

Annual Report
of the
South African Chemical Institute
(Incorporating the SA Institute of Assayers and Analysts)
7th August 2014 to 6th August 2015



**THE SOUTH AFRICAN
CHEMICAL INSTITUTE**

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OFFICE BEARERS



Prof S Lotz – President



Prof B Martincigh – Vice-President



Prof J Darkwa – Immediate Past-President



Dr M Booth - Co-opted Member



Prof N Coville – Executive Treasurer



Dr P Forbes – Executive Secretary



Dr V Nyamori- Co-opted Member

MEETINGS

Council meetings were held on:

6th August 2014 (AGM)

Executive Committee meetings were held on:

6th August 2014(AGM), 22nd November 2014, 9th March 2015, 11th May 2015 and 4th August 2015

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PRESIDENT'S REPORT

Approaching the end of my two-year term as SACI President I would like to reflect on progress made during especially the last year of office. (See last year's annual report for the period July 2013 to July 2014.) This is by no account a balanced overview, but instead some general comments to show growth in the institute. While during the previous term of the presidency of SACI many new ventures were initiated, I like to look on the present term as one of consolidation. I applaud the commitment of committee members, administration and many volunteer SACI members for pursuing goals and serving by giving time and expert service. SACI must be owned by its members. By way of selecting a few examples I will indicate opportunities that were taken, relationships that were nurtured or built, matters that remain partly as unresolved and challenges that need to be addressed. The full account is documented in the annual reports of chairpersons of committees and divisions of this annual progress report.

International and national links

International agreements exist between SACI and the Royal Society of Chemistry (RSC), American Chemical Society (ACS) and the European Federation of Medicinal Chemistry (EFMC). The RCS five-year agreement was renewed (2012) and over the years has resulted in many benefits to SACI and its members through collaborative ventures and events. In addition to regular support of SACI workshops and conferences, the RCS brought a high-level delegation on a roadshow to South Africa in November 2014. They targeted young scientists and visited Pretoria, Johannesburg, Natal and the Western Cape for networking and made them aware of the RSC and its programmes.

A similar agreement signed in 2013 with the ACS resulted in speakers being sponsored to attend the Inorganic and Physical Chemistry Conference held in Durban (2013) and in a visit of the ACS on Campus in Gauteng and Natal. The next chapters between SACI and the ACS were written in December during the Frank Warren Conference in Stellenbosch (organised by Willem van Otterloo) with a large number of ACS sponsored speakers from USA contributing, whereas in July 2015 Jerry Bell (ACS) and Marissa Rollnick (Wits) organised teacher workshops for Gauteng, Natal and the Western Cape.

SACI was recently approached by the European Federation of Medicinal Chemistry through Kelly Chibale to share information, participate jointly in symposia and conferences and promote chemistry in medicine. An agreement to this effect was signed in May 2015 and because of present interest groups in South Africa will find a home in the SACI Organic Division.

The South African Institute of Physics (SAIP) also approached SACI to sign a memorandum of understanding mostly related to education which was in principle accepted by the EXEC and will be discussed at the council meeting.

The time is ripe to critically look at the value, requirements and expected outcomes for SACI in setting up MOU's in the future.

South African Journal of Chemistry

Under the dynamic leadership of the new chief editor, Gert Kruger, the journal has made excellent progress and can be described as a high quality chemistry journal. Annually approximately 40 manuscripts are published that represent around 15% of the number of papers submitted. Some highlights are: the online submission system is now fully functional; the journal is open access; a formal plagiarism scanning procedure is in place; more editors are appointed; the journal is archived on the African Journal Archive collection, back to 1918 and funding for the Digital Object Identifier numbers was secured from ASSAF and applied since 2015. Congratulations to Gert Kruger who was elected as committee member of the Committee on Scholarly Publishing in South Africa.

Finances and membership

As a result of some sound investment consolidations and profits made at all recent divisional, national and international conferences the financial position of SACI has improved to such an extent that money is available for new initiatives. For the first time all regions have positive bank accounts and divisions can start awarding student bursaries for conference participation. SACI is a non-profit organisation and intends allocating funds for worthy causes after funding of running expenses have been secured for a set period of time.

The number of SACI members has stayed stagnant in recent years and efforts to increase membership numbers have not bear fruit. Especially disappointing is the number of student members, which in spite of new initiatives, has remained constant.

SACI structures, SACI constitution and professional status of chemists

We have not yet concluded the chapter on a new structure for SACI nor succeeded to have members registered at the South African Council for National Associated Science Professions (SACNASP). In the case of a new structure for SACI, groundwork of gathering all relative information has been done. I am grateful to Mike Britton and Ian Bratt for facilitating the process and making valuable proposals. The issue is now open for discussion and some decisions have already been made, e.g. splitting Gauteng into Gauteng North and Gauteng South (70% of SACI members fall in the Gauteng region). However, it was decided to first wait with this process until all constitutional changes requested by SAQA to qualify for membership with SACNASP has been done. This is a tedious process as requirements set by SAQA is often vague and inconsistent. Many changes require adjustments of our constitution. Hopefully most challenges will soon be met if new ones do not keep on surfacing. I need to thank Mike Booth and Neil Coville for their patience and hard work in trying to resolve outstanding issues.

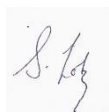
Management

EXEC meetings are now held by telephone and in the future will probably move to Skype meetings. This resulted in considerable savings for SACI by cutting on travel and accommodation costs of committee members. In addition this way of meeting is of greater convenience to committee members especially because all decisions are anyway made by electronic media. Ideally one would like to have at least one EXEC committee member representing each region that will result in dated information reaching every region. Council meetings will coincide with the AGM and be retained for valuable personal contact.

Personal

Allow me, at the end of my term, to thank the management team and members for constructive support, hard work and expert advice over the period that I was President of SACI. In particular, I wish to thank Laila Smith for her superb administration skills and patience with me (not meeting deadlines) and Neil Coville for his hands-on knowledge of all SACI matters and wisdom in solving problems.

Thank you all



Simon Lotz
(President SACI 2013/5)

AWARDS 2014
2015 awards will be announced at the AGM

THE GOLD MEDAL

The award, a gold-plated medal bearing the Institute's name and crest on the obverse and name of the medal and the recipient and date on the reverse, is made to a person whose scientific contribution in the field of chemistry or chemical technology is adjudged to be of outstanding merit.

Professor Len Barbour
University of Stellenbosch

THE MERCK MEDAL

The medal is awarded to the senior author of the paper, or papers, published in the South African Journal of Chemistry in a specific field of chemistry, adjudged to have made the most significant contributions to the discipline. The award for 2014, covering papers published in the period 2010 to 2013, was in the field of Organic Chemistry.

KG von Eschwege and J Conradie*

S. Afr. J. Chem. 2011, 64, 203-209

Redox potentials of ligands and complexes. A DFT approach

THE SASOL POST-GRADUATE MEDALS

The medals shall be awarded to students engaged in research towards an MSc or PhD degree at a University, or an MTech or DTech degree at a Technikon, or University or Institute of Technology. The number of medals awarded shall not exceed five per annum, and the awards are limited to one per institution.

Dr Adeniyi Sunday Ogunlaja	Rhodes University
Mr Myron Mario Johnson	University of the Witwatersrand
Ms Kathryn Jean Wicht	University of Cape Town
Mr Collins Obuah	University of Johannesburg

THE CHEMICAL EDUCATION MEDAL

The award is made to a person who has made an outstanding contribution to chemical education as judged by the person's published work in the previous 5 years. Published work may be in any form and may be related to any level or educational context.

Dr Patricia Forbes
University of Pretoria

THE JAMES MOIR MEDALS

Medals shall be awarded to the best BSc Honours student in chemistry at each University, and the best BTech student in chemistry at each University or University of Technology. To be eligible for the award the student must have achieved a minimum final pass mark of 75%. One medal shall be available for award annually for each University or University of Technology in the Republic of South Africa.

Mr Emil Mamedov

Ms Sharista Raghunath

Mr Ian Strydom

Mr Pieter Lourens Pohl

Mej. Marcelle Dunn

Ms Tracey Saywood

Ms Nicola Anne Dare

Ms Jireh Beatrix May-Li Smit

Ms Sumayya Chohan

Cape Peninsula University of Technology

Durban University of Technology

University of Pretoria

Nelson Mandela Metropolitan University

**North-West University (Potchefstroom
Campus)**

Rhodes University

University of Cape Town

University of the Free State

**University of KwaZulu-Natal,
Pietermaritzburg**

THE SASOL CHEMISTRY INNOVATOR OF THE YEAR MEDAL

The award shall be made to a person whose scientific contributions in the field of chemistry or chemical technology during the year preceding the award are adjudged to be outstandingly innovative.

Professor Orde Munro

University of KwaZulu-Natal

THE RAIKES MEDAL

The award shall be made to a person, under the age of 40 on 31 March in the year of the award, whose original chemical research shows outstanding promise, as judged by the person's publications in reputable journals. It is further stipulated that the research shall have been performed in South Africa.

Dr Andreas Lemmerer

University of the Witwatersrand

MEMBERSHIP REPORT

May 2014 – April 2015

The number of SACI members increased slightly over the last year, with the total paying membership now standing at 797 (776 for 2013/2014), whilst the non-paying members increased to 436 (317 for 2013/2014). The primary change in non-paying members was the addition of Conference members during the year. The non-paying category also includes Honorary, Life, Student and Teacher members, as reflected in the table of membership figures at the end of this report. The relatively new non-paying category of undergraduate students has attracted 18 people so far, and it is hoped that these will be converted into paying members in due course. The main movement in the paying members was in the categories of Members and Paying Students. As of 30 April 2014 there were three paid up Patron members and nine Company members. The new Fellows and Life members will be announced at the SACI AGM in August 2015 after ratification thereof at the SACI Council meeting.

In order to improve the involvement of postgraduate students in SACI, student representatives have been identified at a range of universities, with regional representatives nominated from these who liaise with the Sections.

The Executive Committee would like to thank Laila for management of the membership database. Current SACI members are requested to assist in increasing our membership numbers by both encouraging colleagues and peers to join our Institute as well as by motivating their employers to consider company or patron membership.



Dr Patricia Forbes
Executive Secretary

PROGRAMME COMMITTEE

In 2014 three conferences were held under the auspices of SACI.

The 5th International IUPAC Conference on Green Chemistry was held in Durban from 17 to 21 August at the Elangeni Hotel in Durban. The conference showcased six plenary lectures, 13 keynote lectures, 98 oral presentations and 74 posters. There were also three workshops. Attendance at the sessions was high throughout the conference, including the last day. The Minister of Science and Technology, the Hon. Naledi Pandor, MP, delivered the opening address. In addition, the presence of high-level representatives of renowned chemical societies such as the American Chemical Society, Royal Society of Chemistry, IUPAC and the Organisation for the Prohibition of Chemical Weapons (OPCW), constituted an important recognition of the significance of the conference and of the key role of green chemistry for sustainable development. The Conference was a multidisciplinary event considering all the major areas of Green Chemistry, including green synthesis processes, catalysis, environmentally benign solvents, energy storage, biofuels, Green Chemistry education, policies, and others. Interfaces with other sciences and other research areas were actively encouraged. A session on sustainability and security, conducted by OPCW, contributed to linking scientific knowledge, education and policies with regard to the production and use of chemicals. During the Conference, poster prizes were awarded to students who had made a significant contribution in the field of Green Chemistry from the results they presented. Third prize went to Mr Hazeeq Azman from Imperial College, London for his work titled, "Rhodococcus catalyzed reaction in ionic liquid". The second prize was awarded to Mr Ntokozo Chamane from the University of KwaZulu-Natal with the topic "Carbon nanotube (CNT) supported platinum (Pt) and platinum-palladium (Pt-Pd) nanoparticles for selective hydrogenation", while first prize went to Ms Thokozani Xaba from Vaal University of Technology for her work titled, "The effect of water-soluble capping molecules in the 'green' synthesis of CdS nanoparticles using the (Z)-2-(pyrrolidin-2-ylidene)thiourea ligand". Professor Leonard Barbour of the University of Stellenbosch was awarded the SACI Sasol Innovator of the Year award for 2013 and presented his award-winning lecture titled "Understanding porosity in flexible metal-organic systems". In addition, the IUPAC ChemRAWN 2014 Award went to Professor Vânia G. Zuin from the Federal University of São Carlos, Brazil. The conference was attended by 180 delegates.

A total of 215 delegates and exhibitors attended Analitika 2014, which was held from 7 to 11 September at *Khaya iBhubesi* on the outskirts of Parys. The Conference, the seventh in the Analitika series since 1992, was arranged jointly by:

- The Analytical Division of the South African Chemical Institute (SACI);
- ChromSA (Chromatography);
- The South African Association for Mass Spectrometry (SAAMS);
- The South African Spectroscopic Society (SASS); and
- ThermSA (Thermal Analysis).

The 5 plenary lectures presented by Graham Cooks (Purdue University, USA), Eder Cavalheiro (University of São Paulo, Brazil), Jan Åke Jönsson (Lund University, Sweden), Ralph Sturgeon (National Research Council, Canada) and Pat Sandra (Research Institute for Chromatography, Belgium) adequately addressed the theme of Analitika 2014, namely "Milestones in measurements". In addition 8 invited keynote lectures, and 54 oral and 62 poster presentations covered all aspects of analytical chemistry. The exhibition of analytical equipment and consumables was supported by 17 of the leading local suppliers. In addition to the scientific program, the social events organised at *Khaya iBhubesi* and the neighbouring resort of *Stonehenge in Africa*, were enjoyed by all and many of the delegates also went on a guided tour of the Vredefort Dome. A highlight of the Conference was the number of student delegates who attended and the quality of their presentations. Several

organisations sponsored the registration fees for 16 students and provided prizes for student presentations.

