering, Swinburne University who is a member of the Editorial Board of Journal Steel Research International. The Pacific-Rim International Conference on Advanced Materials and Processing is the 7th in a series of international conferences devoted to advanced materials and processing.

The Conference, is held every three years, and is jointly sponsored by the Chinese Society for Metals (CSM), The Japan Institute of Metals (JIM), The Korean Institute of Metals and Materials (KIM), Materials Australia (MA), and The Minerals, Metals and Materials Society (TMS). The purpose of this Conference is to provide an attractive forum for the exchange of scientific and technological information on materials and processing. This is the first time for the PRICM to be held in Australia.

In photo from left to right: Prof. John Beynon, Dean of Engineering, Swinburne University, Prof. Elena Pereloma, UOW, Dr. Ilana Timokhina, Deakin University, Prof. Peter Hodgson, ARC Laureate Fellow Alfred Deakin Professor, Deakin University.

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Mining academics at the University of Wollongong identified the potential for utilising the web as a means of developing the body of knowledge, and originally scoped the project as a roadway development website. It was then extended to include the Outburst website previously developed by the University of Wollongong (an outburst is when sections of the coal face are violently ejected) then further expanded to include all facets of underground mining, including a new longwall section.

The objective of the project was to develop a high class, professional website that could also be used as an interactive learning medium for mining engineering students. The content of the two existing websites was then extensively reviewed, updated and incorporated into the http://www.undergroundcoal.com.au website. Other content is still being developed and progressively loaded onto the site. A small editorial panel comprising mining academics and experienced mining professionals is responsible for developing the basic structure of the site and reviewing the content.

Gary Gibson, one of Australia’s most experienced mining consultants, and a mentor for this project, says the website provides.... “an invaluable opportunity to share developments and improvements in roadway development practice, to learn of emerging R&D and development of equipment and technology by original equipment manufacturers, and to network across the industry”. Located on a single domain website, this highly visual, interactive learning environment provides appropriate material for mining engineering students through to highly experienced practising mining engineers. It was developed by the University of Wollongong’s Centre for Academic Systems and Resources for the Faculty of Engineering’s Mining School with funding from the Australian Coal Association Research Program, which is the peak Industry research organisation funded by mine operators and owners.

In parallel with these activities, the research team led by Associate Professors Ian Porter and Ernest Baafi, has incorporated a mini search engine into the site which enables all resources related to coal mining practice to be readily searched by both title and content. Other features are continuing to be developed such as links to coal mining industry-related sites and resources, and an industry calendar of events.

This is an excellent example of modern IT being used to provide a great benefit to industry, to students, to specialists and non specialists. It combines the best of mining research and teaching to produce informative, accurate user friendly information to anyone wanting to know more about mining. We warmly invite you to explore the University of Wollongong’s http://www.undergroundcoal.com.au !

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**A/Prof Muhammad Hadi Participated at Civil Engineering Conference (CECARS) 2010**

The Faculty of Engineering’s A/Prof Muhammad Hadi participated in The 5th Civil Engineering Conference in the Asian Region and Australasian Structural Engineering Conference 2010 (CECARS) which took place from the 8-10th of August at the Sydney Convention and Exhibition Centre.

The event was hosted by Engineers Australia, together with the Australasian Structural Engineering Conference (ASEC 2010) and was a platform for the discussion the role of civil and structural engineers as leaders in both business and the community in the 21st Century. The theme for the Conference was Innovative Community Building which highlighted the important roles that engineering professionals contribute to Infrastructure. The conference allowed its participants to network with their colleagues and it also provided engineers with the opportunity to hear presentations from academia and other industry leaders.

A/Prof Muhammad Hadi presented his paper entitled “Modelling of High Strength Concrete Reinforced Columns Wrapped with FRP.” A/Prof Muhammad Hadi’s current and past students also had the opportunity to present a total of four papers. The presenters were Dr Nuri Elbasha (PhD UoW 2005), now Assistant Professor at Algharbi University, Libya, and research scholars Mr Eren Uz, Mr Thaer Saeed Alrudaini and Mrs Hua Zhao. The paper presented by Muhammad was co-authored by Mrs Maria Rashidi, who is currently a PhD scholar with A/Prof Brett Lemass.

