

# ChemEng *focus*

TEACHING AND RESEARCH NEWS FROM THE  
DEPARTMENT OF CHEMICAL ENGINEERING,  
MONASH UNIVERSITY

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## Martin Rhodes' retirement

A retirement function was held for Prof Martin Rhodes, and his wife Val, on 11th June 2008, at the Monash University Staff Club. The crowded event was attended by 110 people, including current and past Monash staff and students, many alumni and close industrial partners.

The guest of honour gave a short speech and presented a final personal screening of "The Igor has landed" - a short "mockumentary" of a dangerous space exploration



of a large fluidized bed rig, produced by two of Martin's former PhD students.

Martin and his wife Val are heading off into the Australian wilderness on a two year trip in a 4WD, where they plan to spend several months working as station hands. They were presented with a gift from the department for the trip—a GPS.

We wish them well on their new adventure.

### Inside this issue:

Engineering Leadership Program	2
Engineering Awards Night	3
50th Anniversary research award	3
UNESCO-L'ORÉAL Women in Science	4
Alumni Profile: Joel Taylor	5
Professor Pauline Doran joins	6
News in Brief	6

## Meet the new Head—Prof Paul Webley

Professor Paul Webley has had an international career. Originally from South Africa, Paul studied Chemical Engineering at University of Natal, and then obtained his PhD at MIT, USA. He was Assistant Professor and Director, MIT School of Chemical Engineering Practice for a few years, before working for Air Products and Chemicals, in Pennsyl-



vania, in process R&D. He joined Monash in 1996 and leads an active research group on adsorption including being part of the CRC for CO<sub>2</sub>. Most recently, Paul was the Associate Dean of Research for the Engineering Faculty. Paul is now Department Chairman, leading the department's efforts in both education and research.

## Flying high—Engineering Leadership Program

Monash University is equipping engineering students to be the next generation of high flyers through a new leadership program that broadens the traditional skills base of engineers. It comes as Engineering, one of the oldest Monash faculties, attracts strong demand from students.

At the beginning of the three-year leadership program students' strengths and weaknesses are identified, helping them to develop self awareness and their individual leadership style.

The program also encourages a range of skills like critical thinking, problem solving, communication, sustainability, ethics, innovation, entrepreneurship, globalisation and change management. Students also get the opportunity to shadow and work with professional engineers in their workplace.

Gary Codner, Associate Dean (Teaching) in the Faculty of Engineering, said the leadership program had been applauded by industry executives because it was helping to produce adaptable, innovative, responsible and flexible graduates.

"To be a great engineering leader you need not only the technical skills, but

also to possess vision, exceptional communication and project management skills, and the ability to manage and inspire people," Associate Professor Codner said. "We're providing our students with these skills and industry contacts and an understanding of what's required to be successful in their chosen field."

The leadership program is currently offered to the highest-achieving Year 12 students entering the faculty, who also receive a scholarship worth \$6000 per year for the duration of their studies.

Dean of Engineering Professor Tam Sridhar said the program was one factor that had helped make Monash engineering courses the best in Australia and attract the brightest students. The study score required to study engineering at Monash in 2008 was 91.3, more than five points above any other engineering course in Victoria, and the highest ever cut-off.

Professor Sridhar said it was all part of a plan to ensure Monash graduates were equipped with the technical and non-technical skills they needed to be the next generation of engineering leaders.

*Report: Ryan Pedler , Monash Magazine*

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## Company participation?

Would your company like to offer any of the following? Then send a email to either [wren.schoppe@eng.monash.edu.au](mailto:wren.schoppe@eng.monash.edu.au) or [Lilyanne.Price@eng.monash.edu.au](mailto:Lilyanne.Price@eng.monash.edu.au) with the details and they will get back to you shortly.

- \* Offering Vacation Work Experience to our undergraduate students?
- \* Offering a Graduate Position (Undergraduate and Postgraduate)?
- \* Speaking at an Undergraduate lunch time seminar about your company?

## Engineering Awards Night

The Annual Engineering Awards Night celebrates the achievements of our top students and graduates. Held annually in May just prior to the graduation ceremony, the event is a formal dinner attended by the faculty's top students, their families, academic staff and award sponsors.

The Yong Cher Biau Memorial Award, awarded to the top student in the third year of the Chemical Engineering course was presented to Ms Kate Frueh by Professor Carlos Tiu.

The Owen Potter Award for Chemical Engineering Excellence, awarded to the top Graduate in Chemical Engineering was presented

to Ms Candice Levin by Professor Dong Chen.