The SACI-ACS Bi-National Organic Chemistry Conference incorporating the 13th Frank Warren Conference was held at the Wallenberg Research Centre at the University of Stellenbosch from 30 November to 4 December 2014. An early and unanimous decision was taken by the committee to invite the American Chemical Society to partner SACI for the conference since this would provide the Organic Chemistry community of South Africa an opportunity to interface with our American colleagues in a reciprocal manner similar to that previously achieved in earlier bi-national conferences with the RSC in 2001 at Cape Town and the Gesellschaft Deutscher Chemiker (GDCh) in 2008 at Berg-en-Dal in the Kruger National Park and 2013 at Tutzing near Munich in Germany. The ACS partially sponsored the travel of nine prominent American Organic Chemists, namely, Profs Scott Snyder, Richmond Sarpong, Craig Forsyth, Armer Zakarian, Marisa Kozlowski, Clay Bennett, Lawrence Williams, Jef de Brabander and Vladimir Gervorgyan. These were selected by the committee from a list provided by the ACS to participate in the conference and these plenary lecturers made a lasting and indelible impact not only for their excellent research presented but also for their vital interactions with the younger students, especially during the posters sessions, since they were the designated judges for the best poster. Five South African organic chemists, namely, Profs Kelly Chibale, Mike Davies-Coleman, Roger Hunter, Bert Klumperman and Eric Strauss were invited to give plenary lectures all of which were of an equally high standard to that of our American guests. A total of 165 delegates representing almost all regions in South Africa attended the conference.

Overall, all the conferences were successful and returned a profit for SACI.

In 2015 two conferences will be held, namely, the 17th South African Chemical Institute Inorganic Chemistry Conference (INORG 2015) (*incorporating the Carman Physical Chemistry Symposium*) at Rhodes University in Grahamstown from 28 June to 2 July, and the 42nd National Convention of the South African Chemical Institute to be held in Durban from 29 November to 4 December. Both conferences promise to be exciting events.

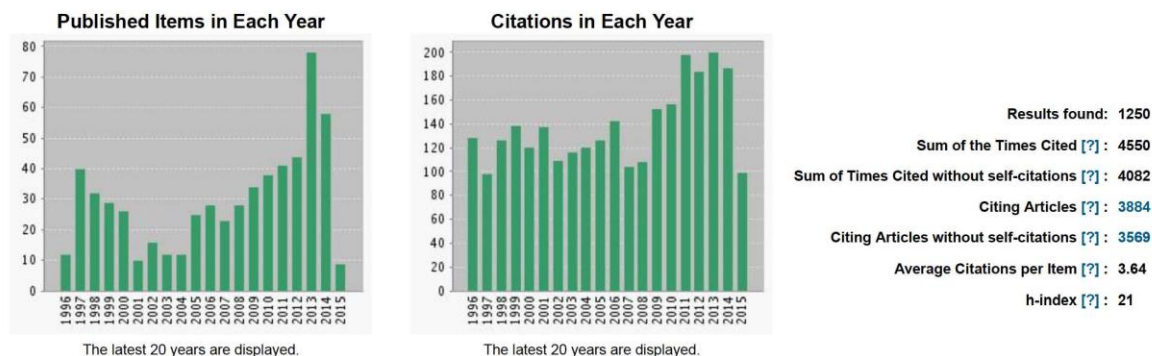
Other regional events were held and reported in the monthly SACI Newsletter.

Prof Bice Martincigh

Report SAJChem

All new papers are now handled through the system. Stats about the Journal are presented below.

2015 Search results:



It is clear that the number of papers per year (that are published by the journal) are steadily increasing since 2004. The number of citations are also increasing since 2008. Credit should go to the Science editors:

Organic Chemistry

- Professor Willem van Otterlo
- Dr Leigh-Anne Fraser
- Dr Tricia Naicker
- Dr Edwin Mmutlane

Physical Chemistry

- Professor Bice Martincigh
- Professor Jeanet Conradie

Analytical Chemistry

- Professor Luke Chimuka
- Dr Patricia Forbes

Inorganic Chemistry

- Professor Simon Lotz
- Dr Daniela Bezuidenhout

Educational Chemistry

- Professor Bette Davidowitz

Computational Chemistry

- Dr Gerhard Venter

Nanochemistry

- Professor Neerish Revaprasadu
- Professor Patrick Ndungu

The majority of the papers published are still from South Africa. The top 100 countries of authors that have published in the journal are presented below.

Iran is in second place, followed by India and China. USA is in 5th place, followed by England Germany and Australia. England was in the 8th place in 2014. At least 19 other African countries are publishing in the journal (was 14 in 2014).

The first 100 Countries/Territories (by record count) are shown.

<input type="checkbox"/> SOUTH AFRICA	<input type="checkbox"/> SWEDEN	<input type="checkbox"/> SPAIN
<input type="checkbox"/> IRAN	<input type="checkbox"/> SERBIA	<input type="checkbox"/> SLOVAKIA
<input type="checkbox"/> INDIA	<input type="checkbox"/> OMAN	<input type="checkbox"/> SAUDI ARABIA
<input type="checkbox"/> PEOPLES R CHINA	<input type="checkbox"/> LESOTHO	<input type="checkbox"/> RUSSIA
<input type="checkbox"/> USA	<input type="checkbox"/> CZECH REPUBLIC	<input type="checkbox"/> REUNION
<input type="checkbox"/> ENGLAND	<input type="checkbox"/> CANADA	<input type="checkbox"/> PORTUGAL
<input type="checkbox"/> GERMANY	<input type="checkbox"/> BRAZIL	<input type="checkbox"/> P R CHINA
<input type="checkbox"/> AUSTRALIA	<input type="checkbox"/> ZAIRE	<input type="checkbox"/> NORWAY
<input type="checkbox"/> TURKEY	<input type="checkbox"/> TANZANIA	<input type="checkbox"/> NAMIBIA
<input type="checkbox"/> NIGERIA	<input type="checkbox"/> TAIWAN	<input type="checkbox"/> MEXICO
<input type="checkbox"/> BOTSWANA	<input type="checkbox"/> SWITZERLAND	<input type="checkbox"/> MAURITIUS
<input type="checkbox"/> KENYA	<input type="checkbox"/> SWAZILAND	<input type="checkbox"/> MACEDONIA
<input type="checkbox"/> POLAND	<input type="checkbox"/> RHODESIA	<input type="checkbox"/> JORDAN
<input type="checkbox"/> SOUTH KOREA	<input type="checkbox"/> PAKISTAN	<input type="checkbox"/> JAPAN
<input type="checkbox"/> FED REP GER	<input type="checkbox"/> NETHERLANDS	<input type="checkbox"/> INDONESIA
<input type="checkbox"/> EGYPT	<input type="checkbox"/> MALAYSIA	<input type="checkbox"/> HUNGARY

In 2013, we have rejected a total of 106 papers, while 46 papers were published.

In 2014, we have rejected a total of 204 papers, while 39 papers were published.

In 2010 the journal published 39 articles comprising 232 journal pages; the corresponding data for 2011 was 41 papers (262 pages), 2012 was 44 papers (285 pages) and 2013 was 46 papers (289 pages), 2014 was 39 papers (240 pages).

The current system can now easily produce stats for the submission process. Below are some of the stats:

	2013	2014	2015/June
Total submissions made	140	243	110
Analytical	22	45	34
CompChem	15	12	8
Education	5	7	3
Inorganic	25	26	11
Nano	12	21	5
Organic	34	103	34
Physchem	27	28	15
Fastest time for paper to be accepted/days		38	58
Average time for paper to be accepted/days		147	58
Nr of submissions rejected within 2 weeks		69	70

Average time for rest of paper to be rejected/days		114	31
Number of papers published	46	39	21
Papers published per editor		2014	Declined
Martincigh		5	10
Conradie		4	2
Frazer		1	17
Chimuka		3	13
Revaprasadu		4	4
Forbes		3	4
Lotz		2	11
Naicker		4	6
Van Otterlo		5	10
Venter		0	10

The average days for acceptance and rejection came down a lot. That is in my view the most important improvement, provided we can keep up the quality of the journal.

I have attended two Editors meetings last year in Cape Town from which a number of recommendations came (see last year's report). All the recommendations were implemented.

The Journal has introduced DOI numbers (sponsored by SCIELO) and Android QR codes. Attached is an example:

If you scan this code with any Android QR code application (or Google Goggles), it should open the paper on your Android device. So authors can just email the QR code to people if they request a paper.

We are now investigating the possibility to link ORCID to the authors and papers.

Best wishes
Gert Kruger

Multiwalled Carbon Nanotube-titania Nanocomposites: Understanding Nano-Structural Parameters and Functionality in Dye-sensitized Solar Cells

Edwin T. Mombeshora^a, Reuben Simoyi^a, Vincent O. Nyamori^a and Patrick G. Ndungu^{b,*}

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^bDepartment of Applied Chemistry, University of Johannesburg, P.O. Box 17011, Doornfontein, Johannesburg, 2028, South Africa.

Received 18 September 2014, revised 26 April 2015, accepted & 7 May 2015.

ABSTRACT

Nanocomposites consisting of multiwalled carbon nanotubes and titania were synthesized by two methods, namely, sol-gel and chemical vapour deposition (CVD) methods. The work takes advantage of the bridging ability of nanotechnology between macromolecules and the solid state process in engineering alternative nanomaterials for various applications including solar cell fabrication. Physical and chemical characterization of the mesoporous nanocomposites from the two synthetic methods were investigated using Raman spectroscopy, thermogravimetric analysis, Fourier transformation infrared spectroscopy, scanning electron microscopy, transmission electron microscopy, high-resolution transmission electron microscopy, surface characterization and X-ray diffraction analysis. Physicochemical properties in the nanocomposites such as thermal stability, pore volume, crystallinity and surface area were observed to be a subject of MWCNT: titania ratios and synthetic methods. From the CVD synthetic method, observed attributes include more uniform and smoother coating; better crystallinity and larger pore width than sol-gel method. On the other hand, nanocomposites from sol-gel synthetic method had larger surface areas, were more defective and less thermally stable than those from CVD. Nanocomposites by the CVD method performed 39.2 % more efficient than those from sol-gel in light-harvesting experiments. The study shows that the nanocomposites synthesized were more effective than titania alone when the cheaper natural dye, Eosin B, was used. This highlights the great potential of typical nanomaterials in improving the performances of titania in DSSCs as well as lowering the cost of the ultimate devices.

KEYWORDS

Dye-sensitized solar cells, multiwalled carbon nanotubes, nanocomposite, titania, sol-gel, chemical vapour deposition.

1. Introduction

In terms of clean and renewable energy, dye-sensitized solar cells (DSSCs) offer an interesting and attractive alternative to the various options available, especially for a developing world economy. DSSCs are relatively simple systems that can be assembled with minimal amounts of inexpensive materials, operate under varying light conditions and temperatures, can be assembled or moulded into various shapes, configurations, and colours.¹ DSSCs are photo-electrochemical systems that use a dye to capture energy from sunlight, transfer this to a metal oxide such as zinc oxide^{1,2} or titania,¹⁻³ and eventually *via* several physical-chemical processes provide a usable current. Titania is the most widely used metal oxide in DSSCs and is the one component in the system that is widely studied to try to improve overall performance of DSSCs.¹

Titania is a highly versatile material for nanoscience and nano-technological-based applications. It is a material with relatively low toxicity, is widely available, has a well-known band gap, and is easily synthesized into various rationally designed morphological forms with desirable physico-chemical properties. These factors are some of the reasons why titania has been used in various applications such as biomorphic ceramics,⁴ sensors,⁵ photocatalytic applications such as water purification reactions,^{6,7} electro-catalysis,⁸ as columns in phosphopeptides analysis⁹ and in DSSCs.^{2,10}

A growing area of research is the combination of titania with carbon nanostructures, such as carbon nanotubes (CNTs). Nanocomposites of titania are nano-scale multiphase materials,¹¹ and titania CNT (TiO₂/CNT) nanocomposites have been shown to have an improved efficiency when compared to bare titania, in various applications. Some of the reasons for the improvement in performance include superior characteristics regarding separation of charge carriers within the nanocomposite,¹² excellent electrical conductivity, and a relatively large surface area for physico-chemical processes. Several examples that utilize TiO₂/CNT nanocomposites have been reported in literature, and these include research on photo-catalysis,¹³⁻¹⁹ electrochemical energy conversion²⁰ and storage,²¹ and dye-sensitized solar cells.^{10,14,22,23}

Carbon nanotubes can be simply described as a rolled up sheet of graphene, and based on the number of sheets they can be classified as single, double, and multiwalled CNTs.³ Multiwalled CNT (MWCNTs) are relatively easy to synthesize *via* the chemical vapour deposition method, and manipulation, purification, and modification can be accomplished using various methods in a moderately equipped laboratory²⁴. Use of MWCNTs in DSSCs is an active area of research, and early work in this field used MWCNTs in DSSCs as either a counter electrode,²⁵ an additive,²⁶ or as a nanocomposite material.²⁷⁻²⁹

MWCNT-titania nanocomposites have been fabricated by a number of ways such as sol-gel,³⁰ mechanical mixing,¹⁰ electro-

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SACI NEWSLETTER

The SACI newsletter continues to be published 11 times a year, typically by the end of each month. The content is to a large extent determined by input of information submitted from divisions and sections as well as information garnered from SACI executive activities. I view one of the functions of the newsletter is that it act as a repository of SACI activities. It is thus important to record all our activities so as to indicate to members (and non-members) what SACI is doing as an organisation that represents chemists in SA.

This year a regular call has been made to all SACI Council and Exec members for information (typically week 2 of a month) and this has resulted in a good inflow of information.

This year a shorter version of the newsletter (together with a longer version that is placed on the SACI website) has been sent to members. This may still need tuning.

Again my personal thanks to Laila Smith for 'producing' the newsletter each month.

