

## SACI NEWS

### PRESIDENTS COLUMN

2009, JANUARY, VOLUME 1

2009 is now upon us. The SACI Executive and Council wish all SACI members a successful year filled with many achievements.

This newsletter contains an update on some events that took place in late 2008. In particular, the SACI Convention proved to be a great success with a high standard of presentations, both in the oral and poster formats. Poster presentations in SA have now reached a high standard and it is clear that students put much thought into the content and visual effects displayed in their posters. The conference served its purpose of allowing the chemical community to display their recent research successes to their colleagues. Len Barbour and his team are to be congratulated on a fine job.



Also in the newsletter: an article on Prof Tebello Nyokong on her outstanding achievement; an update on the Programme calendar; and some general articles of interest to the SACI members

Enjoy the read

Prof Neil Coville  
SACI President

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### **SACI Convention, University of Stellenbosch**

The SACI Convention was held in Stellenbosch in December 2008 and the organizers not only put on a wonderful event but also provided great weather. The event proceeded smoothly and no apparent hitches occurred.

The plenary lectures proved informative, and the speakers certainly gave the SA audience a 'feel' for some cutting edge chemistry that is taking place in SA



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and in the world. In general the standard of the non plenary oral presentations was good but it is still clear that some speakers have not learnt the art of communication. Speakers, who have been 'taught' how to present data, gave excellent talks. Especially pleasing were the presentations made by many of the students. The new generation of young SA chemists certainly can hold their own!

The standard of poster presentations in SA is very high and those on display in Stellenbosch reflected this standard. A good range of aesthetically and chemically sound presentations were made, mainly by the students.

The extra-curricular programmes also proved to be well organized. Lots of wine tasting!!, lots of good eats and the Banquet at Moyo proved to be a highlight for our overseas (and local) visitors.

An unusual innovation used at the oral presentations was the provision of 'electronic clocks' to keep speakers to their allotted times. This approach is an innovation that could/should be used at ALL future conferences. It ensures that speakers keep to time AND it allows speakers to time their talks more efficiently.

### **Head of Departments (HOD) meeting , SACI Convention, December 2008**

A meeting of Chemistry HODs was held at the recent SACI Convention. This event was well attended by about 13 HODs.

#### **Some issues discussed/resolved:**

1. It was proposed that the SACI office be used as the focus point for spreading information between the different Departments/Schools of Chemistry in SA. Laila has a list of all HODs.
2. An appeal was made to HODs to nominate a staff member to act as the SACI representative for the School. In this way it is hoped that school activities (talks, staff awards, events etc) could be passed on to the SACI office for advertising purposes.
3. SACI awards. SACI makes numerous awards to students; some of these require nominations from the Department/School. The SACI rep could assist the HOD and ensure students do not lose out being nominated for these awards.
4. The same applies to awards to professional chemists



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**SACI/DST/RSC Innovation roadshow**

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SACI, the DST and the RSC (UK) put together a series of workshops on Innovation. Three workshops were organized – in Johannesburg, Durban and Stellenbosch. These took place in the last week of November, 2008. The events followed a similar format at the three different venues and typically involved four speakers from the RSC, one from the DST and two from the local SA community.

The talks given by all the speakers gave insights into the vision of transforming ideas into 'hard' products and in so doing creating companies that employed chemists and made money. The talks were entertaining and revealing. Attendance at the events was reasonable at the Durban and Johannesburg events; poor in Stellenbosch. Lesson learnt – don't hold events on a Sunday!

One of the themes of the workshop was: how to create a more entrepreneurial cohort of post-graduate chemistry students. In the UK more students with post graduate degrees in Chemistry now want to work in small companies than in big companies. This change has taken place in the last decade. To achieve this change in SA, students will need to be given different skills set from that currently available. The issue then will be to establish how to achieve this change, within a SA context.

A task team will be set up in early 2009 to follow up on the ideas that arose from the workshops. It is hoped that some concrete proposals will be established for implementation in 2010.

