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## TRAINING APPRENTICES IN MECHANICAL ENGINEERING

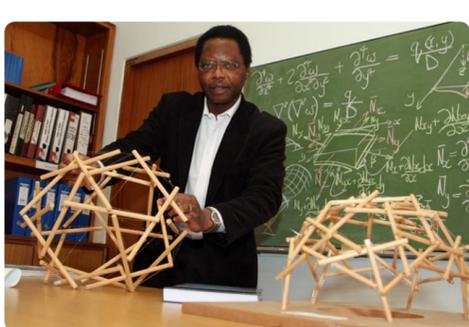
Glen Newins, chief technical officer in the Department of Mechanical Engineering workshop, is passionate about training young people and is delighted that UCT agreed to run its first apprenticeship programme in his workshop. Newins' son recently completed his training in fitting and machining through an FET college, but found it impossible to get an apprenticeship position.



Industry is no longer offering internships to newly qualified artisans and this has left a huge vacuum in the training market, Newins explains. He was then interested to see if he could start an apprentice programme at UCT. "This will not only assist UCT in growing their own timber, but will also assist the government in their scarce skills programme," said the Dean, Professor Francis Petersen. The average age of the technicians in the engineering workshops at UCT is around 53 years.

Working with the Manufacturing, Engineering and Related Services Sector Education and Training Authority, three apprentices were selected and they will spend three years in the workshop where they will gain practical experience and marketable skills on a wide variety of machines.

"This is only the beginning," says Newins. "I hope that the programme will grow and that other workshops around campus will see the benefit of training apprentices."



## INTERNATIONAL FELLOWSHIP FOR PROFESSOR ZINGONI

Alphose Zingoni, professor of structural engineering and mechanics in the Department of Civil Engineering, has been elected as a Fellow of the International Association for Bridge and Structural Engineering (IABSE). The IABSE boasts about 4 000 members in 100 countries. Zingoni joins an elite group of only 150 IABSE members worldwide who have been named Fellows.

The fellowship recognises his significant contributions to the field of structural engineering on the world stage, through his own research and scholarship - which enjoys considerable international recognition by peers - and the prominent role he has played to promote the exchange of the latest findings among researchers.

Over the past 15 years, Zingoni has been investigating the behaviour of shell structures, and his 1997 text, Shell Structures in Civil and Mechanical Engineering, is now used in more than 60 countries. He has also pioneered work on the use of group theory in the study of problems in structural mechanics.

Zingoni is modest about this latest recognition, and acknowledges UCT in providing an atmosphere that is conducive to research and scholarship. He's hoping to do the same for the next generation of engineers. "One of the responsibilities of Fellows of the IABSE is to act as role models to the younger generation, and encourage them to excel, and I hope that this award will give my students added inspiration," he says.



## NEW ENGINEERING BUILDING

The Civil Engineering laboratories which were housed in the Snape Building have been demolished and the ground has been prepared for the foundations of the new building. The laboratories have been temporarily relocated to the Maintenance Building. There have been a few delays in the start of the construction of the new engineering building but progress has been made and the new building should be completed by the end of 2012. The Faculty is very proud of the development and design of the new building. There is currently no formal green rating for educational buildings, but the University has undertaken to design the building to be energy and resource efficient.

The original Snape Building will then be refurbished and will consist of a number of new learning studios which will allow for new and innovative ways of teaching – targeted at increasing student throughput. The refurbishment should be completed by the middle of 2013.

The fundraising campaign for the building is ongoing and we are very thankful to a number of industry partners who have committed themselves to supporting the campaign.