Neil Coville

IUPAC

No Report

- New Council

The process of reconstituting the SACNASP Council has been completed and the following 21 individuals have been appointed for the period 1 May 2015 - 30 April 2019.

3(1)(a): Dr. Gerda Botha, Dr. Stephanus Terblance, Prof. Khathutshelo Nephawe, Mr Neale Baartjies, Prof. George Bredenkamp, Prof. Robin Crewe, Prof. Brian Reilly, Dr Juanita van Heerden, Dr Jacqueline Galpin, Dr. Roelof Coetzer, Dr. Irvy Gledhill and Mr. Desmond Musetsho.

3(1)(b): Dr Monde Mayekiso, Mr. Fhatuwani Ramagwede, Dr. Phethiwi Matutu and Dr. Phillia Vukea. 3(1)(c): Prof. Mary Gulumain, Mr Poobalan Govender, Dr. Wendy Ngoma, Ms. Thulisile Mashando and Ms. Pertunia Masemola.

Although SACI is not directly represented on the new Council, the Chairperson of the Professional Advisory Committee (PAC) for Chemistry remains the SACI representative.

- New Office Bearers

At the Inauguration Meeting of the new Council on 25 June 2015 Dr Gerda Botha was elected as the new President and Prof. Khathutshelo Nephawe as the new Vice-President.

- New Fields of Practice

In June 2014 SACNASP, SASAE and DAFF started to register Extension Scientists, and 450 have been registered to date. Extension Scientists utilise scientific methodology to advise farmers in order to produce best yields, and it is now a legal requirement for them to register with SACNASP. The field of Conservation Science has meanwhile been approved by Council and forwarded to the Minister for approval and gazetting.

- Relocation of Offices

The workload and staff complement has grown to such an extent that SACNASP had to start relocating its offices from the Geoscience Building to the Innovation Hub at the end of April 2015.

- Registrations

SACNASP currently has an incredible 7 480 registered scientists, of whom 956 (or 13%) are Chemical Scientists. An average of 10 applications for registration is now received on a daily basis. During the reporting period a total of 1 206 Natural Scientists were registered. Of these, 92 (or 8%) are Chemical Scientists.

- Continuous Professional Development (CPD)

The roll-out of CPD at SACNASP has progressed through consultation with CPD-on-Demand and liaising with the Institute for Engineering and Environmental Geologists, the Society for Animal Science, and the Geological Society. The project will be implemented in more Fields of Practice during 2015.

- Critical Skills Visa

The Department of Home Affairs recently introduced a new “critical skills” visa which allows foreign scientists to be employed by organisations in SA should they meet specific requirements. In view of its accreditation by SAQA, SACNASP now determines through its PAC’s whether an applicant has the critical skills within a specific Field of Practice in order to be granted a visa.

- On a Sad Note

Prof. Pieter Marais, an esteemed Chemical Scientist, a former Executive Dean of the Faculty of Science at TUT and a former President of SACNASP, passed away on 29 January 2015.

**Prof. ELJ Breet, Professor Emeritus in Chemistry
North-West University, Potchefstroom**

CO-ORDINATION COMMITTEES AND DIVISION REPORTS

EASTERN CAPE

1. SACI EC Leadership

The 2013-2015 SACI EC Coordination Committee (led by Prof Zeni Tshentu) will be dissolved at the end of July 2015 and a new committee will take up the role. Nominations for the chairperson position were open from early June 2015, and only one name was received. Prof Rui Krause (current HOD at Rhodes University) will take over the role as chairman, and will constitute a new committee.

2. SACI EC Postgraduate Students Seminars 2104

The Nelson Mandela Metropolitan University (NMMU) hosted the 2014 EC SACI postgraduate seminars at the NMMU Conference Centre on the 24th October. A total of 130 delegates attended the PG seminar. This year's PG seminar was unique because it adopted a different format in which apart from the chemistry departments from the four universities in the province, two students from INNOVENTON also participated in the seminar. The head of Chemistry at NMMU, Prof. Tommy Gerber, welcomed colleagues and students from all the universities in the EC and welcomed INNOVENTON specially being the first time that colleagues from the research enterprise were participating. He emphasized that the PG seminar is not a competition but an avenue for students from the different Universities in the province to showcase their research work and learn from each other.

The chairperson of the EC SACI, Professor Zenixole Tshentu, presented the outlook of SACI in the country and the province in particular. The issues raised in his presentation centred on the drive to improve membership especially in the province, students' chapter at SACI, the good financial standing of the province due to profit made from the National Convention hosted by WSU in 2013. He highlighted the SACI conferences for the next five year and emphasized the Inorganic Chemistry conference that Rhodes University will be hosting in June 2015. He also showcased the SACI medallist for 2014 and encouraged members to continue to seek excellence with the hope that more members from the province will be rewarded for their hard work in the near future. He ended by thanking the organisers and sponsors (Aspen Pharmacare, Lasec SA (Pty) Ltd, Heraeus South Africa (Pty) Ltd and Nelson Mandela Metropolitan University), who he said the event will not be possible without their support.

Ten students presented their research work, two students from each university and two from INNOVENTON. Five in the junior category for BSc Honours and first year MSc students while five students presented in the senior category comprising of second year MSc and PhD students. Unlike in the previous years, where presentations covered all areas of chemistry, most of the presentations were in the organic chemistry domain and three in materials chemistry. In the junior category, Sasha-Lee Dorfling (NMMU) came first on her presentation entitled "Enantioselective transformations using TETROL as a chiral mediator" and Sindisiwe Mvango (RU) came second (her topic dealt with "Optimization studies of glutathione self-assembled monolayers for gamma-glutamyltransferase detection". In the senior category Olamide Damola (WSU) came first (A green synthesis of type II water soluble CdTe core shell nanoparticles) and Alicia Singh (RU) came second (Fenchol-derived surfactant for the generation of chiral micelles).



Back: Prof Peter Loyson (past SACI EC Chairman, NMMU), Prof Zenixole Tshentu (current SACI EC Chairman, NMMU), Sasha-Lee Dorfling (NMMU) and Olamide Damola (WSU). Front: Remi Barnard (Lasec SA), Dr Nigel Harmse (Aspen Pharmacare), Sindisiwe Mvango (RU) and Alicia Singh (RU).

3. SACI EC Postgraduate students awards

The SACI EC section hosted the postgraduate student awards for the 2013 achievers. These were supposed to have been presented in 2014 during the Postgraduate Symposium which was held in October 2014, however the medals were not yet available. The event was held at the NMMU (South Campus) on the 10 June 2015. The brief programme was directed by Ms Xandri Schoutz (SACI EC student representative). Prof E. Ferg (NMMU, SACI EC treasurer) welcomed the people that were present at the event. The event was attended by more than 40 people (mostly NMMU staff and students. Dr Klein from RU was present). He touched on membership issues and the need to practising chemists to join SACI. He also mentioned SACI's efforts to become a recognized society and its involvement with SACNASP so that chemists can advance a professional career in SA. He also encouraged members to attend the SACI conferences that are coming up such as the National Convention in Durban in December 2015 and other meetings.



Pieter Pohl (NMMU) receiving a James Moir Medal from SACI EC Chairman (Prof Tshentu).

Prof. Z. Tshentu (SACI EC Chairman) proceeded to present the awards. The James Moir Medal was presented to Mr Pieter Pohl (NMMU student). Ms Tracey Saywood (Rhodes University) was not present at the event but was acknowledged for the James Moir Medal which had been sent to her. The Sasol Postgraduate Medal was also presented to Dr Adeniyi Ogunlaja (former RU student), followed by a presentation by Dr Ogunlaja entitled “Oxidative desulfurization of fuel oils-catalytic oxidation and adsorptive removal of organosulfur compounds”. This was work for which he received the award for this PhD research work which was submitted at the end of 2013 for examination and the degree awarded in 2014 by Rhodes University.



Dr Adeniyi Ogunlaja (former RU PhD student) receiving the Sasol Postgraduate Medal from the SACI EC Chairman.

Prof Tshentu thanked all the people who attended this important event and also invited members to send through nominations for the position of Chairperson of the EC region for the period (August 2015- July 2017). Members were then invited for refreshments.

4. 17th SACI Inorganic Chemistry Conference

The EC hosted the Inorganic Chemistry Conference in Grahamstown on the 28 June - 2 July 2015. Prof Gary Watkins was the chairman of the organizing committee while Dr John Mack was the co-chair. The conference was attended by over 100 delegates, most of them being national delegates including students while the international taste was achieved through delegates from Japan, Russia, Botswana, Zimbabwe, UK, Israel and Germany. A detailed summary, from the chairman of the organizing committee, is included as a separate report.

Prepared by Prof Zeni Tshentu

GAUTENG

The SACI Gauteng coordination committee consisted of Alfred Muller (UJ, Chair), Andreas Lemmerer (Wits, treasurer), Edwin Mmuthlane (UJ, events) and Charmaine Arderne (UJ, secretary). Andreas Lemmerer has given the indication that he will resign from the committee at the end of this term. The following events were held successfully:

- 1) SACI/RSC annual dinner event, held at School of Hospitality and Tourism, University of Johannesburg, Bunting Road Campus, 29 August 2014. The event included an award ceremony for the very first SACI fellows, which included Ian Bratt, James Darkwa, Susan Finney, Neil Coville, Hannelie Meyer, Mike Booth and Jan Boeyens. The evening was rounded off by two after dinner speakers, Gail and Ian Jamieson from Science Fiction SA, who highlighted some of the links between science fiction and chemistry.
- 2) SACI young scientist symposium, held at North West University, Potchefstroom Campus, 11 November 2014. The event was organized by Paul Beukes' team and attended by ~100 delegates. Prize winners for the event: Landi Joubert (Hons), Duane Hean (Wits) and Wilson Mogodi (Wits).
- 3) Award ceremony held at Wits, 27 November 2014. The event included the Merck prize winning lecture by David D. N'Da, as well as the handing over of James Moir and Sasol medals.

From the SACI Gauteng Coordination Committee

KWAZULU-NATAL

The committee has met regularly, every two months, to plan various events.

On 21 July a very successful seminar entitled “Helium Crisis - what helium crisis? Changing GC carrier gas from helium to hydrogen” was held at the University of KwaZulu-Natal, School of Chemistry and Physics. The seminar was presented by Dr Ed Connor of Peak Scientific in Glasgow. It was attended by approximately 50 persons. Refreshments were sponsored by Peak Scientific Africa (Pty) Ltd and our sincere thanks go to Dean Milbank.

From 17-21 August the 5th International IUPAC Conference on Green Chemistry was held at the Elangeni Hotel on the Durban beachfront. The conference was very well attended with over 180 delegates. Congratulations to Professor Liliana Mammino (Conference Chair) and Dr Vincent Nyamori (Local Organising Committee Chair and Conference Vice-Chair) and their team for a very successful conference.

The Conference was a multidisciplinary event considering all the major areas of Green Chemistry, including green synthesis processes, catalysis, environmentally benign solvents, energy storage, biofuels, Green Chemistry education, policies, and others. Interfaces with other sciences and other research areas were actively encouraged.

Special attention was given to the roles of Green Chemistry in fast-growing economies and to the promotion of it on the African continent. Presentations included six plenary, 13 keynote, 98 oral and 74 poster presentations. There were also three workshops. The opening ceremony was attended by various distinguished guests and dignitaries, including the Honourable Minister of Science and Technology Naledi Pandor, who gave the opening address.

During the Conference, poster prizes were awarded to students who had made a significant contribution in the field of Green Chemistry from the results they presented. Third prize went to Mr Hazeeq Azman from Imperial College, London for his work titled, “Rhodococcus catalyzed reaction in ionic liquid”. The second prize was awarded to Mr Ntokozo Chamane from the University of KwaZulu-Natal with the topic “Carbon nanotube (CNT) supported platinum (Pt) and platinum-palladium (Pt-Pd) nanoparticles for selective hydrogenation”, while first prize went to Ms Thokozani Xaba from Vaal University of Technology for her work titled, “The effect of water-soluble capping molecules in the ‘green’ synthesis of CdS nanoparticles using the (Z)-2-(pyrrolidin-2-ylidene)thiourea ligand”.

Professor Leonard Barbour of the University of Stellenbosch was awarded the SACI Sasol Innovator of the Year award for 2013 and presented his award-winning lecture titled “Understanding porosity in flexible metal-organic systems”. In addition, the IUPAC ChemRAWN 2014 Award went to Professor Vânia G. Zuin from the Federal University of São Carlos, Brazil.

A number of dignitaries from various government structures, non-governmental institutions as well as local and international chemistry bodies were present at the Conference. These included: Professor Pietro Tundo (Chair of the Subcommittee on Green Chemistry of the International Union of Pure and Applied Chemistry), Dr Jonathan Forman (Science Policy Adviser of the Organisation for the Prohibition of Chemical Weapons), Dr Helen Driver (International Development Manager for Latin America and Africa of the Royal Society of Chemistry) and Dr Thomas Barton (President of the American Chemical Society).



From left: Dr Vincent Nyamori, Minister Naledi Pandor and Professor Deo Jaganyi of UKZN at the opening of the 5th International IUPAC Conference on Green Chemistry.

Annually the KZN Section organises the Postgraduate Colloquium. This year it was held on 23rd September at the Pietermaritzburg Campus of the University of KwaZulu-Natal. The event was very ably organised by the ChemBurg Student Society. It was attended by approximately 60 postgraduate students from the various local tertiary institutions. Eleven students orally presented their research projects while another six students presented posters on their projects. The oral and poster presentations were adjudicated and prizes were awarded.

The winners were:

Best MSc Oral Presentation: Ms Kudzai Mugadza (UKZN, Westville Campus)

Best PhD Oral Presentation: Ms Lucy Ombaka (UKZN, Westville Campus)

Best Poster: Ms Sandipa Bhikraj (UKZN, Pietermaritzburg Campus)

At the event the 2014 James Moir Medal was awarded to Ms Sumayya Chohan from UKZN Pietermaritzburg Campus for achieving over 75% in her Honours degree.