In photo above: A/Prof Muhammad Hadi presenting his paper at CECARS in Sydney on August 10, 2010.
International Undergraduate Welcome Lunch

As a part of the University of Wollongong’s International Week 2010, the Faculty of Engineering hosted a welcome lunch on Thursday 26th of August, for all of its new International Undergraduate Students. During the lunch the Dean of Engineering Prof Chris Cook gave an official welcome to our new international students. Anji Phillips, International Coordinator with the Faculty of Engineering also welcomed the students, introduced them to some of the Academic staff, and explained to the students about where and who to go to within the Faculty if they need assistance. The other Academic staff present at the International Undergraduate Welcome Lunch included:

**School of Engineering Physics:**
A/PR Rodney Vickers, Sub-Dean Engineering

**School of Civil, Mining and Environmental Engineering:**
Prof Buddhma Indraratna, Head of School
Prof Timothy McCarthy
A/PR Shuqing Yang
Dr Cholachat Rujikiatkamjorn
Dr Long Nghiem

**School of Mechanical, Materials & Mechatronic Engineering:**
Dr David Hastie-Centre for Bulk Solids

Other Faculty staff present during the lunch included Mr. Ron Marshall, Operations and Workshop Manager, Lorelle Pollard, Administration Manager as well as a number of the Faculty Administration staff.

A number of the third year Engineering Society Students were also present during the lunch to welcome our International students, and to speak to them about the Engineering Clubs and Societies opportunities available to them at the Faculty. Shaza Raini, a 3rd year Bachelor of Environmental Engineering Student was introduced at the lunch as the mentor for international students. As the International Student Mentor, Shaza’s role is to assist students in a non-formal way if they come across any university or non-university related problems during their studies. In her welcome address, Shaza encouraged students to approach her if they simply need someone to talk or if they need assistance with any specific issues that they may encounter during their studies at UOW. As an international student herself, Shaza has experienced many of the same problems that international students come across while adjusting to life in a new country and to a new study environment at UOW.

For any international students who would like to talk to Shaza, she can be contacted at: sr632@uow.edu.au
Global Highway 2010

During week 5 (23rd – 27th August) the University of Wollongong hosted its International Week 2010. There were many exciting events organised during the week which included; live music performances, Cultural Performance Evening, Cultural Dress Day, UOW Clubs Day, The Global Highway, Market Alley, Faces and Places photographic competition, a Study Abroad Networking Event and International Trivia Night. UOW’s International week is an opportunity for all students, both domestic and international to celebrate the University of Wollongong’s rich multicultural community by participating in the week’s many culturally diverse events and festivities.

One of the more popular attractions of the International Week festivities is the Global Highway which took place on Thursday, August 26th from 10am – 2pm. During the Global Highway students from 20 different countries set up stalls and shared their culture through different activities, cultural dress, music and food. The country stalls started near the UniBar and continued past the McKinnon Building. UOW’s students and staff were encouraged to ‘travel’ between each country and to collect a stamp on their passport at each destination. Lots of great prizes were on offer for those that earned the required amount of stamps to complete the full Global Highway. The countries that hosted a stall this year were America, Australia, Bhutan, China, England, Germany, India, Indigenous Australia, Iran, Japan, Kazakhstan – Kyrgyzstan, Kenya, Korea, Malaysia, Pakistan, South Africa, Spain, Sri Lanka, Thailand and Vietnam.

The Faculty of Engineering has a diverse community of international students representing a wide range of countries from all over the world; therefore it would only make sense that some of our very own international students participated in the Global Highway event! The Sri Lankan stall in particular was organised mainly in part by Engineering PhD students studying in the area of Civil, Mining and Environmental Engineering.

The Sri Lankan stall preliminary focused on promoting tourism and increasing awareness about Sri Lanka. Two of our Engineering PhD students; Nadeesha Kuruppu and Udeshini Pathirage commented that the Global Highway is a great opportunity for them to share their culture and traditions with other students while enjoying a short break from their studies. This is the first year Udeshini to participate in the Global Highway at UOW and the second year for Nadeesha to be involved in the International week celebrations. Another Engineering PhD Student, Wuditha Premadasa remarked that he enjoys the experience of the Global Highway event and he feels privileged to share the culture and traditions of his home country of Sri Lanka with other students and staff at Wollongong. This is Wuditha’s second time participating in the Global Highway and he did much of the organising for this year’s Sri Lankan country stall.

This is the fifth year for the Global Highway event at the University of Wollongong, and as with other years, the event is organised and coordinated with a lot of hard work and dedication by the students living at the UOW residences.

For more information about UOW’s Global Highway, you may access the UOW website at the link:


In photo above from left: Wuditha Premadasa, Chandrasiri Kumara, Dr. Cholachat Rujkijatkamjorn, Nayoma Tennakoon, Rasika Athukorala, Prof. Buddhima Indraratna, Shiran Gunasena, Udeshini Pathirage, Nadeesha Kuruppu, Rushan Dayarathe, Imani Wijerathna, Pradeepa Jayaratne