## ALUMNI UPDATE

- Andrew Kirby obtained his BSc Mechanical Engineering in 1988. In January 2011 he was appointed as marketing and planning GM for Lexus at Toyota Motor Corporation in Japan. He was previously sales and marketing senior vice-president for Toyota South Africa Motors. In his new position, Kirby will oversee global marketing and planning initiatives for the Lexus brand. He will be based in Nagoya, Japan.
- Portia Gama obtained her BSc Electrical Engineering in 2008 and is busy completing her Master's in Engineering Management. Portia was the first recipient of the EBE Postgraduate Alumni Dr Ntokozo Mthembu. In February 2011, Portia was selected for an internship at the United Nations in New York. She has been organising seminars, panel discussions and book launches with NGOs, other UN agencies, politicians, diplomats and leading academic experts. She is very grateful that she has been able to continue with her Master's degree long distance and hopes to graduate in December 2011.
- Nombulelo (Pinky) Moholi obtained her BSc Electrical Engineering in 1984 and in April 2011 she became the new CEO for Telkom SA Ltd.
- Maboko Rosey Sekese (nee Machete) obtained her BSc Electrical Engineering in Telecommunications in 1994 and in June 2011 she was appointed as the Director General of the Department of Communications.
- Basil Brink obtained his Bachelor of Architecture in 1976. In October 2010 he completed a degree of Doctor of Philosophy in Engineering Management. Previously he had been a senior lecturer in the Town & Regional Planning Department at the University of Johannesburg. In April 2011 Basil joined UNISA as a postdoctoral research fellow.

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## DEAN'S MESSAGE



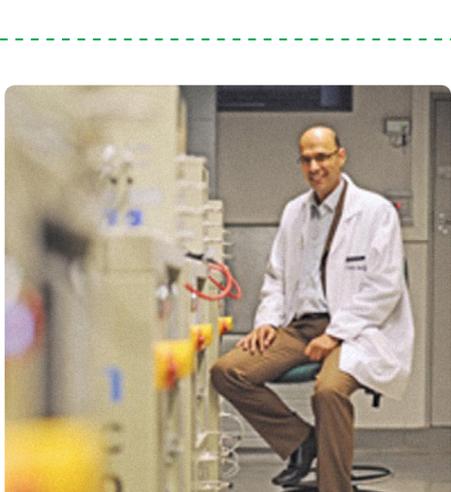
There have been a number of new developments in the Faculty since I last wrote to you in June 2010. Earlier this year we saw the start of a new Master's programme in Radar. It was recognised that there was a shortage of radar and electronic engineers in South Africa and there was a need to produce engineers with broad skills and a wide knowledge of radar as a system. Professor Mike Inggs from the Department of Electrical Engineering and the CSIR, in conjunction with international partners and industrial sponsors, established the Master's programme, which will provide essential skills to the Square Kilometre Array flagship project of the Department of Science and Technology.

In September 2010, the Engineering Council of South Africa visited the Faculty for the five-yearly accreditation visit. For the first time the visit included representatives from the Washington Accord and I am delighted to report that the engineering degrees were awarded accreditation. Earlier this year, Architecture had an accreditation visit by the South African Council for the Architectural Profession, together with the Commonwealth Association for Architects, and they too received accreditation for the next four years.

A curriculum task team has been set up under the leadership of the Deputy Dean responsible for undergraduate education, Associate Professor Neil Armitage. The team has been tasked to address some of the key challenges which the faculty faces. These include the National Senior Certificate, different expectations of the accrediting bodies, diversity of the student body and throughput rate in the faculty.

I wish to sincerely thank the EBE alumni who continue to play an important role in the Faculty by giving up the time to be guest lecturers, external examiners, members of advisory boards, mentors and tutors, and by offering bursaries and vacation work to our students. Your input and advice is crucial to the ongoing development of the Faculty.

The newsletter aims to keep you up to date with what is happening in the Faculty.



## INTERNATIONALLY RENOWNED EXPERT JOINS CHEMICAL ENGINEERING

The UCT-based National Hydrogen Catalysis Competence Centre in the Department of Chemical Engineering has a new director, Dr Olaf Conrad, who officially took the reins in January 2011. Before joining UCT, Dr Conrad was head of the division of the fuel cell department at Next Energy in Oldenburg, Germany.