Sumayya Chohan receiving the James Moir Medal from the Chair of the SACI KZN Section, Professor Bice Martincigh.



Kudzai Mugadza receiving her award.



Lucy Ombaka receiving her award.



Sandipa Bhikraj receiving her award.



Attendees of the Postgraduate Colloquium.

We would like to thank the Royal Society of Chemistry (Northern Section) for generously providing the prizes for the event and Merck for sponsoring the lunch for the event.

At the event Professor Orde Munro of the School of Chemistry and Physics at UKZN was presented with his certificate for being awarded the Sasol Innovator of the Year Award. The award is made to a person whose scientific contributions in the field of chemistry or chemical technology during the year preceding the award are adjudged to be outstandingly innovative.

Professor Munro was awarded this prize based on the fact that he invented and patented a novel class of anticancer drug candidates. His work was also published in the prestigious Journal of the American Chemical Society. The paper describes the full story from compound invention and design to testing (anticancer screens) and mechanism elucidation (enzyme targeting and macromolecular simulations). This is a highly significant feat for any novel metallodrug candidate with a non-typical mechanism of action. To be exact, there are very few groups in the world who can achieve what Professor Munro and his group have achieved with their collaborators in the US in a short time in a research field not widely represented in South Africa.

The adjudicators of the award found Professor Munro's submission outstandingly innovative. They mentioned the fact that he was able to progress a number of promising cancer candidates through the stringent National Cancer Institute in Washington, which in itself attests to the quality of his well-designed innovative drug candidates.

Orde Munro is Professor of Inorganic Chemistry and also an Academic Leader in the School of Chemistry and Physics, Pietermaritzburg Campus. He received his B.Sc. Hons. degree in Chemistry in 1990 from the University of the Witwatersrand. He also completed his Ph.D. there in April 1996. His thesis work focused on physical and computational studies of heme-peptide model systems for heme proteins and other metalloporphyrins. He then joined Professor Robert Scheidt's laboratory at the University of Notre Dame in Indiana (Department of Chemistry & Biochemistry) in November 1995 and spent 18 months as a post-doctoral researcher working on the synthesis, characterization, X-ray structures, and molecular simulations of iron porphyrins and related macrocycles with unusual conformations. In 1997 he joined the Department of Chemistry at the University of Natal, where he continued to work on porphyrin and other pyrrole compounds as well as luminescent complexes of Pt(II) (the latter in collaboration with Prof. John Field). He has received numerous awards over the years at this institution, including the National Research Foundation (NRF) President's Award (2000), the Vice Chancellor's Research Award (2007), and the Raikes Medal of the South African Chemical Institute in 2008. In 2011/2012 Professor Munro held a Visiting Fulbright Scholarship at the University of Central Florida (College of Medicine) working with Prof. Mark Muller on delineating the mechanism of action of a new class of anticancer metallodrug compounds invented in his laboratory in South Africa for which he has been awarded SACI's prestigious "Sasol Innovator of the Year Award". Several companies (De Beers, Avitronics, SASOL, AuTEK BioMed) and the NRF have supported his research over the last decade. His current work is also indirectly supported by the NIH (USA) through their Developmental Therapeutics Program (DTP).



Professor Orde Munro receiving his certificate from Bice Martincigh.

On Monday, 29 September a very successful Gas Chromatography Seminar was held at the School of Chemistry and Physics of the University of KwaZulu-Natal, Westville Campus. We were very fortunate to have Jack Cochran, the Director of New Business and Technology at Restek Corporation in the USA, present his tips and techniques for gas chromatographic analyses. Over 50 participants attended the workshop and whether a novice or an old hand at GC everyone went away having learnt something. We are very grateful to SEP Scientific and Sue Petzer for sponsoring the workshop.



Jack Cochran of Restek Corporation together with the attendees of the GC Workshop.

Annually the KZN Section organises the Honours/BTech Symposium. This year it was held on 24th October at the Durban University of Technology. The event was kindly organised by Professor Vincent Bisetty of DUT. It was attended by the fourth year students from Durban University of Technology, University of KwaZulu-Natal and Mangosuthu University of Technology.

Professor Moyo, the Director of Research and Postgraduate Support at Durban University of Technology, gave the welcoming address. Eight students, two from DUT, and three each from UKZN Westville and UKZN Pietermaritzburg, orally presented their BTech/Honours research projects while another 10 students presented posters on their projects. The oral and poster presentations were adjudicated and prizes were awarded.

The winners were:

Oral Presentations:

- First Prize: Monga Ilunga (DUT)
- Second Prize: Zanele Vundla (UKZN, Westville Campus)

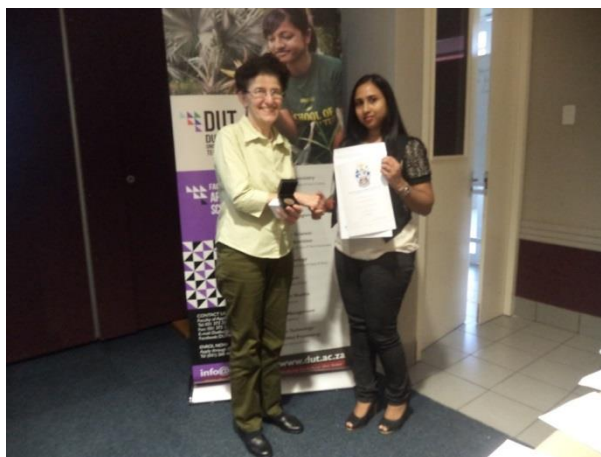
Poster Presentations:

- First Prize: Ashveer Maharaj (UKZN, Pietermaritzburg Campus)
 - Second Prize: Siyabonga Maphalala (UKZN, Pietermaritzburg Campus)
- The prizes were kindly sponsored by the Royal Society of Chemistry (Northern Section).

We would like to thank them for their generous assistance with sponsorship for this event.



All the presenters of oral or poster presentations at the SACI Honours/B Tech Symposium. At the function the 2014 James Moir Medal was awarded to Ms Sharista Raghunath of DUT for achieving over 75% in her B. Tech. degree.



Ms Sharista Raghunath receiving her James Moir Medal from Professor Bice Martincigh, the Chair of the SACI KZN Section.

On Wednesday, 19 November, the RSC Roadshow came to the Westville Campus of the University of KwaZulu-Natal. About 130 postgraduate students attended the event. It was a wonderful experience for the students to hear presentations dealing with scholarly publishing, how to get your research noticed and the importance of becoming a member of a professional society. The event ended with a scientific talk presented by Professor Delia Haynes from Stellenbosch University entitled “Towards functional materials from multi-component crystals”.

This year the annual Magic Show was held on Wednesday, 26 November at the University of KwaZulu-Natal, Westville Campus in Durban. This event has been held in KZN for some 35 years and was started by the late Professor Mike Laing. His spectacular show was well known far and wide. When it first started it featured ladies being magically cut in half, Miss Rabbit popping out of a box and all kinds of extraordinary events.

This year the show was performed by the Three Magicians, who entertained both young and old with their chemical magic, bangs and smoke. They were ably assisted by the “real” magician, Mr

Peter Warby, who kept the audience enthralled with his amazing tricks. Over 300 people attended the event which ended with the serving of magical ice cream. We were extremely pleased with the good attendance and the wonderful audience participation and enthusiasm.



The Three Magicians ready for action.



The Magicians pondering over some complex magic.



A very enthusiastic crowd want to assist!



Mr Peter Warby and his assistant.



My goodness, the book caught alight!!



Deep in concentration.



The Magician in agony as he is about to lose his finger!



All the hard-earned earnings go up in flames: or maybe not!

The SACI KZN Section would like to thank the staff of the School of Chemistry and Physics and the WestChem Student Society for assistance, and UKZN for sponsoring some prizes.

On Wednesday, 3 December all KZN SACI and RSC members were invited to a lunch and awards ceremony at the School of Chemistry and Physics at the University of KwaZulu-Natal, Westville Campus. At the event Life Membership was awarded to Mr John Harker and Professors Tony Ford and Sreekanth Jonnalagadda were presented with their Fellow Certificates. Approximately 40 members attended the event and had a very enjoyable time together.



Mr John Harker



Professor Sreekanth
Jonnalagadda



Prof Tony Ford

In January 2015 Werner van Zyl took over the reins of the Co-ordination committee as Chair. He is ably assisted by Vincent Nyamori as Vice-Chair. Bernard Owaga is the Treasurer and Bice Martincigh the Secretary. The other members of the committee are Vincent Bisetty, Irvin Booyesen, Stephen Ojwach, Tony Ford, George Carr, Sue Petzer and the student representative, Bilaal Ismail. The committee has been busy with the organization of the forthcoming 42nd National Convention of the South African Chemical Institute. This will be held at the Elangeni Hotel from 29 November to 4 December 2014. The theme of the Convention is “Chemistry Shines” in keeping with 2015 being the International Year of Light.

The finances of the Section are relatively healthy.

Prof Bice Martincigh

WESTERN CAPE

SACI Young Chemists’ Symposium – Western Cape Section

On 23 October 2014, over 100 postgraduate students from across the Cape’s four tertiary institutions – Stellenbosch University (SU), the University of the Western Cape (UWC), the Cape Peninsula University of Technology (CPUT) and the University of Cape Town (UCT) – descended on UCT’s Chemistry Department for the SACI/RSC Western Cape Young Chemists’ Symposium. The aim of the annual gathering is to provide an opportunity for postgraduates in the chemical sciences to meet one another, to present their research to their peers and to benefit from discussions with those from other institutions. Given that we live in an age of science but in a country with poor scientific literacy, one of the themes of this year’s symposium was the importance of science communication. Prof David Gammon presented the opening address and Prof Kelly Chibale,

Director of the UCT Drug Discovery and Development Centre (H3-D) the opening scientific lecture. The remainder of the day comprised short research talks by MSc and PhD students from the four institutions and spanned all areas of physical, inorganic and organic chemistry and represented applications as diverse as health and disease, environmental sustainability and catalysis. The lunch hour, tea breaks and poster session provided delegates with opportunities to engage with one another and forge new connections.

The talks and posters were adjudicated by a panel of post-doctoral students from UCT and SU. Congratulations to Varia Nikolayenko for her winning presentation on photochromic compounds and Johnel Giliomee for her poster on block copolymer vesicles on mammalian cell scaffolds. Both from SU, the winners received beautiful coffee table science books which were generously sponsored by the RSC. The runners-up in the oral presentation category were Kathryn Wicht (2nd) and Daniel Kusza (3rd) and, for the poster presentations, Marwaan Rylands (2nd) and Sheperd Siangwata (3rd). All the runners-up were from UCT and received certificates and cash prizes.

After the prize-giving, the day concluded with the RSC's 28th PD Hahn Inorganic Lecture by Prof Selwyn Mapolie from Stellenbosch University entitled "Functional Dendrimers: The Current Status and Future Prospects".

The feedback from delegates was most encouraging, their enthusiasm was palpable and we were impressed by the high standard of oral and poster presentations.

Our sincere thanks must go to Roxanne Mohunlal and John Woodland from UCT for organising this very successful event.



Winners, Judges, Organisers of the Western Cape Young Chemists symposium

Fabrizio L'abbate (UCT), John Woodland (UCT), Dr Chris Barnett (UCT), Daniel Kusza (UCT), Roxanne Mohunlal (UCT), Kathryn Wicht (UCT), Varia Nikolayenko (SU), Johnel Giliomee (SU), Nicola Dare (UCT), Marwaan Rylands (UCT), Sheperd Siangwata (UCT), Dr Tameryn Stringer (UCT), Dr David Kuter (SU), Dr Preshendren Govender

AGM and lecture:

The 72nd SACI AGM of the Western Cape division was held on the 18 September 2014 in the De Beers building at Stellenbosch University. There were 41 people in attendance and it was good to see that a large number of these people were postgraduate students. There were 17 SACI members present and apologies were received from a number of others who were unable to attend.

The chairperson of Western Cape Section, Peter Mallon, covered the agenda including a chairperson's report and a financial report of the section. The winners of various SACI awards in the Western Cape were also congratulated. This included the 2014 Gold Medal Winner Len Barbour. The SACI Western Cape committee consists of Peter Mallon as chair, Robbie Luckay as secretary and Margaret Blackie as treasurer. Other members on the committee are: Gareth Arnott, Willem van Otterlo, Ivan Green, Delia Haynes and 3 student representatives from the 3 Western Cape universities. This SACI committee together with the members of the RSC Southern Section

Committee form the joint SACI/RSC coordination committee for the Western Cape.

The AGM was followed by Prof. Mallon introducing the 2013 Raikes Medal winner Prof. Erick Strauss. Prof Strauss was formally presented the Raikes Medal and certificate. Prof. Strauss then gave his acceptance lecture entitled “The ups and downs of pursuing coenzyme A biosynthesis as an antimicrobial drug target.” His intriguing lecture was well received with many points for discussion afterwards.



The Chair of the Western Cape Section Prof Peter Mallon formally handing over the Raikes Medal and certificate to the 2013 Winner Prof Erick Strauss

SACI/RSC Dinner of the Western Cape Section.

The joint annual dinner was hosted at the Stellenbosch Protea Hotel on the 30th of October 2014 in the magnificent surroundings of the Stellenbosch wine lands and was attended by an impressive 110 members and guest. There were an encouraging number of members from the industrial sector and a really impressive number of students. It is believed that the large student component, which was most welcome and appreciated, resulted from sponsorships by both SACI and RSC as well as some additional sponsorship from research groups. Needless to say, it was a resounding success and our thanks go to Gareth Arnott from the University of Stellenbosch for making the arrangements. Prof Peter Mallon, the current chair of the Western Cape Section of SACI made a number of awards at the event since the local committee had taken a decision to make SACI awards at occasions at which large numbers of members were present to reflect SACI’s recognition of the achievements of its members and to make this highly visible to all. Profs Klaus Koch and Ivan Green were presented with their certificates as Fellows of SACI. The SASOL Post Graduate medal was awarded to Kathryn Wicht from UCT and James Moir medals were awarded to Emile Mamedov from CPUT and Nicola Dare from UCT. The atmosphere at the dinner was tangibly infectious due to the many students attending and their participation in discussions among representatives from the four institutions in the Cape. Excellent food and wine were able to play their significant role in ensuring a memorable evening.