The 2007 Early Career Researcher Award was awarded to Dr Huanting Wang. Finally, the 2007 Deans Award for Exceptional Performance by a member of the General Staff was presented to Mrs Jill Crisfield. Congratulations to all our winners.

*The Annual Engineering Awards Night celebrates the achievements of our top students and graduates.*



**Ms Kate Frueh was presented with the Yong Cher Biau Memorial Award by Professor Carlos Tiu**



**Ms Candice Levin was presented with the Owen Potter Award, by Professor Dong Chen**

## 50th Anniversary Research Awards

It was a proud and ceremonious occasion for Monash academics who were honoured at a research awards evening at Government House. More than 140 guests, including dignitaries, Foundation professors and their families, gathered for an awards night in the opulent State Drawing Room at

Government House in Melbourne on 18th August. Fifteen Monash academics received 50th Anniversary Research Awards acknowledging the exceptional contribution they have made to their field of research and the community over the 50 years of Monash University's existence.



**Emeritus Professor Owen Potter** (second from left, back row) was nominated for his work in fluidised reactors and drying which continues to make an impact on the development of technology to reduce emissions from brown coal.

## UNESCO-L'ORÉAL Women in Science Fellowship winner joins Monash

Dr Penia Kresnowati has joined the department as a postdoctoral research fellow in 2008, after winning a prestigious international Women in Science Fellowship. She will be researching Bioprocess technology: conception of a bioreactor prototype for the production of stem cells.

Dr. Kresnowati received US\$40,000 in financial assistance from the United Nations Educational, Scientific and Cultural Organization (UNESCO) as part of a women-only fellowship program to conduct her research. "For Women in Science", an annual program supported by UNESCO and cosmetics manufacturer L'Oreal, is designed to encourage female scientists worldwide. The fellowship starts in 2009, but she has started at Monash in 2008 after also winning an Endeavour fellowship.

Penia is the only Indonesian to receive the UNESCO-L'OREAL fellowship this year, along with 15 scientists from other countries, out of 1,500 applicants worldwide. Chairman of the National Commission for UNESCO, Arief Rahman, said Penia deserved the fellowship because of her original research idea.

"Her idea of developing healthcare products from stem cells is excellent.

The results of this research will benefit all humanity," he said.

"I had never expected that I could achieve this much since this is my first time taking part in an international-class contest," said Penia, 30, who holds a doctoral degree in bioprocess technology from Delft University of Technology, the Netherlands.

Penia finished her bachelor's degree in 1999 at Bandung Institute of Technology (ITB) Indonesia, with flying colors, and worked as a lecturer's assistant in the Chemical Engineering department at ITB.

In 2000, she moved to the Netherlands with her husband to undertake a magister degree in Biochemical Engineering at



**Dr Penia Kresnowati, 2008 UNESCO-L'ORÉAL Women in Science Fellowship winner**

"My research will involve finding the most suitable conditions to proliferate and grow stem cells using bioreactors," she said.

"Once I succeed in developing the cells, I will use them to create affordable health products." She will collaborate with stem cell experts at the Australian Stem Cell Center.

"I hope this award will inspire all scientists in Indonesia, especially women, to keep conducting research," Penia said.

Delft University of Technology. After completing the magister in two years, she continued her studies in Bioprocess Technology at the same university.

Finishing her doctoral degree at age 30, she became the youngest lecturer to hold a doctoral degree at the ITB's Chemical Engineering department.

She said a successful life involved "being happy and grateful for everything achieved".

(Source: Jakarta Post, 19 March & 9th July 2008)

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## Alumni Profile: Joel Taylor

**Degree: BE/LLB**

**Graduating Year: 2002/4**

After graduating from Chemical Engineering in 2002, I spent a couple of years working in private practice, but I found the work I was doing fairly uninspiring. I thought to myself that there must be more to life than a dead-end 9 – 5 job in Ballarat, so I bought a one-way ticket to London and set out to discover what else life had to offer.

After arriving in London on a hot Sunday afternoon in early July 2006, I had 2 job offers by the Friday for starting on the Monday. I decided that living in dirty, busy, expensive London wasn't for me, so I took the job I was offered in Dunstable, Bedfordshire. It was administrative work for South Beds District Council — hardly career defining work, but it paid the bills while I was looking for something better. After 4 weeks in Dunstable, I couldn't wait to get out and a week later I started another job, this time in Northampton, in the East Midlands. While marking time in Northampton, working for Northants County Council, I was chatting to a colleague who mentioned the idea of a PhD. Since I didn't feel like doing any work at the time, I had a look at the website of the Department of Chemical Engineering at Cambridge University, which was only 1½ h drive from Northampton.

