

**Annual Report**  
**of the**  
**South African Chemical Institute**  
**(Incorporating the SA Institute of Assayers and Analysts)**  
4th August 2016 to 3rd August 2017



**THE SOUTH AFRICAN**  
**CHEMICAL INSTITUTE**

## COUNCIL

### Office Bearers

|                          |   |                   |
|--------------------------|---|-------------------|
| President                | : | Prof B Martincigh |
| Vice President           | : | Prof V Nyamori    |
| Immediate Past President | : | Prof S Lotz       |
| Executive Secretary      | : | Prof P Mallon     |
| Executive Treasurer      | : | Dr I Bratt        |
| Co-opted Member          | : | Dr M Booth        |
| Co-opted Member          | : | Prof N Coville    |

### Reporting Officers

|                             |   |                      |
|-----------------------------|---|----------------------|
| Publications Officer        | : | Prof G Kruger        |
| Publicity                   | : | Prof N Coville       |
| Webmaster                   | : | Mrs L Smith          |
| IUPAC                       | : | Prof J Darkwa        |
| SACNASP                     | : | Prof E Breet         |
| RSC                         | : | Dr I Bratt/ S Finney |
| ACS                         | : | Prof C de Koning     |
| SACI Student Representative | : | Bilal Ismail         |

### Chairpersons of Co-ordination Committees

|               |   |                    |
|---------------|---|--------------------|
| Eastern Cape  | : | Dr R Krause        |
| SACI North    | : | Dr R Mampa         |
| SACI Central  | : | Dr S Mhlanga       |
| Kwazulu-Natal | : | Prof W van Zyl     |
| Western Cape  | : | Prof W van Otterlo |

### Chairpersons of Divisions

|                           |   |                    |
|---------------------------|---|--------------------|
| Analytical Chemistry      | : | Prof N Nindi       |
| Chemical Education        | : | Prof H Drummond    |
| Chromatography (ChromSA)  | : | Mrs W Louw         |
| Electrochemistry          | : | Dr P Baker         |
| Environmental Chemistry   | : | Prof OJ Okonkwo    |
| Mass Spectrometry (SAAMS) | : | Prof D Cromarty    |
| Industrial Chemistry      | : | Dr M Booth         |
| Inorganic Chemistry       | : | Prof TJ Egan       |
| Molecular Modelling       | : | Dr C van Sittert   |
| Organic Chemistry         | : | Prof I Green       |
| Physical Chemistry        | : |                    |
| Green Chemistry           | : | Dr R Klein         |
| ThermSA                   | : | Dr L van der Merwe |

## OFFICE BEARERS



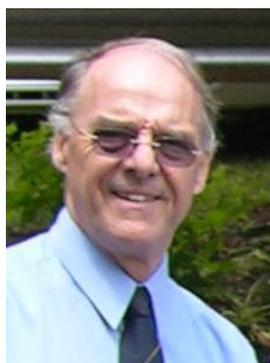
Prof B Martincigh – President



Prof V Nyamori – Vice-President



Prof S Lotz – Immediate  
Past- President



Dr M Booth - Co-opted Member



Prof N Coville – Co-opted Member



Dr P Mallon – Executive Secretary



Dr I Bratt – Executive Treasurer

## MEETINGS

Council meetings were held on:

4<sup>th</sup> August 2016 (AGM)

Executive Committee meetings were held on:

4<sup>th</sup> August 2016(AGM), 1<sup>st</sup> December 2016, 2<sup>nd</sup> March 2017, 25<sup>th</sup> May 2017 and

1<sup>st</sup> August 2017

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## PRESIDENT'S REPORT

My term of office has passed remarkably quickly but some notable achievements have been reached for which I would particularly like to thank all those members who gave of their time and effort and for which we can be duly proud.

Our recognition by the South African Qualifications Authority (SAQA) as a Professional Body has allowed us to register some 50 members as Professional Chemists. We are also able to provide members with evaluations for critical skills visa applications. Both of these have had very good responses from members. Shortly, we will have the necessary in place for the accumulation of CPD points that will enable renewal of the PrChemSA designation in five years' time. This would not have been possible without the hard work done by Dr Mike Booth and his team who screen all the applications, and Professor Ernst Breet who assesses the critical skills applications. We wish to thank all the members involved in this who voluntarily give of their time to provide this benefit to SACI members.

Our international links with the RSC, ACS and the European Federation for Medicinal Chemistry are still strong and beneficial for SACI and its members. The renewal of our MOU with the ACS will officially be signed in September 2017 at the 3<sup>rd</sup> Tanzania Chemical Society (TCS) Conference and the 6<sup>th</sup> Federation of African Societies of Chemistry (FASC) Congress to be held in Arusha, Tanzania. Our MOU with the RSC is also due for renewal and preliminary discussions indicate that the renewal will be signed at the 43<sup>rd</sup> National Convention of SACI to be held in Pretoria in December 2018. We are also in discussions for a possible MOU with the Royal Netherlands Chemical Society. SACI is still a member of FASC and the current president is one of our own, Professor Neil Coville. All these collaborations will hopefully enable our members to develop links, and enable professional development and collaborative associations with other chemists worldwide.

I was fortunate to be able to lead the South African delegation at the recent IUPAC General Assembly held at the WTC Events Centre, in São Paulo, Brazil from July 7 to 14, 2017. Together with me were Professor Marietjie Potgieter and Dr Sibulelo Vilakazi. We were therefore able to exercise our full vote on a number of matters such as the new Vice-President of IUPAC, Bureau members and the location of forthcoming IUPAC meetings. Of great importance to South Africa is that we won the bid to host the 26<sup>th</sup> IUPAC International Conference on Chemistry Education (ICCE2020) in Cape Town, in 2020. With the exception of Mauritius that hosted the conference in 2008, no other country from sub-Saharan Africa has hosted the conference to date. SACI will host the event and Professor Bette Davidowitz of UCT will be the Conference Chair. With the many challenges faced by education in this region, we look forward to hosting an event of this magnitude that will bring a wealth of benefits. Professor Marietjie Potgieter was elected as a Titular Member of the Standing Committee on Chemical Education and she has been assigned to the portfolio of "Special Projects". In addition, Professor Alan Hutton is due to become the next President of Division VIII: Chemical Nomenclature and Structure Representation Division. We congratulate them both for putting the face of South African Chemistry on the world map.

The scheduling of the SACI conference programme has been changed on a trial basis. This change was pre-empted by the increasing difficulty to raise sponsorship funds for conferences from the small pool of possible sponsors who repeatedly receive requests from conference organisers, and, also, attendance at conferences is difficult because of rising costs and lack of research funding. It was decided to hold the National Convention every three years and the Divisional Meetings in the between years. For our forthcoming Convention we are attempting to not only rely on the Section hosting it but also on all the Divisions for their input. The Section hosting the Convention will organise the event and venue, and raise sponsorship. The Divisions

will be invited to organise the speakers for their parts of the programme (i.e. plenary speaker, keynote speakers and oral and poster presentations). Once we have been through one cycle of conferences, Council will re-evaluate the Conference Programme. Preparations are well under way for our 43<sup>rd</sup> National Convention to be held in Pretoria in December 2018. The chair of the organising committee is Dr Richard Mampa from the University of Limpopo. We wish to thank him and his team for the good progress made so far.

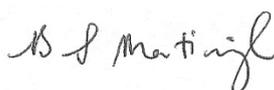
The new SACI Sections started last year are progressing well as is the student representation at all levels of SACI Management. The Institute is the only voice for chemists in our country. We therefore urge all members to support their Sections and the Divisions. We all need to work together for a strong and healthy future of our Institute.