Profs I R Green and K Koch (SACI Fellows), K Wicht (SASOL PG medal), E Mamedov and N Dare (James Moir) and Prof PE Mallon chair of the Western Cape Section.

Prof Peter Mallon

Chair of the co-ordinating committee of SACI Western Cape

ANALYTICAL CHEMISTRY

No Report

CHEMICAL EDUCATION

The major and only activity of the division this year was the successful running of three chemical education workshops run by Dr Jerry Bell in July 2015. SACI was able to secure funding from ProSET with SACI itself funding the teachers' meals. The workshops were held as follows:

1. Durban 1-4th July at UKZN
2. Pretoria - 6-9 July to coincide with the SAASTE national conference at UNISA. Dr Bell also delivered a plenary address at the SAASTE conference on the 10th July.
3. Cape Town 12-14 July at UCT

They were facilitated by Dr Jerry Bell of the ACS

A full workshop report is attached.

Marissa Rollnick



FOR THE PERIOD MAY 2014 TO APRIL 2015

A) COMMITTEE and MEMBERSHIP:

Four committee meetings were held during the above period. The committee members are:

Dr Patricia Forbes (Chairperson)

Hannalien Meyer (Immediate Past Chairperson)

Dr Magda Rösemann (Treasurer, Vice-Chairperson)

Belinda Hickman Mosdell (Minutes secretary)

Prof Luke Chimuka and Dr Tyren Dodgen (Student Liaison)

Dr Yvette Naudé (Honorary Secretary and Membership)

Additional members: Anita Botha, Wiana Louw, Martin Brits, Vuyo Silwana.

Prof André de Villiers is the ChromSA representative for the Western Cape. Additional members of the Western Cape committee are Prof Ben Burger, Dr Ivan Green, Brenda Marx, Dr Iain Moodie, Dr Gordon Shephard, Dr Denice Smit, Dr Marietjie Stander, Dr Mare Vlok and Merrill Wicht.

Dr Martin Dovey is the ChromSA representative for KwaZulu Natal.

There are currently over 420 members on the ChromSA mailing list.

B) ANNUAL GENERAL MEETING:

The AGM was held on 9 September 2014 at the Analitika 2014 Conference in Parys and 28 people attended.

C) AWARDS:

The Research Group for plant metabolomics studies of the University of Johannesburg, under the leadership of Prof Ian Dubery in the Department of Biochemistry, was awarded the ChromSA Chromatographer of the Year award for 2014. The award was based on their scientific publications in the field of chromatography relating to the applications of both new and established chromatographic techniques. The award was presented to the recipients at a ChromSA event held on 25 March 2015 at UJ.

D) FINANCES:

The funds held by the National ChromSA division are >R411 000 (main income sources for the period were the receipt of the balance of the LC-MS short course profit and the Analitika 2014 profit), whilst ChromSA Western Cape has funds of ~R215 000.

E) EVENTS ORGANISED:

Numerous events were organized for our members during the period under review:

- The Analitika 2014 conference was successfully held in Parys from 7 to 11 September 2014. This event was organized jointly by SAAMS, ThermSA, ChromSA, the Spectroscopic Society and the Analytical division of SACI. ChromSA (including contributions from both National and Western Cape) sponsored two international plenary/invited speakers; postgraduate students' conference attendance and student poster and oral presentation prizes.
- SACI-KZN organized a GC seminar by Jack Cochran on 29 September 2014.
- In addition, the following lectures and events were held in Gauteng during the period under review:

Speakers	Title	Date	Sponsor
Dr Gordon Shephard	Unravelling the dark side of mother nature: 25 years with the fumonisin mycotoxins	11 June 2014	PerkinElmer
Dr Ed Connor	Helium crisis – what helium crisis?	22 July 2014	Peak Scientific
Dr Peter Gorst-Allman	High resolution, accurate mass, time-of-flight mass spectrometry and comprehensive gas chromatography (GCxGC), an awesome combination	22 October 2014	LECO
Madeliën Wooding and Prof Riette de Kock	Karoo Meat of Origin: Analysis of headspace profiles of lamb meat and fat from animals grazing on grass and Karoo Veldt And Sensory evaluation of food products	4 March 2015	Microsep
Prof Ian Dubery	Metabolomics at the interface of chromatography, mass spectrometry and chemometrics	25 March 2015	ChromSA

- The following events took place in the Western Cape:

Speakers	Title	Date	Sponsor
Dr Ed Connor	Helium crisis – what helium crisis?	24 July 2014	Peak Scientific
Dr Peter Gorst-Allman	High resolution, accurate mass, time-of-flight mass spectrometry and comprehensive gas chromatography (GCxGC), an awesome combination	14 August 2014	LECO
Dr Karl-Heinz Storbeck	The analysis of androgen metabolism in prostate cancer by supercritical fluid chromatography-tandem mass spectrometry	21 May 2015	ChromSA

F) FUTURE EVENTS:

ChromSA is assisting with sponsorship of both a plenary speaker and student attendance for the SACI 2015 Convention. Planning for the 2016 ChromSAAMS Conference will be the primary focus for the year ahead and a number of lectures and events as well as a short course are also planned.

G) CONCLUDING COMMENTS:

It is very encouraging to note the continued increase in interest and involvement of scientists and postgraduate students in the activities of ChromSA. A special thank you is extended to Leandri van der Wat, a UP postgraduate student who maintains the ChromSA Facebook page, as well as to Laila Smith of the SACI Head Office, who is the Webmaster of the ChromSA webpage, which is linked to the SACI website.

It was only possible to hold so many successful events in the year with the dedicated hard work of the ChromSA national and regional committee members, who voluntarily give of their valuable time and energy. I would therefore like to sincerely thank all committee members for their contributions. The ongoing valuable support of ChromSA's sponsors is also highly appreciated and all ChromSA members who contribute to the vibrancy of the division are thanked for their participation in our events. Our excellent collaboration with the SAAMS division has led to many mutual benefits, and is seen as one of the key elements to the success of our division.



Dr Patricia Forbes

Chairperson, ChromSA

ENVIROMENTAL CHEMISTRY

No Report

PHYSICAL CHEMISTRY

No Report



3rd International symposium on Electrochemistry

**Materials, Analytical and Physical Electrochemistry Today (MAPET'15)
25-27 May 2015
University of the Western Cape, South Africa**

The 3rd International Symposium on Electrochemistry under the theme "Materials, Analytical and Physical Electrochemistry Today" (MAPET'15) brought together multi-disciplinary scientists showcasing the diversity of electrochemistry in energy systems and applications, electrochemical kinetics, nanomaterials, nanoprobess, biosensors, analytical and environmental applications. MAPET'15, hosted by SensorLab, University of the Western Cape (Bellville, South Africa), from 26-28 May 2015 took place in the New Chemical Sciences Building on the university's main campus.

Internationally renowned plenary speakers set the bar for ensuing scientific deliberations, at an unprecedented level, by introducing state of the concepts and challenges in electrochemistry. **Prof Emmanuel Iwuoha** (SensorLab, University of the Western Cape) focussed on smart nanomaterials for novel sensors, **Prof Shiping Song** (Shanghai Institute of Applied Physics, China) led the discussion on nanoprobes and nano-interfaces, whilst **Prof Aziz Amine** (Université HassanII-Mohammedia, Morocco) set the stage for biosensor systems. Academic representation by students and researchers from 10 African universities (UFS, UNW, UKZN, WITS, UJ, UP, CPUT, UWC and Polytechnik Namibia, State University Lagos) highlighted the wide range of research activities in electrochemistry and ensured a vibrant scientific programme, populated by excellent poster and oral presentations throughout.

The poster and exhibition session was strongly supported by dynamic representatives from Metrohm SA (Pty. Ltd.), Bruno Steiner Laboratory Consultancy (BioLogic), Anton Paar, Advanced Laboratory Solutions, Biocom Biotech and Bruker; with state of the art equipment on display and supportive discussions on services and instrumentation available to the ElectrochemSA community. The scientific and organising committees would like to congratulate the poster prize winners i.e. **Ms Miranda Ndipingwi** (SensorLab, UWC), **Mr Bivigou Boulingui** (Cape Peninsula University of Technology) and **Ms Amandla Jimana** (University of Johannesburg) on their first, second and third place wins, respectively. Poster prizes were kindly sponsored by Advanced Laboratory Solutions, SensorLab and University of the Western Cape, whilst the conference dinner for all student delegates was sponsored by Bruno Steiner Laboratory Consultancy.

Please watch the Electrochemistry divisional webpage for information regarding the 70th Annual Meeting of the International Society of Electrochemistry (ISE), which will be held in Cape Town (September, 2019)

Special issue:

The conference organisers have successfully negotiated with Trans Tech Nanoresearch journal for a special issue dedicated to the conference proceedings. The negotiations were protracted due to the multi-disciplinary nature of the symposium sessions. However the common theme of electrochemistry and nanoresearch, has been accepted as the theme for the special issue and online submission of contributions have been activated. The estimated publication date (Trans Tech Journals) is October –November 2015.

Conference budget:

Successful funding had been sourced from NRF (ZAR 60 000), International Society for Electrochemistry (ZAR 7500), UWC management (plenary speaker travel and accommodation) and SensorLab research group (Keynote speaker registration and accommodation). The registration fees were kept very low to facilitate participation for as many university delegates as possible. In the final analysis, 10 universities across South Africa was represented at the symposium. Student registration at R1000, was at an unprecedented low and perhaps not economically feasible, considering that catering, participation costs, wine tasting and conference dinner was included at no additional costs. However the bulk of the costs as well as poster prizes, were covered by sponsorships from exhibitors. Overall no losses were incurred and in fact a marginal profit (\pm R10 000) was realised.

Prof Priscilla G L Baker

Chair: Electrochemistry division 2006-2015

INORGANIC CHEMISTRY



The 17th South African Chemical Institute
Inorganic Chemistry Conference
28 June – 2 July, 2015



REPORT on INORG 2015: Chairman of the Local Organising Committee

The 17th South African Chemical Institute Inorganic Chemistry Conference (INORG 2015) (incorporating the Carman Physical Chemistry Symposium) was held at Rhodes University in Grahamstown from 28th June to 2nd July. According to decisions made at the end of the previous Inorganic conference, this event was designed to be run as an inexpensive conference, designed to attract good student attendance. Unlike the Bloemfontein and Durban conferences which has international sponsorship from the RSC and ACS as a lead to signing MoU's, this conference was sponsored purely by local sponsors and exhibitors, as the proposed establishment of MoUs with European counterparts have stalled. Sponsorship was particularly challenging under the present economic climate, with a number of major players in the field declining to participate. The books still need to be balanced, but preliminary figures suggest a small profit will be achieved.

The final attendance involved 133 delegates, with three accompanying persons. Unfortunately there was a no-show of 6 delegates (including one from India and one from Zimbabwe). The conference included delegates from six other countries (Russia – for the first time at a SACI conference; Japan; Germany; the UK; Israel; Botswana and Zimbabwe) either as plenary, keynote or ordinary delegates. The South African delegates presented research being done at 16 different Universities, as well as at the CSIR. Delegates from institutions not regular attendees of the Inorganic Conferences were personally invited to encourage their participation, and the attendance of their students. The reasonable cost of the conference allowed the participation of students from these institutions. The University of Botswana, Vaal University of Technology and Fort Hare University sent a good number of students.

A balance of plenary and key note speakers was made by the LOC to ensure a suitable range of topics in physical inorganic chemistry involved both international and local speakers, affording both established and younger leading researchers the opportunity to present their work.

There was an excellent attendance by students, with some 80 students presenting lectures, flash talks or posters. Monday afternoon was reserved for student flash-talks, with 20 students chosen to summarize in five minutes, the work presented in their posters in the poster session later that evening. This extended flash-talk programme worked particularly well.

The general feed-back the LOC has received was that topics covered were of high interest, that the conference was well structured and controlled.

In order to encourage attendance, especially for accompanying persons, the conference was timed to close at the start of the National Arts festival (hence the theme of the event: “Art and Science”) to allow delegates to experience some of the Arts festival after the conclusion of the conference. While many of the delegates did stay on (particularly students and foreign plenary and keynote speakers) this strategy did not draw the numbers of accompanying persons anticipated, which was a disappointment.

Recommendation for the future: The last three conferences had the benefit of having foreign sponsorship through RSC and ACS through MOUs signings, or by being run in conjunction with the Convention. Having the INORG Conferences separate within the same year as the Convention

makes sponsorship difficult. While over R100 000 was raised through sponsorships, a number of anticipated sponsorships from large players within chemistry did not materialise (even with some having provisionally been suggested as likely). I would strongly recommend that SACI return to the principle of having the Convention and Conference in alternate calendar years.