### **Division news: New Chair of the Analytical Division of SACI**

Congratulations to Dr Nelson Torto on becoming the new Chair of the Analytical Division of SACI. Dr Torto is on the staff of the Chemistry Department at Rhodes University. We wish him well in his new position as he resuscitates this Division. Please contact him if you have any queries/comments on this Division.

### **Correction**

In the December edition of the Newsletter the caption showing the student receiving an award from Prof Green was incorrect. It should have read: "At a recent function in the Chemistry Department at the UWC, Prof I R Green, currently the Vice President of SACI, handed the James Moir Medal (2007) to Ms Shanielle Botha currently an MSc student in **SensorLab**."



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New Royal Society of South Africa Fellows for 2008 2009, JANUARY, VOLUME 1

In late 2008 a number of chemists were elected to be fellows of the RSSA:

Prof L J Barbour, Research Professor in Nanostructured Functional Materials, Department of Chemistry, University of Stellenbosch  
Prof M T Davies-Coleman, Head of Department of Organic Chemistry, Rhodes University  
Prof L Klumperman, Research Professor, Department of Chemistry & Polymer Science, University of Stellenbosch

Our congratulations to them on becoming Fellows of the RSSA

### SA scientist (Professor Tebello Nyokong) one of the top five female physical scientists

#### *South African scientist Professor Tebello Nyokong scoops 2009 L'ORÉAL-UNESCO For Women in Science Award*

Announced on November 10, South African scientist Professor Tebello Nyokong has become the first South African scientist to win the L'ORÉAL-UNESCO award for women in science for research in physical sciences.

Now in its 11th year the awards honour exceptional women in science from around the globe. Each year one laureate is selected from five world regions. Professor Nyokong is the laureate for Africa and the Arab states for 2009.

This year, the theme of the awards is "Physical Sciences", and the Laureates were selected through nominations by a network of nearly 1,000 members of the international scientific community. Diverse in origin, determined in nature, and extraordinary in intellect, the 2009 Laureates reflect the programme's mission: change the face of science and support the advancement of women in the scientific field.

Based at Rhodes University, one of South Africa's leading tertiary institutions, Nyokong was honoured for her work on harnessing light for cancer therapy and for environmental clean-up.



L'ORÉAL-UNESCO women in science laureate Professor Tebello Nyokong. Photo by Cathy Pinnock.

### Versatile molecules

Nyokong's research centres around compounds known as porphyrins. These are highly coloured compounds; the blue dye used in jeans are based on porphyrins, while blood owes its red colour to haemoglobin, also a porphyrin. With immense potential as catalysts of chemical and biological reactions they have found widespread applications. Porphyrins have been used as potent



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therapies for cancer and have been used in developing highly sensitive sensors for detecting pathogens. Owing to their broad catalytic nature and optical properties, porphyrins have also been used in cleaning of polluted water. The real trick is turning these applications into a reality. By altering the chemical structure of these compounds, through changing the metal centre, adding substituents or coupling them with enzymes or nanoparticles such as quantum dots it becomes possible to finely tune and manipulate the properties of these molecules. And it is here where Nyokong, the NRF/DST Chair in Medicinal Chemistry and Nanotechnology at Rhodes University has led the field, pushing the frontiers of porphyrin based research in a career spanning almost thirty years.

Porphyrin based cancer drugs developed by Nyokong and her team over several years are currently in research trials in South Africa. Research in early warning systems for diseases and environmental toxins, has resulted in the development of several sensors, notably the most sensitive detection system yet developed for the neurotransmitter nitric oxide. As director of the DST/Mintek Nanotechnology Innovation Centre -Sensors based at Rhodes University in South Africa she is continuously pushing the boundaries with current research efforts aimed at targeting and detecting cancer causing agents *before* they can do harm in the human body.