The financial situation of SACI is sound although during the past year membership renewal has been sluggish and we have experienced only a moderate increase in membership. Also, the downturn in the economy has meant that our interest-bearing accounts have not performed as well as in the past. We urge all members to recruit at least one new member each and in that way sustain the well-being of the Institute. The EXEC have initiated steps to encourage more Patron and Company members and this has borne some fruit.

The South African Journal of Chemistry continues to flourish. The Editor-in-Chief Professor Gert Kruger has made many positive changes in the management of the manuscripts to ensure a quick turnaround time but as always we need to ensure a good standard of reviewing. In order to ensure continuity in the running of the journal Professor Luke Chimuka was appointed as a second Editor-in-Chief so that there can be rotation of the Chief Editor. The journal now forms part of the Scielo platform which will assist in gaining more international recognition. The editors have also evaluated a possible new platform for the journal. A decision will be made in the next few months regarding this option. I am very proud of the fact that SACI is one of only two societies who publish an ISI-rated chemistry journal on the African continent. Let's all support the journal by submitting at least one manuscript per year to the South African Journal of Chemistry.

In closing, I would like to thank the EXEC and all the members most sincerely for their continued support and advice to ensure the well-being and prosperity of the Institute. Without your dedication the sustainability of SACI would not be possible. We are also well aware that this work is voluntary and above your normal line of duty and that it takes you away from your other interests and obligations. I also wish to thank the SACI administrator, Laila Smith, for her exceptional ability in keeping the SACI Office running smoothly and efficiently. My term as President will shortly end but I am confident that the Institute is in good hands and will go from strength to strength!

Best wishes



**Bice Martincigh**  
**SACI President**

**AWARDS 2016**  
**2017 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 Prof Timothy J Egan  
University of Cape Town

## 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 2016, covering papers published in the period 2010 to 2015, was the most cited (without self-citation) SA authored paper in the field of Chemistry.

T. Bunhu, A. Kindness and B.S. Martincigh\*

*S. Afr. J. Chem.*, 2011, 64, 139-143

Determination of Titanium Dioxide in Commercial Sunscreens by Inductively Coupled Plasma-Optical Emission Spectrometry

## THE SACI POST-GRADUATE AWARDS

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 University or University of Technology. The number of medals awarded shall not exceed five per annum, and the awards are limited to one per institution.

Mr Mbongiseni William Dlamini  
Mr Ian Rogers  
Ms Kaalin Gopaul

University of the Witwatersrand  
University of Cape Town  
University of KwaZulu-Natal

## 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.

Prof Helen Drummond  
North-West University

## THE JAMES MOIR MEDALS

Medals shall be awarded to the best 2015 BSc Honours student in chemistry at each University, and the best BTech student in chemistry at each 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.

|                           |   |
|---------------------------|---|
| Delbert Botes             | University of Witwatersrand             |
| Zolani Myalo              | University of the Western Cape          |
| Bianca Steytler           | University of Pretoria                  |
| Kimberley Bianca Govender | University of KwaZulu-Natal             |
| Jeanette Leygonie         | University of the Free State            |
| Alexios Vicatos           | University of Cape Town                 |
| Jean Lombard              | University of Stellenbosch              |
| Lizette Swartzberg        | North-West University                   |
| Aidan Leigh Battison      | Nelson Mandela Metropolitan University  |
| Kudzanai Nyamayaro        | Cape Peninsula University of Technology |
| Munashe Chizema           | University of Johannesburg              |

## **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.

Professor Prof Zenixole R. Tshentu  
Nelson Mandela Metropolitan University

## **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.

No nomination

The number of paying SACI members has shown a slight increase from 730 in 2016 to 799 in April 2017. We are happy to report that the payment of membership fees during this period was better than in previous years and our drive to remind members to pay their fees seems to have had some success. The membership fees remain the lifeblood of the Institute and every effort needs to be made to encourage our members to pay their fees timeously as well as to encourage all chemists in South Africa to become members of the Institute. The table below shows that number of members in each of the regional sections for 2016 and 2017. The Western Cape, SACI North and South showed an increase in numbers while Kwazulu Natal and the Eastern Cape have seen a slight decrease in numbers. This variation is largely due to the variation in student members and we need to make every effort to ensure that student members (Honours and other Postgraduates) continue with their membership after graduation.

In addition to the paying members, the Institute had 251 non-paying members during the reporting period. There has also been a significant increase in members who are taking advantage of the registration as professional chemist (PrChemSA) from 12 last year to 41 members in April of 2017. It is expected that over the next few years more members will make use of this service as the advantages of the professional chemist designation become clear.

| <b>Sections</b> | <b>2016</b> | <b>2017</b> |
|-----------------|-------------|-------------|
| Western Cape    | <b>155</b>  | <b>169</b>  |
| Kwazulu Natal   | <b>150</b>  | <b>130</b>  |
| SACI North      | <b>195</b>  | <b>207</b>  |
| SACI Central    | <b>395</b>  | <b>437</b>  |
| Eastern Cape    | <b>61</b>   | <b>52</b>   |
| International   |             | <b>55</b>   |
| Members         | <b>11</b>   |             |

I am also delighted to say that we have 5 senior members of the Institute that qualify for Life Membership in 2017. These are member that have reached the age of 70 or older and have been members of the Institute for more than 35 years. I am sure you will agree that the designation as Life Members is suitable recognition of their contribution to our field over many years!

Dr PD Scott (Member since 1974, 43 years),  
Mr P Hassiotis (Member since 1977, 40 years),  
Prof PRL Loyson, (Member since 1982, 35 year),  
Prof T van Ree (Member since 1980, 37 years),  
Dr CJ Rademeyer (Member since 1980, 37 years)

Finally the Executive Committee would like to thank Laila for the management of the membership database and her tireless efforts in following up on unpaid membership fees due. Once again all SACI members are urged to encourage their colleagues and peers to join the Institute.

**Prof Peter Mallon**  
**Executive Secretary**

**PROGRAMME COMMITTEE**

In 2016, under the auspices of SACI, we held the 14th Frank Warren Conference, which took place in Grahamstown, from the 4<sup>th</sup> – 8<sup>th</sup> December. This was successfully hosted by Rhodes University, with Prof Rui Krause as the Chair of the Local Organising Committee.

The conference consisted of nine international speakers, from Germany, the UK, Argentina, Spain, Cameroon, and Brazil; nine keynote and plenary speakers from South Africa; about 40 oral presentations with 24 of them giving flash poster talks. This conference also provided an opportunity for a reunion for several keynote speakers who attended the 1995 Frank Warren Conference which was held at Aldam in the Free State. It was remarkable to see a good number of students having the opportunity to present their research. In general, the quality of the research and the variety of themes presented, during both the oral and the extensive poster sessions, was really a delight and insightful to the audience. At this event, Prof Charles De Koning delivered the Frank Warren Memorial Lecture. On the fourth day, the conference concluded with a pleasingly well-attended workshop entitled, “*Transforming Organic Chemistry Education at Universities*”. This workshop was well-received by both students and lecturers. Great ideas were generated and a recommendation to host a symposium in 2017 in order to unpack some of the proposals was supported.



Delegates at the 14th Frank Warren Conference.