GARY WATKINS
CHAIRMAN, LOCAL ORGANISING COMMITTEE

MOLECULAR MODELLING

MINUTES OF THE SACI SPECIAL INTEREST GROUP – MOLECULAR
MODELLING DIVISION ANNUAL MEETING

4 DECEMBER 2014

VENUE: CONVENTION CENTRE SKUKUZA, KRUGER NATIONAL PARK,
MPUMALANGA

PRESENT:

No Surname First Name E-mail Address University

1. Abdulsalam Mahmud mahmudaaa@yahoo.co.uk WITS
2. Coetzee Stefan spookperd@gmail.com UP
3. Conradie Jeanet ConradJ@ufs.ac.za UFS
4. Govender Penny pennyg@uj.ac.za UJ
5. Janse v Rensburg Werner wjvrensburg@csir.co.za CHPC
6. Jansen v Vuuren Daniël 21181780@nwu.ac.za NWU
7. Landman Marilé marile.landman@up.ac.za UP
8. Lopis Anton alopis@csir.co.za CHPC
9. Magu Martin magujnr@gmail.com UJ
10. Maronedzwe Ephraim Ephraimm18@gmail.com UJ
11. Mangdo Lehlohonolo lehloh@yahoo.com CHPC
12. Mbele Sibusiso Eric embele@csir.co.za CSIR
13. Monama Nkwe Oscar nmonama@csir.co.za CSIR
14. Shukla Sudheesh K. sudheeshkshukla@gmail.com sudheeshs@uj.ac.za UJ
15. Ungerer Marietjie 20068980@nwu.ac.za NWU
16. van der Merwe Marina mmvdmerwe@gmail.com UP
17. van Rooyen Peet PHVR@up.ac.za UP

APOLOGIES:

Prof Gert Kruger (GK) (Chair) kruger@ukzn.ac.za UKZN

WELCOME

Dr CGCE van Sittert acted as the chair for the meeting. The chair welcomed all members present. Dr Werner Janse van Rensburg and Dr Anton Lopis are mentioned specifically since this is the first meeting that they are officially part of the CHPC. The minutes of the 2013 SIG meeting acts as agenda for the meeting.

1. SOFTWARE REQUIREMENTS/INVENTORY

- The contact person at the CHPC is Oscar Nkwe.
- Eric Mbele encourages the users to use the helpdesk to log calls.
- First use helpdesk, then Dr Anton Lopis and then Dr Werner Janse van Rensburg.

MATERIAL STUDIO (MS)

- Three versions, MS 5.5, 6.0 and 7.0, are available. In 2015 version 5.5 will be replaced by 8.0.
- The list of modules available can be obtained from Oscar Nkwe.
- The users are advised to use the default memory setting.

AMBER 12

The license is outdated. Users are requested to contact the CHPC if there is a need for AMBER.

GAUSSIAN 9

- Gaussian 09 version d01 is available.
- Two examples how to run Gaussian on the CHPC facility are available on the Wiki.
- Gaussian developers say it is normal to experience problems with large systems from time to time. Information will be provided on the Wiki.
- The Gaussian 09 version d01 has a better compatibility with Amber.
- When using Gaussian, use 8, 16, 24 or maximum 32 CPUs on the same node to eliminate memory problems.
- Anton Lopis will address problems related to Gaussian and Amber.

VASP

- The CHPC does not have a license for VASP and users need to supply their own license. In this case the users must also inform the VASP developers that they are using their license on the CHPC facility..

Schrödinger

- Is available.
- No users present.
- Users need their own license.

Symmetry Adapted Perturbation Theory (SAPT) ----- freeware

- This program did not work and is not available any more.

NWCHEM

- No feedback, no complaints received.

NAMD

- Is available.

DESMOND

- Not installed.

PIPELINE PILOT (PP)

- It is not available in MS. Users must request Oscar Nkwe if the program is needed.

QUANTUM EXPRESSO

- Is available.

GROMAX

- Is available, users must request if the program is needed.

MOLCAS

- No feedback

DL Polly

- Is available. People of Limpopo are using it.

SEVERAL ADDITIONAL SMALL PROGRAMS.

- A list of the programs, as well as the number of users of the programs, will be placed on the Wiki.

TOP PROGRAMS USED ON CHPC

- The top programs used on the CHPC are GAUSSIAN and a weather simulation program NELO.

PROTOCOL FOR NEW SOFTWARE

- *Identify the software*
- *Interest must be generated from the computational community*
- *Rally support from the same community*
- *Identify a key person that will drive the above process from start to finish including getting the support of the CHPC based on the above criteria*
- The person in need of the software tests the software before requesting the CHPC to install it.

2. QUEUING SYSTEM

- Currently there are no complaints.

3. TRAINING ACTIVITIES

- Users are requested to help new students with basic Linux.
- Advertise training opportunities.
- There is information on the Wiki on basic Linux.
- MS and Discovery studio workshops will be presented in March.
- The SIG request the following for training activities during the CHPC National meeting 2015:
 - i) Workshops must not be parallel
 - ii) Workshops must distinguish between the introductory and advanced slots that the users can choose what to attend
 - iii) Short introductory to scripting workshop

4. GENERAL/SPECIFIC PROBLEMS

No feedback

5. WEB

6. RESEARCH OUTPUTS

Remember to acknowledge CHPC and sent copies of outputs to Oscar Nkwe.
The % outputs of Chemistry decreased but is still at the top.

7. OTHER

- The suggestion to invite a high flyer in computational chemistry for the 2014 Annual meeting did not realize.
- Dr Werner Janse van Rensburg is the head at the CHPC for computational chemistry with Dr Anton Lopic helping him. Two additional persons may be appointed. Please address scientific problems to them. The goal is to use the CHPC facilities optimal.
- If the SIG needs more than one meeting per year, Dr Werner Janse van Rensburg should be contacted.

ORGANIC CHEMISTRY

The Organic Division of the South African Chemical Institute organised and hosted the first **SACI-ACS Bi-national Organic Chemistry Conference (BOCC-2014) (incorporating the 13th Franck Warren Organic Chemistry Conference) in Stellenbosch during the period of 30 November-4 December 2014**

The Committee took the position that it was opportune for the Organic Division to form a similar partnership with the ACS as it had done with the RSC and German Chemical Societies in the past. This conference represents the first held between the SACI and the ACS chemical societies and was hosted at the most professional STIAS Conference Venue associated with Stellenbosch University. The conference was attended by 165 delegates of which numbers included close to 100 postgraduate students. The conference program was built around 14 plenary speakers comprising 9 from the USA and 5 from South Africa (1 h), 10 invited (30 min) and 12 short lectures (20 min) – the latter two categories were populated by South African speakers.

The following events were additional highlights of the conference:

- 30th Nov - An evening **opening event** held in honor of and to initiate the establishment of an ACS chapter in South Africa. Brief welcomes were presented to the delegates by the conference chairperson, Prof Willem van Otterlo, Prof Ivan Green (on behalf of the Organic Division of SACI), Prof Marisa Kozlowski (on behalf of the ACS), Prof Charles de Koning (Chairperson of the South Africa International Chemical Sciences Chapter) and a message of welcome was read from Prof H N Cheng (Chair of the ACS International Activities Committee). This was followed by the first two plenary lectures.
- 1st and 2nd Dec - 20 very successful postgraduate student and postdoctoral fellow “**poster flashes**” comprising of only 3 PowerPoint slides and 5 minutes presentation time. This was followed by an evening **poster session** (2nd Dec) giving 96 postgraduate students and postdoctoral fellows the opportunity to present their research to the conference delegates.
- 3rd Dec – **Conference outing** to Kirstenbosch Botanical Gardens (on the slopes of Table Mountain), a visit to the Two Oceans Oceanarium in Cape Town followed by a **conference dinner** at the scenic “Cape Point Vineyards”. During the dinner, 10 poster and poster flash prizes were awarded to postgraduate delegates.
- The conference was closed by a plenary lecture presented by Prof Roger Hunter, in recognition of being invited as the “Frank Warren” lecturer for the conference. The conference was subsequently closed with a short round of acknowledgments and thanks, followed by a cocktail function.

The following speakers gave well received plenary presentations at the conference: **from the USA** – Profs Scott Snyder, Richmond Sarpong, Craig Forsyth, Armer Zakarian, Marisa Kozlowski, Clay Bennett, Lawrence Williams, Jef de Brabander and Vladimir Gervorgyan; **from South Africa** – Profs Kelly Chibale, Mike Davies-Coleman, Roger Hunter, Bert Klumperman and Erick Strauss.

As a member of the Organizing Committee and the conference delegates, I gratefully acknowledged the ACS for financial support they provided to subvent travel for all the ACS delegates as well as their scientific and social input into the conference. This interaction was invaluable and helped create a collegial atmosphere in which all aspects of Organic Chemistry could readily be discussed and presented.

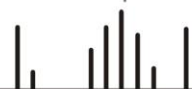
The Committee comprised of colleagues from the Universities of Stellenbosch, Cape Town and one person from Pharmaceutical Chemistry at the UWC. Due to a rather sparse income from sponsorships, the committee did all the work itself and did not involve any outside agencies. We used our own time, created our own website and managed it, did our own financial disbursements, kept our records and actually made a slight profit which has been communicated to SACI. This took quite a toll on the Committee but was worth the effort since extremely good networks have been established with our American colleagues which bodes well for the future.

The Committee is of the opinion that by incorporating an International partner within the programme of the speciality conventions and waiving their registration and accommodation fees, it raises both the standard and interest of the event which translates into better attendance and benefit to the younger members of a Division.

Emeritus Professor Ivan R Green
Chairperson of the Organic Chemistry Division
Department of Chemistry and Polymer Science
University of Stellenbosch



Supporting all Mass Spectrometry activities in South Africa
A Division of the South African Chemical Institute
www.saams.up.ac.za



Report for the period July 2014 to June 2015

1. Committee

Four committee meetings were held during the year. The committee members are:

Mike Britton (Chairperson)

Duncan Cromarty (Vice-chairperson)

Schalk de Kock (Immediate-past Chairperson and Treasurer)

Egmont Rohwer (International Representative)

Maré Linsky (Minute Secretary)

Tony Hassett (Membership and Webmaster)

Louis van Huyssteen (Vendor Industry Representative)

Ljiljana Marjanovic

Eve Kroukamp

Brendon Naicker

Regional representatives:

Johan Jordaan North-West Province

André de Villiers Western Cape

Hugh Patterton Free State

The term of office of the current committee ends in July 2015, when Duncan Cromarty will take over from Mike Britton as Chairperson.

2. Membership

SAAMS currently has 366 members.

3. Finances

On 30 April 2015, SAAMS' assets amounted to R272 092.

4. Functions and activities

IMSC 2014 (Geneva, Switzerland, 24 to 29 August)

Six delegates from South Africa attended the 20th International Mass Spectrometry Conference. Egmont Rohwer represented SAAMS at a meeting of the International Mass Spectrometry Foundation (IMSF) held during the Conference.

Analitika 2014 (Parys, 7 to 11 September)

SAAMS, together with ChromSA, the Analytical Division, ThermSA and the SA Spectroscopic Society (SASS), organised Analitika 2014, which was attended by a total of 198 delegates and exhibitors. Five plenary and eight invited keynote lectures, as well as 54 oral and 62 poster presentations covered all aspects of analytical chemistry. The exhibition of analytical equipment and consumables was supported by 17 of the leading local suppliers.

After R50 000 was placed in a ring-fenced account as seed funding for the next Analitika conference, the remainder of the profit from the conference was divided equally between the five organising bodies.

SAAMS AGM (Parys, 8 September)

Seventeen SAAMS members attended the Annual General Meeting, which was held during Analitika 2014.

Laboratory tour of AMS facility (iThemba LABS, 20 November)

Following an interesting presentation on “100 years of mass spectrometry in the geosciences” by Prof Jan Kramers from the University of Johannesburg, Stephan Woodborne gave an overview of the new Accelerator Mass Spectrometer and took the 33 delegates on a laboratory tour of the new facility. The afternoon concluded with refreshments sponsored by PerkinElmer.

MS applications at the CSIR (Pretoria, 19 March)

More than 50 delegates attended the presentations by Brendon Naicker and Prof Paul Steenkamp on chromatography and mass spectrometry applications in tuberculosis and small molecule research, and enjoyed the meal sponsored by Separations afterwards.

Uncertainty in Measurements (Tshwane University of Technology, 11 June)

This seminar, organised jointly by SAAMS and the SA Spectroscopic Society (SASS), was presented by Steve Sidney of the National Laboratory Association. The topic was debated further by the 40 delegates over snacks sponsored by Microsep.

5. General

During the year SAAMS created a LinkedIn group and Facebook account and changed its e-mail address in order to improve communication with our members.

The achievements of the past year are the result of the dedication and hard work of the SAAMS committee members, the sustained support from our sponsors and the active participation of our members. Thank you all for your valuable contributions!

Mike Britton
SAAMS Chairperson

ACS
Chapter Report July 2015

Binational Organic Chemistry Conference

On 30 November 2014 the ACS chapter was launched at the Binational Organic Chemistry Conference (BOCC-2014). For the first time the Organic Divisions of the ACS and SACI hosted a conference at Stellenbosch University, incorporating the 13th Frank Warren Conference. Speakers from the ACS and Professor de Koning gave presentation and this was followed by a cocktail event opening the conference as well as the launch of the ACS chapter. SACI provided R5000 for this event. During the course of the conference the following invited speakers from the US gave presentations. Clay Bennett (Tufts University), Jef De Brabander (UT Southwestern Medical Center), Craig Forsyth (Ohio State University), Vladimir Gevorgyan (University of Illinois at Chicago), Marisa Kozlowski (University of Pennsylvania), Richmond Sarpong (University of California, Berkeley), Scott Snyder (Scripps Research Institute), Lawrence Williams (Rutgers University) and Armen Zakarian (University of California, Santa Barbara). These invited speakers certainly added value to the conference and more links have been established between organic chemists in the US and South Africa.

Chem Education workshop

In July 2013, SACI signed a memorandum of understanding with the American Chemical society and became aware of the involvement of the Office for International Activities of the ACS in organizing teacher workshops in Chemical Education. The possibility of having such workshops in South Africa was an exciting and valuable prospect. The office for international activities contacted SACI with an offer to send a facilitator to South Africa at their expense if SACI would fund the local expenses for the facilitator and the workshops.