### A wall of awards

Nyokong's office walls are covered in photos and awards, having been the recipient of just about every major national award in South Africa including the Order of Mapungubwe, bestowed on her by the president of the country, the Shoprite/Checkers Woman of the Year award for science, and this year the 12th annual City Press/Rapport Prestige Award as one of the "Ten Women of Excellence" in South Africa. Closer to home, at Rhodes University she was the winner of the Vice-Chancellor's Distinguished Senior Research Award in 2003, being not only the top publishing scientist at the university but one of the top publishing scientists in the country.

Professor Peter Clayton, Deputy Vice-Chancellor for Research at Rhodes concurs. "It is difficult to imagine a scientist who has achieved more than Professor Nyokong in recent years in terms of productivity across the full range of scientific achievement: her outstanding contribution to the advancement of science, her international collaboration, her enviable publication record, her capacity building with young scientists, her promotion of the public understanding of science, and her contributions to the national system of scientific development. What she has achieved is quite staggering. She literally oozes passion for science – doing it, teaching it, promoting it, financing it, and applying it."

Now judged for her profound impact on the global scientific knowledge economy in physical sciences by an awards jury made up of Nobel Prize laureates including Nobel prize for Chemistry 1999 recipient Professor Ahmed Zewail (who serves as the Jury President) and Professor Christian de Duve, who received the Nobel Prize in Medicine 1974, she and the four other winners will travel to Paris in March 2009 to each accept the award and the generous prize money of close to ZAR 1 million.

### Humble scientist

Those close to Nyokong will know that like the molecules she works with, these accolades have simply catalysed her to reach greater heights in research, and this award will be no different. And her students know only too well that this humble scientist will continue to deflect attention away from herself and onto her students. In fact, the night Nyokong received the phone call in early October breaking the news of this award to her, she was at a university event initially planned to honour her recent scientific achievements following a local award which was bestowed upon her. However, Nyokong had insisted instead that the event rather be held in honour of her former and



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present postgraduate students.

As a representative of this group of former and current students, we hope that this time she will accept this award for what it is and for who she is - an outstanding role model to a new generation of scientists and as one of the five most outstanding women scientists in physical sciences worldwide.

**Dr Janice Limson**

*\* Dr Janice Limson is the editor of Science in Africa magazine, and the Head of Biotechnology at Rhodes University in South Africa. Graduating from Rhodes in 1999 she was Professor Nyokong's first PhD student.*

### Conference Programme

- 1) The 8<sup>th</sup> International Symposium on New Trends in Chemistry and 2<sup>nd</sup> Congress of the Federation of African Societies of Chemistry (FASC), 3-7 January 2009, Cairo University, Giza, Egypt. For information, contact- [eyesac@chem-sci.cu.edu.eg](mailto:eyesac@chem-sci.cu.edu.eg) or [yousrymi@yahoo.com](mailto:yousrymi@yahoo.com)
- 2) The third NanoAfrica Conference will be held at the CSIR International Convention Centre ([www.csiricca.co.za](http://www.csiricca.co.za)), Pretoria, South Africa, from 1-4 February 2009. For the program, registration and abstract submission, please visit: <http://www.nanoafrica.co.za>
- 3) 11<sup>th</sup> Frank Warren Conference (<http://chemweb.unp.ac.za/FW2010>) to be held in Pietermaritzburg from 17-21 January 2010
- 4) The 13<sup>th</sup> Royal Australian Chemical Institute Inc. National Convention <mailto:probarti.milton@raci.org.au> in Melbourne, Australia, 4 - 8 July 2010
- 5) 39<sup>th</sup> International Conference on Coordination Chemistry ICC39 Adelaide, South Australia and 2010 Inorganic Chemistry Divisional Meeting of RACI IC'10, 25 - 30 July, 2010 <http://iccc2010.eventplanners.com.au>, \*Email: [iccc39@eventplanners.com.au](mailto:iccc39@eventplanners.com.au) <mailto:iccc39@eventplanners.com.au>, \*Website: <http://iccc2010.eventplanners.com.au>
- 6) Arkivoc organizes the FloHet 10 conference 8th - 11th March 2009 Gainesville, Florida, USA. (<http://www.arkat-usa.org/conferences-flohet-others/>)