The quadrennial Conference of the Chromatography and Mass Spectrometry Divisions of SACI was hosted at Riverside Sun, Vanderbijlpark, from the 11<sup>th</sup> - 14<sup>th</sup> September 2016. The conference was attended by about 120 delegates. The scientific programme consisted of 47 oral presentations and 28 poster presentations by various national and international experts. Plenary lectures were presented by Prof Daniel Armstrong (Robert Welch Foundation, Houston, Texas), Prof Shari Forbes (University of Technology, Sydney, Australia), Prof Patricia Smichowski (Atomic Energy Commissions, Argentina), Prof Ralph Zimmermann (University of Rostock, Germany) Dr Jack Cochran (Restek, USA), Prof Andre de Villiers (Stellenbosch University, SA), Dr Stoyan Stoychev (CSIR Biosciences, SA) and Dr Rina van der Westhuizen (SASOL, SA). First and second prizes were awarded for the best student oral and poster presentation winners. The exhibition area was fully utilized during breaks, where latest developments in analytical instrumentation and products were displayed and demonstrated by some of the leading manufacturers and distributors. The conference was followed by a short-course entitled, “*Practical Gas Chromatography – Tips and tricks and tools to improve laboratory efficiency*”

*and save money*” which was presented by Jack Cochran.

Other conferences which were not hosted by SACI, but which were chemistry related, were also held during the period under consideration. These included the Fluorine Conference, which took place in February 2016, Cape Town; and the 27<sup>th</sup> Catalysis Society of South Africa (CATSA) annual conference that was hosted by University of Johannesburg, at the Champagne Sports Resort (central Drakensberg), from 6 - 9<sup>th</sup> November 2016. Both the aforementioned conferences were very exciting and successful events.

All in all, we are grateful for all the support and sponsorship from institutions, government and private sectors. Indeed, 2016, was a very challenging year with the “#FeesMustFall”, a student-led protest movement, which yielded a very unfavourable atmosphere for organising and hosting these pleasant SACI activities. This especially impacted on academic institutions, who organise and host SACI conferences and affiliated events, Postgraduate Seminars and Honours Symposia. This was a nationwide spread of protests from the University of Witwatersrand, University of KwaZulu-Natal, University of Cape Town through to Rhodes University and other corners of the nation.

We are currently moving forward with the new proposed SACI National Conference Programme (<http://www.saci.co.za/pdf/programme.pdf>) which was supported by the SACI Executive and discussed at the 2016 Council meeting. This is a fairly spread programme which was deemed favourable, especially with the current times where it is becoming increasingly difficult to raise sponsorship/funds for conferences and this is more so due to only a small pool of possible sponsors, who repeatedly receive requests from conference organisers, and are available and willing. Also, with the previous *status quo*, it was challenging to register and attend as many Divisional and National conferences as one would wish. However, with the new structure we hope after every two years to bring and reunite all the SACI Divisions under one event, i.e. the National Convention of SACI. It noteworthy, that SACI conference attendance and SACI membership are the lifeblood of the Institute. Hence, I would wish to thank all of you for your participation and contribution to the well-being of SACI.

**Prof V Nyamori**  
**Vice President**

## Report SAJChem - 2017

Our Journal will be 100 years old next year! All paper are freely available online at <http://journals.co.za/content/journal/chem/browse?page=archive-issues>

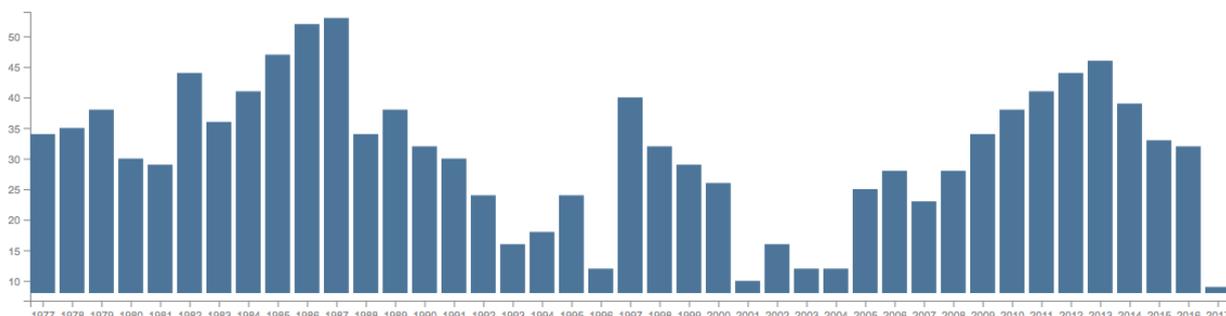
We are planning a special edition.

Details of the journal and the editors can be seen at <http://www.journals.co.za/sajchem/>. Stats about the Journal are presented below.

### 2017 Search results:

Total Publications

**1,264**



Sum of Times Cited per Year



*h*-index

**22**

Average citations per item

**3.98**

Sum of Times Cited

**5,029**

Without self citations

**4,551**

Citing articles

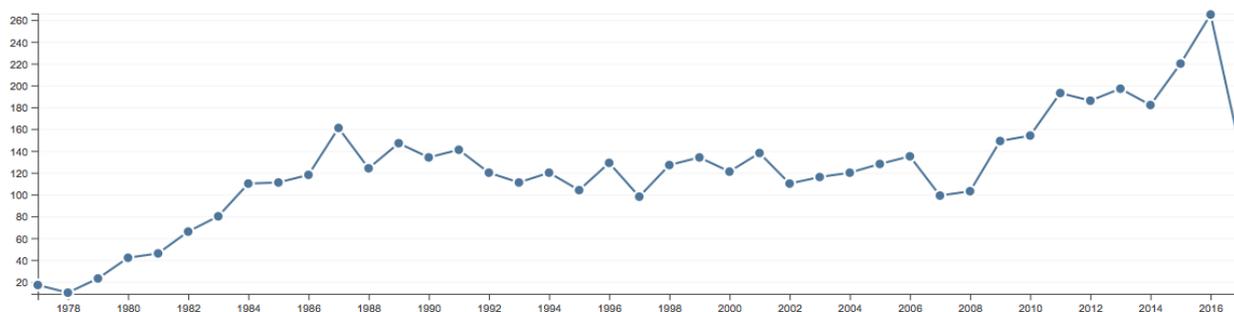
**4,311**

Without self citations

**3,989**

The number of papers per year (that are published by the journal) have steadily increasing since 2004 and peaked at 2013.

Sum of Times Cited per Year



The number of citations are also increasing since 2008. Credit should go to the Science editors:

**Organic Chemistry**

- Prof Willem van Otterlo
- Dr Leigh-Anne Fraser
- Dr Tricia Naicker

**Physical Chemistry**

- Professor Bice Martincigh
- Professor Jeanet Conradie

**Analytical Chemistry**

- Dr Patricia Forbes
- Dr Marc Humpries
- Prof Priscilla Baker
- Prof Hlanganani Tutu

**Inorganic Chemistry**

- Dr Daniela Bezuidenhout
- Dr Sam Mahomed

**Educational Chemistry**

- Professor Bette Davidowitz

**Computational Chemistry**

- Dr Gerhard Venter

**Materials Science and Nanotechnology**

- Prof Neerish Revaprasadu
- Prof Patrick Ndungu
- Dr Roy Forbes

**Assistant Editors**

- Dr Byron Peters
- Dr Sooraj Biajnath

**Editors-in-Chief**

- Gert Kruger
- Luke Chimuka

Since the beginning of the 2016 the journal have two Editors-in-Chief on a rotational basis: Profs Gert Kruger and Luke Chimuka. The idea is that each person will serve 2 years. Year one as “End process” editor and year 2 as “Screening” editor for all new submissions. Gert will step down towards the end of the year. Dr Tricia Naicker was the only existing editor to express willingness to take over from him.