SACI EXCO members, including President Prof Simon Lotz (University of Pretoria) and Chemical Education division head Marissa Rollnick (Wits University) have been in planning and communication with Dr Bradley D. Miller, Director, Office of International Activities American Chemical Society, as well as Dr Jerry Bell, the ACS technical expert for chemistry education and professional development. A budget was drawn up for the activities but funding was not available to run them. A proposal was thus put to PROSET with a budget of R65,000 for workshops in three centres in South Africa in July 2015. ProSet agreed to contribute R50,000 funding all Dr Bell's in country expenses and the expenses of the workshops with the exception of the teachers' lunches. These were funded by SACI.

Workshop Description: The teachers at each workshop engaged in activities, discussion, analyses and assessment that help understand the relationships among basic chemical concepts. Research on teaching and learning indicates a positive correlation between teacher content knowledge and student learning. The goals of this workshop were to enhance and enrich secondary chemistry teachers' knowledge of and interrelationships among chemical concepts and their consequences through engagement in activities, discussion, and analyses that demonstrate how lessons on these concepts can be presented in a way that stimulates student thinking and prompts exploration of the complexity of the concepts. The content and structure of the workshop draws on several decades of experience the American Chemical Society has in activity-based curricula development.

The workshops

The workshops were held in Durban, Cape Town and Pretoria as follows:

1. Durban 1-4th July at UKZN, Durban Westville Campus
2. Pretoria - 6-9 July to coincide with the SAASTE national conference at UNISA. Dr Bell also delivered a plenary address at the SAASTE conference on the 10th July.
3. Cape Town 14-16 July at UCT

At each workshop teachers received a workshop manual and a USB with presentations, online material and an electronic version of the manual. Feedback was received day by day.

FASC event in Nigeria

The ACS gave financial support to 4 delegates from Africa (young academics) to attend the FASC/CSN conference in Abuja, Nigeria, Sept 7-11 2015. This was coordinated by the SACI office. The ACS also supported an afternoon event for students at the Nigeria event.

Prof Charles B de Koning



Summary of activities for 2015

- Support for Sci Bono Science centre including the Emasondosondo Chemistry Bus and donation of textbooks for schools
- Support for KZN Science Centre
- Support for local chemistry conferences Indaba8 and SACI2015 (poster prizes and student sponsorship)
- Donations of RSC books to local universities (UJ Doornfontein; NWU – Mafikeng; U Zululand)
- Judging and special subject prizes for Chemistry projects at Eskom Young Scientists Expo
- Support for Seabe High School Project (Peter Malatji)
- Support for P Forbes Spec UP project
- Support for CIGRE teachers

Increased RSC activity in South Africa

- Road shows at SA Universities – Wits, UJ, UKZN, UCT (Nov 2014) – well received and successful in recruiting a lot of new members
- Ongoing support for Pan-African Chemistry Network (PACN)
- Hydrogen storage workshop (Sep2015) in conjunction with the British Council.

Involvement with SACI

- Proposed Joint RSC SA North/SACI Gauteng annual function (date tba)
- Sponsorship of prizes at SACI Young Chemists symposium
- Sponsorship of prizes at U Limpopo/U Venda symposium
- Sponsorship prizes for KZN Student symposia
- Support for KZN Schools' Crystal growing competition
- Organisation of public lectures to promote Chemistry

Ian M Bratt (Dr)

Chairman, RSC SA North



The committee of the division has been active in a variety of areas this year, although at this stage a significant proportion of our activities are yet to bear fruit.

The 5th IUPAC Conference on Green Chemistry was hosted by SACI in Durban from the 17th – 21st August 2014. It was a great success, in no small part to the efforts of the Kwa-Zulu-Natal based organizing committee (including Liliana Mammino and Neil Colville). Thanks are also due to Helen Driver (RSC) and the many UKZN students and staff who worked behind the scenes to make everything run smoothly. The Facebook page was used effectively throughout the conference and afterwards to communicate with the delegates and share experiences. The conference was a particularly useful opportunity for us to see all the many useful Green Chemistry initiatives being pursued in Africa.

The committee held its first virtual meeting in May, putting in place some strategies for growing Green Chemistry going forward:

1. Starting in 2016, an award will be made to a researcher in South Africa who has published the best contribution in terms of Green Chemistry. Details are to follow in the SACI newsletter.
2. Materials are being developed to help Universities incorporate Green Chemistry principles into their practical programmes.
3. A blog has been started to present popular views on Green Chemistry as well as to showcase research being done here and around the world.

We look forward to a good year in 2016 as we begin to roll out some of these ideas and see Green Chemistry become more entrenched in our way of thinking as chemists in South Africa.

Rosa Klein



Committee

Chairperson: Dr Liezel van der Merwe (UP) (also ICTAC Representative)

Immediate Past Chairperson: Dr. Kobus Wagener (Necsa)

Treasurer: Ms. Isbé van der Westhuizen (UP)

Secretary: Dr. Andrew Pienaar (Necsa)

Website/Communication: Mr. Benni Vilakazi

Regional Representative (KZN) Ms. Dashika Naidoo (IMP)

Regional Representative (WC): Prof. Chris Woolard (NMMU)

Applications in Thermal Analysis Conference 2015

After successful participation in Analitika 2015, feedback suggested that there exists a need to have an event focussed specifically on thermal analysis. Since all ThermSA events to date have been held in the Gauteng area, it was decided to have a conference in the Western Cape and hopefully improve membership numbers from that area.

The Applications in Thermal Analysis conference will be held on 17 and 18 August at the Stellenbosch Institute for Advanced Study (STIAS). The conference, which will also have workshop elements, will present contributions from speakers of academia and industry as well as a poster session.

International Ties

ThermSA is currently working with the Instituto Internacional de Análise Térmica in Brazil to develop thermal analysis competence in both these countries. A representative from ThermSA also contributed to their July 2015 conference in Bauru, Brazil.

Dr Liezel van der Merwe

Chairperson: ThermSA

20 July 2015

FINANCIAL REPORT

SOUTH AFRICAN CHEMICAL INSTITUTE SECRETARIAT BUDGET AND BALANCE SHEET FOR THE PERIOD 1 MAY 2013 TO 30 April 2015

	2013-2014	2014-2015	2014-2015
Income	Budget	Received	Budget
Membership Fees	R 430 267.00	R 388 236.40	R 460 000.00
Journal Income	R 20 000.00	R 17 884.95	R 20 000.00
IUPAC Income		R 11 660.00	R 12 000.00
Merchandise/Ties and Scarfs	R 2 000.00	R 600.00	R 10 000.00
Advertising Income	R 20 000.00	R 17 550.00	R 20 000.00
Admin donation from confrences		R 15 000.00	
Total Income	R 472 267.00	R 450 931.35	R 522 000.00

Expenditure	Budget	Paid	Budget
Journal Expenses	R 60 000.00	R 52 216.58	R 70 000.00
Bank Charges	R 4 500.00	R 6 036.09	R 5 000.00
Computer/Software/Pastel/Internet/SAJC	R 35 000.00	R 15 383.40	R 20 000.00
Courier and Postage	R 3 000.00	R 7 816.81	R 3 500.00
Entertainment Expenses (Council/Exco Functions)	R 10 000.00	R 8 297.76	R 10 000.00
General Expenses	R 5 000.00	R 7 147.34	R 6 000.00
Printing, Stationery and Photocopying	R 5 000.00	R 13 949.64	R 10 000.00
Salaries and Wages	R 271 388.00	R 346 214.67	R 375 388.00
Telephone and Fax	R 10 000.00	R 8 743.94	R 10 000.00
Travel and Accommodation	R 20 000.00	R 26 742.07	R 25 000.00
Presidents Travel	R 10 000.00	R -	R 10 000.00
Subscriptions (IUPAC/FASC/EBSCO/NSTF)	R 3 500.00	R 16 495.00	R 16 000.00
Auditors	R 10 500.00	R 9 000.00	R 9 000.00
Medal Prize Money and Minting of Medals	R 15 000.00	R 14 303.27	R 15 000.00
Medal Functions/Donations	R 3 000.00	R -	R 5 000.00
Rental	R -	R 18 000.00	R 24 000.00
Merchandise	R 23 560.00	R -	
Total Expenditure	R 489 448.00	R 550 346.57	R 613 888.00

Item	Profit/Loss	Profit/Loss	Profit/Loss
Total Income	R 472 267.00	R 450 931.35	R 522 000.00
Total Expenditure	R 489 448.00	R 550 346.57	R 613 888.00
Balance	R -17 181.00	R -99 415.22	R -91 888.00

FUNDS

SACI Admin account	Movement	Opening Balance	Total
UKZN Admin account	R -	R 1 114.15	R -
Wits Admin account	R 29 371.59	R -	R 29 371.59
Standard Bank Cheque Account	R 60 407.77	R 75 350.57	R 135 758.34

Central Fund Account	Interest/Movement	Opening Balance	Total
Investec Equity Fund	R 87 957.79	R 338 485.45	R 426 443.24
Old Mutual	R 72 320.03	R 338 485.48	R 410 805.51
Standard Bank Market Link Account	R 2 359.99	R 376 086.12	R 378 446.11
SIM General Equity fund	R 52 321.24	R 338 485.48	R 390 806.72
Stanlib Prpperty Income Fund	R 138 051.53	R 338 485.48	R 476 537.01
Total	R 353 010.58	R 1 730 028.01	R 2 083 038.59

Total Interest on Investments	R 350 650.00
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Seed Monies and Loans	Loan	Total
Frank Warren	R 50 000.00	R 50 000.00
	R -	
Total		R 50 000.00

Profit Derived from Conferences	2012	2013	2014
Total	R 1 163.00	R 285 799.00	R 60 037.46

Divisions' Market Link Accounts	Movement	Opening Balance	Total
Inorganic Chemistry	R 3 434.39	R 90 020.98	R 93 455.37
Computational Chemistry	R 154.41	R 6 106.65	R 6 261.06
Chemical Education	R 50 005.24	R 975.18	R 50 980.42
Eastern Cape	R 1 155.70	R 87 854.51	R 89 010.21
Analytical	R 25 330.78	R 228 966.52	R 254 297.30
Organic Chemistry	R -29 404.79	R 144 620.55	R 115 215.76
Kwazulu Natal	R 57 685.46	R 27 178.83	R 84 864.29
Electrochemistry	R 1 792.68	R 46 989.60	R 48 782.28
Gauteng	R -21 932.01	R 91 335.52	R 69 403.51
ThermSA	R 12 311.49	R 9 743.62	R 22 055.11
Green Chemistry	R 62 130.63	R 20 635.00	R 82 765.63
Total		R 658 478.69	R 917 090.94

The full audited report is contained at the end of this report. As in the past I have used a simpler budget to keep track of our financial state of affairs. This is given below. Key points found in this one page statement are highlighted in the report.

The SACI financial base continues to be sound. Key features are (i) we have made no loss on conferences for a few years now; indeed the conferences have produced good profits and (ii) our investments have yielded excellent returns.

We still do not cover running expenses from our membership income but this loss is covered by the profit on investments and conferences. The overall profit for 2014/2015 is shown below

Loss (running expenses)	-R99415.22
Investment profit	R353010.58
Conference profits	R60037.46
Overall profit	R313632.82

The current SACI asset base consists of (i) investments of R2083038.59 (up from R1730028.01 in 2013/2014), (ii) seed monies of R50000 and (iii) bank assets of R165129.93. Further, the Divisions and Sections have reserves of R917090.94. It is also to be noted that there are still some Divisions/Sections with reserves not listed in the above totals.

Comments on Budget for 2014/2015

The budget items remained the same as in previous years. The major increase in the past year expenses relates to salaries and office rental costs. In 2014/2015 the monies received (excluding interest on investments) led to a loss (R99415.22); close to that in the budget (R91888.00). The spending patterns were generally close to the budget items which means we are capturing our spending and income patterns reasonably well.

Of note:

- 1) Decreased membership fees.
- 2) Profit from admin of non SACI conferences
- 3) Presidents travel allowance not used
- 4) The salary and rental costs were lower than budget. This relates to the lower payment at UKZN for office space for the first few months of 2014.

Investments

The changes instituted to our investment portfolio by Prof Martincigh have led to exceptional growth in our investments in the past financial year. The combined investments with Stanlib have led to an ease in the administration of the investment and we also have an advisor who provides quarterly advice on the performance of the investments. The investment grew by R353010.58 during the financial year

Central Fund Account		Profit/Loss		Opening Balance		Total
Investec Equity Fund	R	87 957.79	R	338 485.45	R	426 443.24
Old Mutual	R	72 320.03	R	338 485.48	R	410 805.51
Standard Bank Market Link Account	R	2 359.99	R	376 086.12	R	378 446.11
SIM General Equity fund	R	52 321.24	R	338 485.48	R	390 806.72
Stanlib Prpperty Income Fund	R	138 051.53	R	338 485.48	R	476 537.01
Total	R	353 010.58	R	1 730 028.01	R	2 083 038.59

Budget 2015/2016

Fees

These were increased by ca 6%, in keeping with inflation.

Year	Patron	Company	Member	Associate	Married	Retired	Student	post docs
Increase from 2014-								
2105	8%	8%	5%	6%	6%	6%	4%	6%
2015-2016	13000	6500	700	350	350	180	125	160

Profit and loss

In the new budget an anticipated loss of R172000 (running expenses versus membership fees/non-interest income) is expected. This will again need to be covered by conference profits/investment interest.

Thanks

I wish to record my thanks to Ms Laila Smith for her ability to keep the SACI accounts up to date and in sound order.