On the list of funded PhD projects, I saw a project on novel conching studies in chocolate manufacture. I have always liked eating chocolate, so the idea of spending 3 years researching the stuff seemed like a good idea.

After visiting the department one September afternoon, I decided to apply for the project. After a painful amount of paperwork, I was accepted and started in January 2007.

I came for the chocolate, but the Cambridge student life-style is the best thing about my PhD. Every student is a member of a college, in my case Peterhouse, the oldest and 2nd most conservative college in Cambridge. There are formal dinners, parties, sporting activities, concerts and other functions occurring every day. I have played cricket, football, table tennis, athletics, pool and croquet for

erty for another 3 years. I am paid just over £1000 per month for my living expenses, from which I have to pay rent and food. This isn't too bad, but it doesn't leave a lot of room for discretionary spending: Cambridge is one of the most expensive cities in England. A pint (0.5 L) of beer costs £2.30 and rent is about £400 per month.

Despite this, I'm loving Cambridge and wouldn't trade it for anything. I feel very much at home here — culturally Britain and Australia are very similar. The weather in Cambridge is the same as Ballarat except we get a bit more rain. I do miss



Joel Taylor outside Cambridge, UK

the college. We have a science society called the Kelvin Club, which I am in charge of. I am also involved in the university trampolining club, croquet club and athletics club. It's quite easy to play sport at a high level here because the English are so rubbish at sport.

The only negative aspect of doing a PhD is being in pov-

being able to go down to Beach Road oval to watch the footy — soccer is not a spectator sport — but it's a small price to pay.

I just need to work out how to get a fellowship to stay after I finish my PhD.....

My advice for undergrads applying for jobs is: Student life is so much better than the real world!

*"I have always liked eating chocolate, so the idea of spending three years researching the stuff seemed like a good idea."*

Would you like to be featured in a future Alumni profile issue? Please email [lilyanne.price@eng.monash.edu.au](mailto:lilyanne.price@eng.monash.edu.au)

## Professor Pauline Doran joins the Department

Professor Pauline Doran has recently taken up a joint appointment between the School of Biological Sciences and Faculty of Engineering.

Formerly Head of School of Biotechnology and Biomolecular Sciences at UNSW, Prof Pauline has recently moved to Melbourne to return to research in biological engineering. Her research includes tissue engineering of



cartilage and bone; application of stem cells for tissue engineering; development of bioreactors for tissue

engineering; development of bioreactors for plant cell and organ culture; the production of quantum dot nanoparticles using cell cultures; and production of foreign proteins using cultured plant cells and organs.

She has written and edited several books including an undergraduate textbook on Bioprocess engineering, and is currently teaching the 4th year elective CHE4171 Biochemical Engineering.

## NEWS in brief.....

- Chemical Engineering is holding a “Chemical Engineering Meets Industry” evening on Wednesday 27th August at the Monash Conference Center, Collins Street, Melbourne. This is an opportunity for practicing engineers from Melbourne industries employing chemical engineers and the staff of the Department to get to know each other better and to explore ways of improving relationships. If you would like to be invited to future events, please let us know.
- The Melbourne consultation session on IChemE’s Energy and Water Roadmaps was held in July. Discussions on the energy roadmap were led by three Monash staff—Dr Gareth Forde, Dr Andrew Hoadley and Dr Karen Hapgood—reflecting Monash’s leading role in the future of energy. Current active projects include clean coal, carbon sequestration, renewable energy, and biofuels.
- Masters student Ms. Thanh Nguyen was awarded a Rachel Human Bursary by the Australian Federation of University Women in May 2008.
- Dr Karen Hapgood has been nominated to the Therapeutic Goods Committee as a person with expertise in pharmaceutical manufacturing for a 3 year term. The TGC is an expert committee to advise on standards for therapeutic goods, and principles to be observed in the manufacture of therapeutic goods for human use.



### Dept Chemical Engineering

Monash University  
PO Box 36  
Clayton VIC 3800

Phone: +61 3 9905 3555

Fax: +61 3 9905 5686

E-mail:

[lilyanne.price@eng.monash.edu.au](mailto:lilyanne.price@eng.monash.edu.au)

[karen.hapgood@eng.monash.edu.au](mailto:karen.hapgood@eng.monash.edu.au)

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