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 5<sup>th</sup> place, followed by Germany, Nigeria and Australia. Nigeria was in the 8<sup>th</sup> place in 2014. At least 21 other African countries are publishing in the journal (was 14 in 2014 and 19 in 2015).

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

|   |   |  |
|---|---|--|
| <input type="checkbox"/> SOUTH AFRICA (471)   | <input type="checkbox"/> PAKISTAN (3)       | <input type="checkbox"/> SPAIN (1)       |
| <input type="checkbox"/> IRAN (70)            | <input type="checkbox"/> OMAN (3)           | <input type="checkbox"/> SLOVAKIA (1)    |
| <input type="checkbox"/> INDIA (55)           | <input type="checkbox"/> MALAYSIA (3)       | <input type="checkbox"/> SENEGAL (1)     |
| <input type="checkbox"/> PEOPLES R CHINA (47) | <input type="checkbox"/> ISRAEL (3)         | <input type="checkbox"/> RUSSIA (1)      |
| <input type="checkbox"/> USA (30)             | <input type="checkbox"/> CZECH REPUBLIC (3) | <input type="checkbox"/> REUNION (1)     |
| <input type="checkbox"/> GERMANY (20)         | <input type="checkbox"/> BRAZIL (3)         | <input type="checkbox"/> PORTUGAL (1)    |
| <input type="checkbox"/> NIGERIA (15)         | <input type="checkbox"/> ZAIRE (2)          | <input type="checkbox"/> NORWAY (1)      |
| <input type="checkbox"/> AUSTRALIA (14)       | <input type="checkbox"/> SWAZILAND (2)      | <input type="checkbox"/> NAMIBIA (1)     |
| <input type="checkbox"/> ENGLAND (13)         | <input type="checkbox"/> SERBIA (2)         | <input type="checkbox"/> MOROCCO (1)     |
| <input type="checkbox"/> TURKEY (12)          | <input type="checkbox"/> LESOTHO (2)        | <input type="checkbox"/> MEXICO (1)      |
| <input type="checkbox"/> BOTSWANA (12)        | <input type="checkbox"/> JORDAN (2)         | <input type="checkbox"/> MAURITIUS (1)   |
| <input type="checkbox"/> POLAND (8)           | <input type="checkbox"/> ETHIOPIA (2)       | <input type="checkbox"/> MAURITANIA (1)  |
| <input type="checkbox"/> KENYA (8)            | <input type="checkbox"/> CISKEI (2)         | <input type="checkbox"/> MACEDONIA (1)   |
| <input type="checkbox"/> EGYPT (7)            | <input type="checkbox"/> BELGIUM (2)        | <input type="checkbox"/> JAPAN (1)       |
| <input type="checkbox"/> FRANCE (6)           | <input type="checkbox"/> AUSTRIA (2)        | <input type="checkbox"/> HUNGARY (1)     |
| <input type="checkbox"/> ALGERIA (6)          | <input type="checkbox"/> WALES (1)          | <input type="checkbox"/> GUYANA (1)      |
| <input type="checkbox"/> ROMANIA (5)          | <input type="checkbox"/> UGANDA (1)         | <input type="checkbox"/> FINLAND (1)     |
| <input type="checkbox"/> SWEDEN (4)           | <input type="checkbox"/> TUNISIA (1)        | <input type="checkbox"/> CROATIA (1)     |
| <input type="checkbox"/> SOUTH KOREA (4)      | <input type="checkbox"/> TANZANIA (1)       | <input type="checkbox"/> COTE IVOIRE (1) |
| <input type="checkbox"/> SAUDI ARABIA (4)     | <input type="checkbox"/> TAIWAN (1)         | <input type="checkbox"/> CANADA (1)      |
| <input type="checkbox"/> ZIMBABWE (3)         | <input type="checkbox"/> SWITZERLAND (1)    | <input type="checkbox"/> CAMEROON (1)    |

in 2016, we have rejected a total of 91 papers, while 32 papers were published.  
 In 2015, we have rejected a total of 152 papers, while 34 papers were published.  
 In 2014, we have rejected a total of 207 papers, while 65 papers were published.  
 In 2013, we have rejected a total of 106 papers, while 78 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), 2015 was 34 paper (262 pages), 2016 was 32 papers (253 pages). The impact factor of the Journal is 0.65.

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

|   |      |      |      |          |              |
|---|------|------|------|----------|--------------|
|   | 2013 | 2014 | 2015 | 2016     |              |
| <b>Total submissions made</b>                         | 140  | 243  | 189  | 158      |              |
| Analytical  | 22   | 45   | 61   | 53       |              |
| CompChem  | 15   | 12   | 14   | 12       |              |
| Education   | 5    | 7    | 3    | 5        |              |
| Inorganic   | 25   | 26   | 20   | 17       |              |
| Nano  | 12   | 21   | 10   | 16       |              |
| Organic   | 34   | 103  | 53   | 37       |              |
| Physchem  | 27   | 28   | 29   | 18       |              |
| Fastest time for paper to be accepted/days            |      | 38   | 43   | 49       | Luke Chimuka |
| Average time for paper to be accepted/days            |      | 147  | 100  | 163      |              |
| Nr of submissions rejected within 2 weeks             |      | 69   | 100  | 29       |              |
| Average days for rest of paper to be rejected/days    |      | 114  | 61   | 74       |              |
| <b>Number of papers published</b>                     | 46   | 39   | 34   | 32       |              |
| <b>Papers published per editor (in specific year)</b> | 2014 | 2015 | 2016 | Declined |              |
| Baker   | -    | 1    | 6    | 2        |              |
| Bezuidenhout  | -    | 4    | 2    | 1        |              |
| Davidowitz  | -    | 1    | 1    | 3        |              |
| Conradie  | 4    | 3    | 2    | 1        |              |
| Frazer  | 1    | 1    | 2    | 0        |              |
| Forbes - Patricia                                     | 3    | 2    | 6    | 4        |              |
| Forbes - Roy  | -    | 1    | 1    | 0        |              |
| Humphries   | -    | -    | 4    | 3        |              |
| Martincigh  | 5    | 0    | 1    | 3        |              |
| Mohamed   | -    | -    | 0    | 0        |              |

The average days for acceptance and rejection came down varies from year to year. That is in my view the most important point that needs improvement, provided we can keep up the quality of the journal.

All new papers will link the ORCID of the authors to their SAJChem papers.

We were looking into awarding referees for their work *via* ORCIDs, but that will require an annual subscription of about R16k. We are now looking at Publons (<https://publons.com/benefits/publishers>) that seems to offer a similar service. Not sure of the costs yet.

We have looked a free Journal Management system (through Open Access Journals), which seems very good. However, it can currently not handle rewarding referees. We have a quote for R2000 to introduce this by our existing Journal Management service provider.

#### **Finances of the Journal:**

We have a little income from subscriptions (about R5000 per year). This will stop as we are now open access.

Annual costs are about R14000 to Sabinet for hosting the journal and about R46000 for creating proofs (for 32 papers in 2016).

We also pay R1050 per month (R12600 per annum) for hosting and maintenance of the Management system website.

Total costs per year is about R73000.

We can reduce the cost by starting to charge a publication fee (say R2000 per paper). We can also reduce the further by moving the Management system to a free open access system hosted by UKZN. This system can at the moment not award referees for their review tasks.

We are waiting with a final decision to see if this can be done by the current system.

Prof Gert Kruger  
**Chairperson SAJC**

### **SACI NEWSLETTER**

The newsletter went out 11 times in 2016/2017 (11 months; no newsletter in Late Dec/early Jan). In general sufficient news was generated to ensure publications. I thank all the contributors who made this possible. Also Laila who takes the information I give her and puts it into a more readable format.