Prof Neil Coville
SACI Treasurer 2014/2015

PRESIDENTS OF THE INSTITUTE

1916-1917	J S Jamieson	1957-1958	A L Abbot
1917-1918	R B Denison	1958-1959	H A E McKenzie
1918-1919	J A Wilkinson	1959-1960	G W Perold
1919-1920	J McCrae	1960-1961	F L Warren
1920-1921	J Lewis	1961-1962	W S Rapson
1921-1922	G H Stanley	1962-1963	F L Clark
1922-1923	J Gray	1963-1964	E F C H Rohwer
1923-1924	H H Green	1964-1965	L J le Roux
1924-1925	J Moir	1965-1966	R E Robinson
1925-1926	H H Dodds	1966-1967	V Pretorius
1926-1927	J A Wilkinson	1967-1968	M Lamchen
1927-1928	B de C Marchand	1968-1969	M Mrost
1928-1929	C C Frye	1969-1970	P C Carman
1929-1930	M Rindl	1970-1971	P R C Cooke
1930-1931	F W Fox	1971-1972	J F Preston
1931-1932	A Harding Kloot	1972-1973	F E Malherbe
1932-1933	H R Raikes	1973-1974	C F Garbers
1933-1934	B van der Riet	1974-1975	N Stutterheim
1934-1935	J B Robertson	1975-1976	S Goodman
1935-1936	St C O Sinclair	1976-1978	V C O Schuler
1936-1937	J A McLachlan	1978-1979	D E A Rivett
1937-1938	T D Hall	1979-1980	A Goosen
1938-1939	F J de Villiers	1980-1981	R R Arndt
1939-1940	H J van Eck	1981-1982	R O Perry
1940-1941	F G Braithwaite	1982-1984	C J H Schutte
1941-1942	J P van Zyl	1984-1986	P Bloom
1942-1943	W F Barker	1986-1988	J R Bull
1943-1944	P Kamerman	1988-1990	J D Bradley
1944-1945	J E Worsdale	1990-1992	A M Heyns
1945-1946	T J Wilken Jordan	1992-1994	M D Booth
1946-1947	E Taberner	1994-1996	T M Letcher
1947-1948	H L de Waal	1996-1998	E L J Breet
1948-1949	W H Dyson	1998-2000	C J Rademeyer
1949-1950	H J Koch	2000-2001	B Rae
1950-1951	P v d R Copeman	2001-2003	G E Jackson
1951-1952	L F Addis Smith	2003-2005	E Meintjies
1952-1953	A J Petrick	2005-2007	T A Ford
1953-1954	L D C Bok	2007-2009	N J Coville
1954-1955	S S Israelstam	2009-2011	I R Green
1955-1956	F W Hayes	2011-2013	J Darkwa
1956-1957	F Hawke	2013-2015	S Lotz

RECIPIENTS OF THE GOLD MEDAL OF THE INSTITUTE

1970	L H Ahrens	1993	R J Haines
1971	P C Carman	1994	A M Heyns
1972	S G Shuttleworth	1995	S E Drewes
1973	W S Rapson	1996	D Ferreira
1974	P E Rousseau	1997	N J Coville
1975	V Pretorius	1998	W McGill
1976	C van der Merwe Brink	1999	T M Letcher
1977	D G Roux	2000	M E Brown
1978	G J Stander	2001	J P Michael
1979	R E Robinson	2002	H G Raubenheimer
1980	C F Garbers	2003	L Nassimbeni
1981	P R Enslin	2004	B Burger
1982	GW Perold	2005	No Award
1983	J C A Boeyens	2006	T A Ford
1984	J R Bull	2007	P Kaye
1985	A M Stephen	2008	No Award
1986	M Peisach	2009	M R Caira
1987	P S Steyn	2010	No Award
1988	C W Holzapfel	2011	C J H Schutte
1989	No Award	2012	T Nyokong
1990	J G H du Preez	2013	B Klumperman
1991	No Award	2014	L J Barbour
1992	A Goosen		

RECIPIENTS OF THE RAIKES MEDAL

1961	P C Haaroff	1989	H M Marques
1962	A J de Koning	1990	C A Strydom
1963	No Award	1991	M D Adams
1964	No Award	1992	J H Potgieter
1965	No Award	1993	G H Verdoorn
1966	S E Drewes	1994	N V Jarvis
1967	W Robb	1995	M Raynor
1968	C H J Shutte	1996	No Award
1969	R A Basson	1997	No Award
1970	No Award	1998	No Award
1971	No Award	1999	K J Naidoo
1972	D P Botes	2000	M H S Gradwell
1973	R J Haines	2001	M J Mphahlele
1974	P S Steyn	2002	R I Stefan
1975	No Award	2003	No Award
1976	R D Hancock	2004	W A L van Otterlo
1977	G V Fazakerley	2005	No Award
1978	R van Eldik	2006	No Award
1979	K De Haas	2007	J R Zeevaart
1980	G J Mc Dougall	2008	O Q Munro
1981	T V Ashworth	2009	R Meijboom
1982	R L Paul	2010	M Fernandes
1983	No Award	2011	G Smith
1984	No Award	2012	H Tutu
1985	No Award	2013	E Strauss
1986	M O Albers	2014	A Lemmerer
1987	No Award		
1988	No Award		

RECIPIENTS OF THE AECI MEDAL

1961	P R Enslin, L A Anderson and W T de Kock	1979	G M L Cragg
1962	F J Joubert and T Haylett	1980	J C A Boeyens
1963	O A Swanepoel	1981	E Singleton
1964	V Pretorius and P C van Berge	1982	C Pohlandt
1965	M Peisach and C O Poole	1983	J M Koekemoer and G J Lourens
1966	C v d M Brink, W Nel, G H J Rall, J C Weitz and K G R Pachler	1984	No Award
1967	M B Hanley, S C Churms and E C Leisegang	1985	R M A von Wandruszka
1968	G W Perold and H K L Hunt	1986	E Singleton
1969	J Turkstra, G B Behrens and W J de Wet	1987	A E Watson
1970	W J Engelbrecht and M J de Vries	1988	C W Holzapfel
1971	J G H du Preez	1989	T A Ford
1972	J A van den Berg	1990	E Singleton
1973	J C A Boeyens	1991	P P Coetzee
1974	T W Steele	1992	J R Bull
1975	A Goosen	1993	A Amman
1976	P C Carman	1994	N J Coville
1977	E F C Rohwer and J J Cruywagen	1995	J F van Staden
1978	F E W Strelow	1996	P P T Kaye
		1997	T A Ford
		1998	J M Anderson

RECIPIENTS OF THE MERCK MEDAL

2000	J F van Staden	2008	P P Coetzee
2001	G H P Roos	2009	C W van der Westhuizen
2002	N J Coville	2010	N J Coville
2003	J C A Boeyens	2011	R H Simoyi
2004	I Cukrowski	2012	D A Katskov
2005	B Staskun	2013	D D N'Da
2006	H M Marques	2014	J Conradie
2007	J J Pienaar		

RECIPIENTS OF THE HENDRIK VAN ECK MEDAL

1983	A E Rupert	2000	No Award
1984	N Stutterheim	2001	No Award
1985	No Award	2002	P S Steyn
1986	No Award	2003	No Award
1987	No Award	2004	No Award
1988	No Award	2005	No Award
1989	No Award	2006	No Award
1990	No Award	2007	No Award
1991	C F Garbers	2008	No Award
1992	No Award	2009	No Award
1993	F E Malherbe	2010	No Award
1994	No Award	2011	No Award
1995	No Award	2012	No Award
1996	R R Arndt	2013	No Award
1997	No Award		
1998	No Award		
1999	No Award		

RECIPIENTS OF THE INDUSTRIAL CHEMISTRY MEDAL

1961	G E Mapstone	2003	No Award
1962	No Award	2004	K McIntosh
1963	No Award	2005	No Award
1994	A Geertsema	2006	No Award
1995	F Fisher	2007	No Award
1996	No Award	2008	No Award
1997	No Award	2009	No Award
1998	No Award	2010	No Award
1999	No Award	2011	J Dixon
2000	N Ravenscroft	2012	No Award
2001	T Grimmbacher	2013	No Award
2002	No Award		

RECIPIENTS OF THE MISCHA MROST (ANALYTICA) PRIZE

1977	J M Pratt	1996	G J Stander
1978	I R Leith	1997	J H Potgieter
1979	H J Hattingh	1998	No Award
1980	P Theron	1999	P Apps
1981	J Zlotnick	2000	N J Coville
1982	G L Moore	2001	E W Neuse
1983	M F Dutton	2002	No Award
1984	No Award	2003	S S Potgieter
1985	R Osborne	2004	No Award
1986	G L Moore	2005	P W Lotz
1987	M A B Pougnet and M A E Wandt	2006	No Award
1988	S Parris	2007	No Award
1989	T M Letcher	2008	No Award
1990	M A B Pougnet	2009	No Award
1991	C Pohlandt-Watson and E A Jones	2010	No Award
1992	D Gravett and L Salter	2011	No Award
1993	No Award	2012	No Award
1994	No Award	2013	No Award
1995	M J Laing		

RECIPIENTS OF SASOL POST-GRADUATE MEDAL

- 1994 J J Nair, O Q Munro, P G Mountford, M H S Gradwell
- 1995 B G Taverner, J L Scott, S L Roberts, P Mason
- 1997 J A Ferreira, J du Toit, V Sewram, D Bessarabov, A Horne
- 1998 M A Hearshaw, W A L van Otterlo, J J C Erasmus, H A Mahomed, J J C Grove
- 1999 H van Rensburg, M A Fernandes, G Cripps
- 2000 S Otto, A Rousseau
- 2001 K Kaschula, W van Rensburg, K Blann
- 2002 H de Bod, M Onani, C B Perry, D Webber
- 2003 L Mpholle, K Barnes, C Gray
- 2004 A Landman, E E Mmutlane, T le Roex, M Shezi
- 2005 C Pelly, N Govender
- 2006 A Lemmerer, J N Zimba, M Lawton
- 2007 G Morgans
- 2008 S D Mhlanga, K de Villiers, S Hadebe, M Shaw
- 2009 S Pelly, C B Barnett, G A Boyle, T I Nkambule
- 2010 D Bezuidenhout, E Nxumalo
- 2011 W Motswainyana, O Onajole, D Cruishcank, A Shaikjee, R Wamsley
- 2012 T Chetty, CF Zipp D, Kuter
- 2013 D Ondigo, M Maubane, N Njuguna, H Wahl
- 2014 A S Ogunlaja, MM Johnson, KJ Wicht, C Obuah

RECIPIENTS OF THE JAMES MOIR MEDAL

- 1999 J P K Reynhardt, A J de Villiers, R Best, K Thornell, S V Goodall, K Blann, U Naidoo, N I Harmse, D P de Carcenac, R Cock, J C Nel
- 2000 N Grootboom, E Lamprecht, Amaluleke, D Rautenbach, G L Natrass, A M Castille, W Gerber
- 2001 J van Rensburg, T Le Roex, X K Peter, J Taljaard, K Lobb, G Venter, A van Aswegen
- 2002 L Greyvenstein, D Patten, Y Baijnath, T Raasch, K Stern, M du Toit, S Botha, O Horwood
- 2003 V Buchanan, E T Borkum, E Erasmus, P Reddy, P Franklyn
- 2004 W Barnard, R Gessner, A Gordon, Z Hall, G Lloyd, L Rota
- 2005 D I Bezuidenhout, C Booyjzsen, J Coetzee, R Janse van Vuuren, Y Koen, C A Laing, E Marais, S Mohamed, M S Mokhadinyana, N Moodley, J Paraskevopoulos, T S Pentz
- 2006 T Paquet, I Rootman, N Rose, P D R Kptze, S Travis, N Miti, D Duma, V A Patterson, M van Rhyn
- 2007 L Loots, M Adendorf, S Botha, MW Smith, P Skillington, N E Hendricks, T Hughes, B Waldron, M N Kay, D J Brankin
- 2008 SA Herbert, KE Mason-Jones, N Silwana, C Reynolds, JI du Toit, A Manival, A Cullen, TR Madihlaba, B Truscott.
- 2009 E Hanekom, W Xu, S M Jing, C F Zipp, Y Nortje, K J Gillham, B Dzepina, P Nyamukamba, A C Conibear, A Ilchev, P I Tshoke, K Potgieter B Simpson
- 2010 C Eley, A Falch, I Grobler, K Hadje Georgiou, N Jijana, P Khalili, R Koen, L Komarsamy, H Maritz, W Petersen, A Pholosi, CA Renison, BK Sebogisi, P Sobantu, S Thompson
- 2011 M Lephoto, H Mungondori, R Pretorius, C Rassie, S Robinson, T Pieterse, A Sayed, K Wicht, M Ungerer
- 2012 L van der Westhuizen, L van der Wat, BB Davies, B Camden-Smith, J Coetzee, MB Ismail, T Gunther, JM Taylor, TN Phaahlamohlaka, I Clifford
- 2013 N Steyn, N Mvumvu, SF Douman, R Hartzenberg, L Dralle, EH Kamanga, FM Amombo Noa, AJK Kupeta, M Mohale
- 2014 E Mamedov, S Raghunath, I Strydom, PL Pohl, M Dunn, T Saywood, NA Dare, JBML Smit, S Chohan

RECIPIENTS OF THE CHEMICAL EDUCATION MEDAL

1993 M J Laing
1994 J Elsworth
1995 M Selvaratnam
1996 No Award
1997 GC Gerrans
1998 No Award
1999 S J Nel
2000 P Huddle
2001 No Award
2002 MS Rollnick
2003 No Award
2004 B Davidowitz
2005 No Award
2006 G O M Onwu
2007 M White
2008 M Potgieter
2009 GV Green
2010 E Steenberg
2011 P Loyson
2012 J D Sewry
2013 No Award
2014 P Forbes

RECIPIENTS OF THE SASOL

INNOVATOR OF THE YEAR AWARD

2002 No Award
2003 No Award
2004 M J Green
2005 I Smith
2006 No Award
2007 No Award
2008 No Award
2009 No Award
2010 No Award
2011 No Award
2012 No Award
2013 L J Barbour
2014 O Munro