Dr Conrad is an internationally renowned expert on polymer electrolyte membrane (PEM) fuel cells, with many years of experience in the development of electrocatalysts and their integration into membrane electrode assembly. "These are the skills that were absent from the centre," said Professor Jack Fletcher, head of the Department of Chemical Engineering and director of the Centre for Catalysis Research at UCT.

Dr Conrad began his scientific career at the University of Münster, Germany, completing a doctoral thesis on the topic of high-temperature melt syntheses and the analysis of the crystalline structure of I-III-VI aluminum compounds. Later he completed postdoctoral studies in Finland and the US as a recipient of the Feodor Lynen Research Fellowship at the Alexander von Humboldt Foundation.

In his subsequent position as research chemist at the corporate research division of the Engelhard Corporation (today part of chemical company BASF) in the US, Italy and Japan, he helped develop and launch platinum electrocatalysts for fuel cells.

Asked about the plans for HySA/Catalysis, Conrad mentions firstly that it's a joy to work within an already established infrastructure. "Engineering at UCT is top of the line in infrastructure, competence and academic staff.

"HySA/Catalysis' mandate, in keeping with that of the Department of Science and Technology, is that South Africa should build the competence base to create products that are homegrown, and so bring investment to South Africa by setting up businesses that use our mineral wealth to create higher, value-added opportunities. Human capital development is key."

Conrad adds: "When I started chemistry I hoped that one day I could use it for something that benefits many people. This wish was fulfilled in the opportunity to contribute to solving an energy problem and work in a country that is an emerging market that's come through change, and now wants to make the pursuit of happiness true for all."

## FACULTY HIGHLIGHTS

- Dr Azeem Khan, a senior lecturer in the Department of Chemical Engineering, received the Kambule NRF award as a distinguished young black male researcher over the past two to five years. He was recognised for his contribution to the understanding of industrial energy efficiency and the design of small-wind-generator and energy storage systems
- Professor Alison Lewis from the Department of Chemical Engineering received the Champions of Transformation Capacity Development at South African Higher Education Institutions award from the National Research Foundation. She was recognised for her outstanding work in actively training, fostering and mentoring a number of black and female students in Industrial Crystallisation Research.
- Emeritus Professor Cyril O'Connor received the Brigadier Stokes Memorial award for the outstanding and unique contribution that he has made to the Southern African mining industry over a long period of time. This is the most prestigious award presented to an individual by the Southern African Institute of Mining and Metallurgy.
- Professor Jo Noero from the School of Architecture, Planning and Geomatics received UCT's Creative Works Award at the June graduation ceremony. The award was made specifically for Noero's design of the Red Location Museum of Struggle, located in Red Location, New Brighton, in the Eastern Cape.

## RETIREMENTS

- After 37 years at UCT, Professor Dave Dewar from the School of Architecture, Planning and Geomatics retired at the end of 2010. In April 2011, he was honoured by the City of Cape Town by being awarded the Mayor's medal for social affairs and services for his great contributions to the study of planning in South Africa. He is now a Senior Scholar in the Faculty, which means he will continue to produce publications, supervise postgraduate students and mentor young staff members.
- Professor Barry Downing from the Department of Electrical Engineering joined UCT in 1983 and after 27 years retired at the end of last year. However, the Faculty was delighted that he agreed to return to head up the department for the next two years.

## CONTINUING PROFESSIONAL COURSES

The Continuing Professional Development unit is affiliated to the Faculty and is accredited to run courses that will be a list of the CPD courses for 2011 second semester.

- Energy Modelling and Analysis
- Placing design central to urban decision making
- Commercial property valuation
- Radar and electronic defence courses
- Transport studies
- Urban infrastructure design and management courses
- Fundamentals of Project Management
- Principles of Project Management
- Property Development for Beginners

Dates, application forms and more information on the courses can be found at [www.cpd.uct.ac.za](http://www.cpd.uct.ac.za)