To make the newsletter shorter a new system was introduced where only subject headings were listed. By clicking on headings the full particle was displayed. The newsletters were also loaded on the SACI website.

A survey will be needed to establish (a) the usefulness of the newsletters and (b) the use of the new newsletter format.

The newsletters were produced as a means to allow members to see that SACI was involved in many activities within the local, national and international scene. Also to be used to advertise conferences, workshops, personal information (e.g. obituaries) and job opportunities. It might be that the time has come to expand the scope of the newsletter e.g. to include more chemistry articles/comments?

**Prof N Coville**  
**Publicity**

### **IUPAC**

The South African IUPAC committee is a member of ICSU South Africa and for the past year, the President of the South African IUPAC committee, Professor James Darkwa, and the President of SACI, Professor Bice Martincigh, have represented these bodies at the ICSU Consultative Forum meetings called by the NRF.

The 49<sup>th</sup> IUPAC General Assembly, together with the 46<sup>th</sup> World Chemistry Congress (IUPAC-2017) and the 40<sup>th</sup> Annual Meeting of the Brazilian Chemical Society, were held at the WTC Events Centre, in São Paulo, Brazil from July 7 to 14, 2017. This was also the occasion of the 40<sup>th</sup> anniversary of the Brazilian Chemical Society (Sociedade Brasileira de Química, SBQ). This is the first time the IUPAC GA and Congress were held in South America.

South Africa was fortunate to be able to send a full delegation (three people) to attend the Council Meeting. These were Professors Bice Martincigh and Marietjie Potgieter, and Dr Sibulelo Vilakazi. We were therefore able to exercise our full vote on a number of matters such as the new Vice-President of IUPAC, Bureau members and the location of forthcoming IUPAC meetings.



The SA delegation at the Council Meeting (from L to R): Sibulelo Vilakazi, Bice Martincigh and Marietjie Potgieter.

Of great importance to South Africa is that we won the bid to host the 26<sup>th</sup> IUPAC International Conference on Chemistry Education (ICCE2020) in Cape Town, in 2020. With the exception of Mauritius that hosted the conference in 2008, no other country from sub-Saharan Africa has hosted the conference to date. SACI will host the event and Professor Bette Davidowitz of UCT will be the Conference Chair. With the many challenges faced by education in this region, we look forward to hosting an event of this magnitude that will bring a wealth of benefits.

Professor Marietjie Potgieter was elected as a Titular Member of the Standing Committee on Chemical Education and she has been assigned to the portfolio of “Special Projects”. In addition, Professor Alan Hutton is due to become the next President of Division VIII: Chemical Nomenclature and Structure Representation Division. We congratulate them both for putting the face of South African Chemistry on the world map.

The newly elected Vice President of IUPAC is Professor Christopher Brett, who is well known in South Africa and was also a plenary speaker at the 42<sup>nd</sup> National Convention of SACI held in Durban in December 2015. He is a professor of chemistry in the Faculty of Sciences and Technology at the University of Coimbra, Portugal, where he has been since 1981, lecturing mainly electrochemistry, physical chemistry, materials chemistry and analytical chemistry. He has been an elected member of the IUPAC Bureau since 2012 and is an elected member of the Executive Committee 2016-17. He is currently chair of the Evaluation Committee and is a member of the Membership Relations Committee, National Subscriptions Task Force and the Centenary Planning Steering Group. He is also a Titular Member of the new Interdivisional Committee on Green Chemistry for Sustainable Development which is being constituted.

The Bureau members that were elected were: Prof. Russell J. Boyd (Canada), Prof. Mary Garson (Australia), Dr. Javier García-Martínez (Spain), Prof. Chris Ober (USA) and Prof. Ken Sakai (Japan).

The forthcoming IUPAC meetings will be held in Paris (2019), Montréal (2021) and The Hague (2023). In 2019 IUPAC will celebrate its centenary and we have all been asked to hold events to celebrate the anniversary. In addition, IUPAC together with other Unions, has applied to UNESCO that 2019 be designated as the International Year of the Periodic Table of Chemical Elements (IYPT), to celebrate the 150<sup>th</sup> anniversary of the great discovery of Dmitry Mendeleev. South Africa has supported this motivation.

In 2016 members of ICSU, the International Council for Science, of which IUPAC is a member, voted in favour of a “merger in principle” between ICSU and ISSC, the International Social Science Council. Such a merger would create a combined new Council that would merge the two bodies, hopefully to the benefit of its members and of the world at large. The merger-in-principle vote was not to approve the merger, but instead to entrust ICSU and ISSC to form two task groups, a Transition Task Force and a Strategy Working Group, to formulate proposals for

the framework and strategic plan, respectively, for the proposed new Council. At the coming ICSU General Assembly in October 2017 in Taiwan, ICSU members will be asked to vote on whether to authorize the two organizations to merge. IUPAC's response requested more information to explain how the combined Council would be more effective than the two separate organizations in bringing the natural sciences and social sciences together for mutual benefit and in enabling a stronger, more effective global voice in guiding public policy. IUPAC leadership has not yet decided whether to vote in favour of or against the merger and is awaiting further information as mentioned above.

On a lighter note, the SACI ties and scarves were very much enjoyed and seen in full force at the Council Meeting as can be seen below.



The Executive Director of IUPAC, Dr Lynn Soby.



Prof. Jan Reedijk (Netherlands), President of Division II: Inorganic Chemistry Division

**Prof J Darkwa  
Chairperson IUPAC**



The principal task of SACNASP according to the Natural Scientific Professions Act, 2003 (No 27 of 2003), is the professional registration of Natural Scientists in different Fields of Practice (FOP). The Registration Committee (RC) executes its function through a number of Professional Advisory Committees (PAC's) evaluating the qualifications and vocational experience of applicants from different disciplines. These disciplines are represented by Voluntary Associations (VA's) providing input about requirements for their particular fields.

• **Registration Statistics**

SACNASP has crossed the 11 000 registered scientists mark. Only 6% (704 of 11 459) are Chemical scientists, of whom 393 are registered as Professional, 172 as Certificated and 139 as Candidate scientists. In an effort to improve the turnaround time for finalizing registrations, SACNASP is currently upgrading its system to facilitate automatic emails, reminders and updates to pending applicants and their referees.

• **Voluntary Associations**

There are currently 42 Voluntary Associations, such as SACI, aligned with SACNASP and representing 24 Fields of Practice. SACNASP will in future publish a short article on each of the VA's in alphabetical order in coming issues of the SACNASP Newsletter.

- **New Field of Practice**

Atmospheric Science has been approved by the Minister of Science and Technology. SACNASP is in the process of establishing a new PAC and specific requirements in cooperation with the National Association for Clean Air. This will bring the number of SACNASP Fields of Practice to 24.

- **Digital Certificates**

All registered scientists now receive their registration certificates in digital format. This keeps certificates safe, and can be accessed from all media.

- **Continuing Professional Development (CPD)**

CPD is an internationally recognized tool by virtue of which professionals maintain and enhance their knowledge and skills. It is vital if a professional needs to remain effective and compliant to regulatory requirements set out in the Natural Scientific Professions Act. CPD commenced on 1 April 2017. Over a period of 5 years, registered scientists must gain 25 CPD points in order to renew registration, which means 5 points per year. These points can be accumulated from 3 categories, viz. Developmental Activities, such as attending/presenting conferences (1 credit/10h), Work-Based Activities (1 credit/400h going to work, 1 credit/50h mentoring), and Individual Activities, like referee reports, belonging to a VA, participation in science committees (1 credit/30h). The registered scientist portal on the SACNASP website allows registered scientists to log and track their CPD points.

- **Career Expos**

SACNASP presented career expos all over the country, giving presentations on career paths within science. It was one of the exhibitors at the Science Forum 2016 hosted by the Minister of Science and Technology to promote science and professionalism, and handed out career leaflets and lanyards to learners (grades 10-12) of a Stellenbosch High School who attended an ARMSCOR event on 28 March 2017. SACNASP exhibited at the Rand Easter Show 14-23 April 2017 at NASREC, and participated in the “Science is Fun” initiative which showcased science for adults and children. On 1 May 2017, SACNASP in partnership with The Hip Hope Foundation and the South African Literacy Foundation, created, as part of an outreach initiative, an education centre at a Children Home in an East Rand township.

**Prof. ELJ Breet Pr.Sci. Nat.**  
**Chairperson of PAC for Chemistry**

## **CO-ORDINATION COMMITTEES AND DIVISION REPORTS**

### **EASTERN CAPE**

No Report

### **SACI CENTRAL**

**Reporting Period: 1<sup>st</sup> July 2016 – 31<sup>st</sup> July 2017**

#### **1. The SACI Central Section Committee**

The committee of SACI Central Section remained as elected in October 2015 and have been actively involved in meetings and events organized by the Central Section.

|                         |                              |
|-------------------------|------------------------------|
| Sabelo Mhlanga (UNISA): | <i>Chairperson</i>           |
| Caren Billing (WITS):   | <i>Vice-Chairperson</i>      |
| Alfred Muller (UJ):     | <i>Out-going Chairperson</i> |

|                              |                  |
|------------------------------|------------------|
| Edward Nxumalo (UNISA):      | <i>Secretary</i> |
| Andreas Lemmerer (WITS):     | <i>Treasurer</i> |
| Juanita Van Wyk (WITS):      | <i>Member</i>    |
| Sibusiso Mnguni (Randwater): | <i>Member</i>    |
| Tlou Chokwe (Randwater):     | <i>Member</i>    |

## 2. Meetings

An annual general meeting was scheduled to take place on the 6<sup>th</sup> October 2016 at the Wits University but this was cancelled due to “fees must fall” protests that took place all over the country. The Committee met twice during the reporting period.

**Meeting held on 17<sup>th</sup> February 2017 at 2.00 pm:** This was the first meeting of the year 2017 held at Wits University. Only one apology was noted. The purpose of the meeting was to plan for the year and decide on suitable dates to issue the SACI Chemical Education Medal (May 2017) and the decide on the host for the 2017 YCS (University of Johannesburg – October/November 2017).

**Meeting held on 22<sup>nd</sup> June 2017 at 2.00 pm:** The 2<sup>nd</sup> meeting was held Gate House Building, Wits University. Only one apology was noted. The purpose of the meeting was mainly to discuss finances of the section and how to raise these. It was agreed that the section would work with the organizers of the 2017 YCS to raise some funds for both the YCS and the Central Section.

## 3. Activities

### 3.1 Events organized by the SACI Central Section

| <b>Date</b>   | <b>Event and Host</b>   | <b>Feedback/Progress</b>  |
|---|---|---|
| 1 December 2016<br>(Initially planned for 21 October but postponed due to FMF protests) | SACI Young Chemists’ Symposium, University of the Witwatersrand | <p>The School of Chemistry, University of the Witwatersrand, hosted the 2016 YCS. It was well attended with over 100 participants (students and staff) from the Gauteng and Northwest regions. This was the first symposium whereby the Gauteng Section was split and held two separate events. The North Section had its own YCS.</p> <ul style="list-style-type: none"> <li>• Chair of organizing committee (Dr Caren Billing – Wits University)</li> <li>• Presentations: <i>6 doctoral</i> and <i>6 masters</i>. Best presentations were sponsored by the RSC.</li> <li>• Participating institutions: University of the Witwatersrand, University of South Africa, University of Johannesburg, Northwest University, Vaal University of Technology, and NIMSA.</li> <li>• Sponsors: Sigma Aldrich, Perkin Elmer, Labex, Wits, RSC, SACI.</li> </ul> |

|             |  |  |
|-------------|--|--|
|             |  | <ul style="list-style-type: none"> <li>• The symposium ended with a bang ! where the Wits Chemistry Society showcased a number of fun-filled chemistry experiments. This was followed by awards of best presentations that were handed over by Prof Ian Bratt.</li> <li>• Other awards made on this day were the James Moir medals, which would have been awarded at the annual AGM in 2016.</li> </ul>  |
| 11 May 2017 | SACI Chemical Education Award, University of the Witwatersrand | <p>The South African Chemical Institute (SACI) Central section presented the 2016 SACI Chemical Education Medal Award to Professor Helen Drummond at an event on the 11th May 2017. The event took place at the School of Chemistry, University of the Witwatersrand and was attended by approximately 35 people from various institutions including Wits University, the University of South Africa, University of Johannesburg, North West University and some friends and family members of Helen. The event was chaired by Andreas Lemmerer and the award was handed over by Sabelo Mhlanga (Chair of the SACI Central Section) who congratulated Helen and emphasized the importance of the award.</p> <p>Helen's talk, titled "Competence in Chemistry: Component Steps to Skills and Strategies" was amazing and pleasant to listen to. Her ability to teach Chemistry was clearly demonstrated from the way she delivered her presentation, which attracted the attention of the audience throughout the talk. The questions and discussion that ensued after the talk showed was interesting and it showed how important and informative the talk was to both staff and students that attended the event. The importance of teaching skills at undergraduate chemistry students and the strategies to achieve this was a clear message from Helen.</p> <p>The talk was followed by food and refreshments that took place in the School of Chemistry Foyer. Below is an abstract of the talk.</p> <p>This paper hypothesises that all skills are teachable. Skills (e.g. representation of knowledge, mathematical skills, visualization skills) can be broken down into their component steps, and strategies (e.g. problem solving) into their component skills, each of which can be taught. Each step must be thoroughly understood; otherwise the overall skill or strategy will not be mastered. Several studies have been undertaken by the author to test and improve students' ability in these skills and strategies, and the results of these</p> |

|                |   |   |
|----------------|---|---|
|                |   | studies will be discussed. The use of strategies which are likely to lead to a correct answer will improve students' confidence, their competence and their success rate. The performance of students has been shown to improve when they receive guidance in the use of skills and strategies, and this should translate to higher grades in Chemistry.  |
| 28 July 2016   | Speak to a scientist, Sci-bono discovery centre | A public lecture titled "Renewable energy: devices and the materials that make them work" was delivered by Prof. Dave G. Billing, a Research Professor: Materials Energy Research Group (MERG), School of Chemistry, University of the Witwatersrand. The lecture was well attended by members of the public including high school and University students. The event was chaired by Prof Andreas Lemmerer. |
| 28 August 2016 | SACI/RSC Annual Lunch                           | The sixth joint SACI/RSC Annual function for members (and partners/spouses) of the SACI Central, SACI North and RSC SA North Sections took place at the Wanderers Club. The event included a presentation of SACI Fellow certificates to the 2016 recipients. The cost was R50.00 per member/guest.   |

### 3.2 Upcoming events in 2017

- **SACI Young Chemists' Symposium**, University of Johannesburg, Auckland Park Campus: The Department of Chemistry, University of Johannesburg, will host the 2017 SACI YCS of the Central Section. The proposed date is 20<sup>th</sup> October 2017. Dr Edwin Muntlane will chair the organizing committee. Preparations are underway.
- **Annual General Meeting of the SACI Central Section**: The proposed date for the AGM is 5<sup>th</sup> October 2017. A new committee will be elected at this meeting.

**Dr S Mhlanga**  
**Chairperson SACI Central**

### SACI NORTH

#### **Committee**

The SACI North section committee is constituted of institutions and organisations in the geographical area North of Gauteng i.e. Tshwane, Limpopo and including Mpumalanga. Daniela Bezeidenhout (Wits University) and Andrew Pienaar (NECSA) have relocated to areas outside of the geographical area North of Gauteng and have since been replaced. The current committee members and their portfolios are: Richard M Mampa (Chairperson; University of Limpopo), Simon Mnyakeni Moleele (Vice-chair; University of Venda), Darren Riley (Student matters; University of Pretoria), Molahlehi M Sonopo (Scientific Programme and Events; NECSA), Freddy M Muganza (Membership; Sefako Makgatho Health Sciences University), Mmalewane Modibedi (Treasurer; CSIR), Comfort M Nkambule (Secretary; Tshwane University of Technology) and Simon Lotz (University of Pretoria, Executive Committee member). The

University of Mpumalanga does not have a functioning Chemistry Department at the moment.

### Logo for the SACI North Section

The SACI North has adopted a new logo to represent the section (Figure 1). The logo is derived from the historical and natural elements that are peculiar to the geographical region.

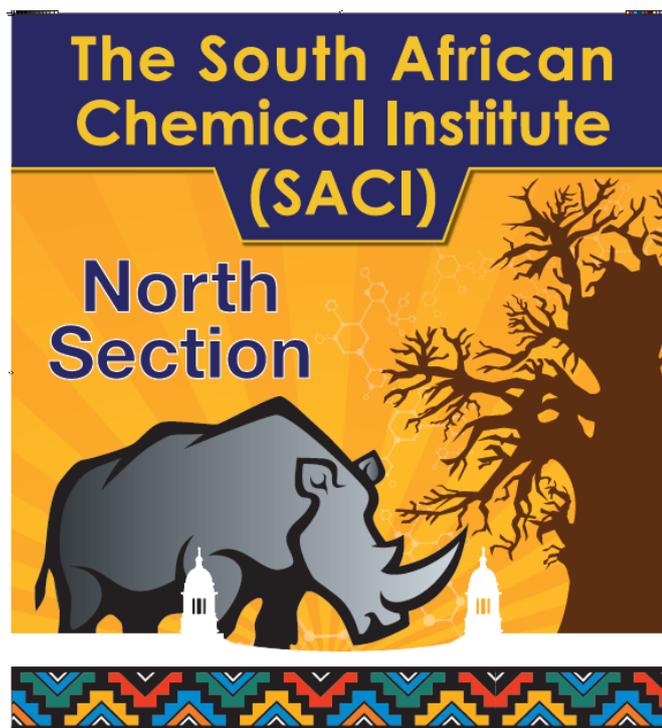


Figure 1. SACI North Section logo

The logo depicts beginning new the morning sun rays over the natural beauty of the low-veld expressed in the Baobab tree. The Section covers the area known for the big five here represented by metaphorical golden rhino which also encompasses the ancient history of the region for its technological advancement. The region include the Capital City of the country, Pretoria as the administration center. The Ndebele graphics is known globally for its beauty and authenticity, thus celebrating the diversity of cultures within the region. The major purpose of this society is about the Chemistry and therefore molecular structures shown in the background seek to remind everyone about chemistry as the Central Science.

### Events

The inaugural SACI North Young Chemist Symposium was hosted by the Chemistry Department, University of Limpopo, Turfloop Campus on 23 November 2016 organized by Dr Richard M Mampa. The program of the symposium included a total of twelve (12) oral presentations i.e. MSc (7) and PhD (5) students, and 32 poster presentations by Honours students. The plenary speaker for the event was Prof MJ Mphahele who also served as a judge delivered an inspirational talk. Prof Mphahele's inspirational talk was biographical (journey through life career in chemistry) in a sense, but emphasizing on the benefits of hard work. The events was well supported with sponsorships from University of Limpopo through the office of the Executive Dean of Science and Agriculture (R22 000.00 towards for catering), RSC (R12 000.00 towards prizes), Lehlabile Scientific (R2 000.00 towards name badges), NRF-KIC towards covering plenary speaker expenses, Metrohm and Biologic (R5 000.00 each) and Sasol Inzalo Foundation (R20 000.00). Approximately 150 participants graced the occasion. The following prizes were awarded:

### PhD Oral Presentations

|                               |                       |
|-------------------------------|-----------------------|
| 1 <sup>st</sup> prize (R2500) | Mr. B. Seteni (CSIR)  |
| 2 <sup>nd</sup> prize (R1500) | Ms M.V. Maphoru (TUT) |
| 3 <sup>rd</sup> prize (R500)  | Mr R. Mhlaba (UL)     |

### MSc Oral Presentations

|                               |                       |
|-------------------------------|-----------------------|
| 1 <sup>st</sup> prize (R2500) | Ms M. Rapudi (Univen) |
| 2 <sup>nd</sup> prize (R1500) | Ms C. Gray (UP)       |
| 3 <sup>rd</sup> prize (R500)  | Mr T. Thukwane (TUT)  |

### Honours Poster Presentations

|                               |                              |
|-------------------------------|------------------------------|
| 1 <sup>st</sup> prize (R1500) | Mr. K.B. Dilebo (UL)         |
| 2 <sup>nd</sup> prize (R1000) | Ms. L.K. Ramukhithi (Univen) |
| 3 <sup>rd</sup> prize (R500)  | Ms G. Mashao (UL)            |



Figure 2. Prize winners at the inaugural SACI North Section YCS meeting at UL.

The 2017 SACI North Section YCS meeting is being organised for the 3<sup>rd</sup> of October 2017 at Tshwane University of Technology organized by Prof CM Nkambule. The awards category and participation is expected to be similar to 2016. Preparation in this respect is satisfactory as abstracts for the event are being assessed. Royal Society Chemistry (RSC) represented by Dr Ian Bratt has already pledged a sum of R15 000 towards prizes.

### ***SACI 2018 National Convention***

The SACI North section committee has been tasked with organization of the 43<sup>rd</sup> 2018 SACI

National Convention. The core structure of the Organising Committee will be as follows:

- Chair; LOC and SACI North Section, Richard Mampa
- Vice Chair; LOC and Vice SACI North Section Simon Moleele
- Marketing and Publications Comfort Nkambule
- Treasurer - Sponsorships Mmalewane Modibedi
- Scientific Program Richard Mampa
- Conference website (registrations & admin) Laila Smith
  
- Advisor Neil Coville
- Social Functions
- Accommodation
- Logistics

Scientific Committee will be appointed by the SACI divisions and will include SACI North Section Committee members. The divisions will be responsible for identifying and hosting of plenary speakers as per SACI national resolution. The selected SACI divisions will have representation in the scientific committee for equitable allocation of presentation sessions in the convention.

Several achievement have been attained with respect to: (i) venue, which is CSIR-ICC in Pretoria from 02 – 07 December 2018 (ii) invitation letters to all the SACI divisions, international bodies such as ACS, RSC, IUPAC and FASC have been sent. Letters to potential sponsors have been sent and approximately R60 000.00 to date have been secured. The website for the SACI 2018 National Convention is expected to go live by the end of August 2017.

### ***Budget***

The financial statement as at the time of submitting this report was R42 000 for the section with 243 members

**Dr R Mampa**  
**Chairperson SACI North**

## KWAZULU-NATAL

### **Honours/BTech Symposium**

The KZN Section organises an annual Honours/BTech Symposium held at DUT. Unfortunately in 2016 it had to be cancelled due to student protests at the time.

A symposium is scheduled for October 2017.

### **RSC and SACI KZN Region Lunch and Awards Ceremony**

On Friday, 2 December 2016 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 the 2016 James Moir Medal was awarded to Miss Kimberleigh Govender of UKZN for achieving over 75% in her B.Sc. (Hons) degree. Miss Kaalin Gopaul was awarded the SACI Postgraduate Award (formerly the Sasol Postgraduate Medal) for 2016 for her innovation, independence, and enterprise during her postgraduate studies. The function also awarded Professor Bice Martincigh with the Merck Award as the senior author of a paper published in the South African Journal of Chemistry, adjudged to have made the most significant contribution (most citations) to a specific field of chemistry. Approximately 41 members of both SACI and the RSC attended the event and had a very enjoyable time together.



Left: The 2016 James Moir Medal was awarded to Miss Kimberleigh Govender. Middle: The 2016 Merck Award was received by Professor Bice Martincigh, and Right: Miss Kaalin Gopaul was awarded the SACI Postgraduate Award for 2016. The awards were handed over by Prof. Werner van Zyl, KZN Section Chair.

### **End-of-year Magic Show**

The annual Magic Show had to be cancelled for 2016 due to student protests at the time. A show is scheduled to go ahead again in 2017.

### **Conferences and conventions**

KZN hosted no major conferences or conventions during 2016 that involved SACI.

**Prof W van Zyl**  
**Chairperson KZN Section**

## WESTERN CAPE

### SACI Young Chemists' Symposium – Western Cape Section

(Report adapted from that provided by Ms Kerry-Anne White (AlchemUS, SU))

This year the annual SACI Young Chemists' Symposium was hosted by Stellenbosch University. The day was started off with an opening talk by Prof. Eugene Cloete, who inspiring the audience to always ask why and to think provocatively (in science). This was followed by an eye-opening guest lecture by Prof. Len Barbour about impact factors and got the assembled young scientists rethinking the whole system. The day's events continued with the oral presenters presenting their research with plenty of questions and discussions from the audience. Delicious lunch platters were provided by the Neelsie's Nçakos and the oral presentations were finished off after lunch. The afternoon poster session showcased varied research topics and led us into afternoon tea where ideas were discussed and contacts made. All the presentations and posters were on a very high standard, and our judges (Wesley Feldmann, John Woodland, Helen Pfukwa and Jacquin October) had a tough time choosing the winning presentations! These were as follows: Oral presentations: First prize - Godwin Dziwornu (UCT), Second prize - Isabella Claassens (SU), Third prize - Savannah Zacharias (UCT); Poster presentations: First prize - Nicola Dare (UCT), Second prize - Giselle Vicatos (UCT), Third prize - Terence Noonan (UCT). The first and second prizes consisted of interesting popular science books: *Bad Science* by Ben Goldacre, *A Short History of Nearly Everything* by Bill Bryson and lastly *The Science Magpie* by Simon Flynn.



Attendees at SACI Young Chemists' Symposium – Western Cape Section

### **AGM and year-end SACI-RSC function:**

The 2016 year-end SACI-RSC dinner was held on the 29 November 2016 at the Neethlingshof Wine Estate in Stellenbosch and incorporated the 74th SACI AGM (Western Cape division) at the start of proceedings (the August AGM having to be postponed). There were 18 SACI members in attendance at the AGM (with apologies from several others) and this swelled to over 60 guests for the dinner part of the proceedings. The AGM meeting started at 18h30 and concluded at 19h00.

The chairperson, Willem van Otterlo, covered the agenda which included a brief chairperson's report and a summary of decisions affecting WC SACI members taken at the National AGM, while a financial report was tabled by the treasurer, Dr Margaret Blackie. An important decision which was tabled and supported by the members was that Western Cape investment account (the "Frank Warren" account) would be closed and that these reserves would be transferred to the main SACI bank account for oversight and auditing purposes. In terms of committee members, the AGM participants agreed to maintain the Western Cape committee as is at present, namely: Willem van Otterlo as chair, Robbie Luckay as secretary and Margaret Blackie as treasurer. Other members who were retained on the committee are: Gareth Arnott, Nikoletta Bathori, Peter Mallon, Ivan Green, Delia Haynes, and a number of student representatives from the Western Cape universities.

The actual year end dinner was then started at 19h00 and the proceedings will be described from a student's view point below (that of PhD student, Mr Anton Hamman).

Now let's face it, this year was a stressful year for all of us regarding the unrest on the various university campuses. Nonetheless, we managed to complete the academic year a little battle weary but still standing. The annual dinner hosted by SACI in collaboration with the RSC, offered a great chance for the Western Cape chemists to engage and socialize in a relaxed atmosphere. This was held on 29 November 2016 at the Neethlingshof Wine Estate in Stellenbosch and incorporated a short SACI AGM at the start of proceedings.

The Neethlingshof Wine Estate is a beautiful venue with a picturesque stone pine avenue and pristine Cape Dutch buildings. Along with the stunning landscape, this estate brings a sense of harmony and peace to the visitor. Before the start of the event we relaxed outside with a glass or two of Sauvignon Blanc. The meal began with a mushroom soup appetizer. And then we had two options for the main course – bobotie or a chicken dish. We were happy that both dishes satisfied our hunger and met expectations in terms of food quality. The night was rounded off with a delicious chilled crème brulee. During the event we were also treated to a superb selection of wine and the best one in my opinion was the Shiraz.

The keynote speaker of the evening, was Prof. Luigi Nassimbeni of UCT, who delivered an interesting account on his life journey. He spoke about his life, studies and how he met his wife. He gave a well-rounded and entertaining talk – even for the companions of chemists at the event. The evening also allowed for the awards of prizes in chemistry to students and researchers who have achieved either great academic success or made significant contributions to their particular field of chemistry.

Present at the event were a host of SACI prize-winners, as well as those receiving the special SACI Fellow award. These were: SACI 2016 Gold Medal Winner, Prof. Tim Egan (University of Cape Town), SACI Post-graduate medal awardee, Dr Ian Rogers (University of Cape Town), SACI Life time membership awardee, Prof. Ivan Green (University of Western Cape/Stellenbosch University, in absentia), James Moir Medalists: Ms J Lombard (Stellenbosch University), Mr Z Myalo (University of the Western Cape), Mr K Nyamayaro (Cape Peninsula

University of Technology), Mr A Vicatos (University of Cape Town), SACI Fellows: Prof. Mike Davies-Coleman (University of the Western Cape) Prof. Luigi Nassimbeni (University of Cape Town/Cape Peninsula University of Technology) and Prof. Helgard Raubenheimer (Stellenbosch University). Congratulations to all of them!

All in all, we had much fun and a memorable night. I'm sure all SACI members, students, academics and partners will concur that Dr. Blackie did an incredible job in organizing this great RSC-SACI Western Cape event.



**Photo of prizewinners:** Front row (L to R): Mr A Vicatos, Mr K Nyamayaro, Mr Z Myalo, Ms J Lombard, Prof. T Egan, Prof. L Nassimbeni, Dr I Rogers; Back row (L to R): Prof. M Davies-Coleman, Prof. W van Otterlo (chairperson SACI), Prof. A Hutton (Past chairperson RSC), Prof. H Raubenheimer.

**Visit by some Stellenbosch SACI student members to the RSC-AGM – 13 June 2017**  
(By Ms Megan Mathews - AlchemUS Student Society, Stellenbosch University)

The Annual General Meeting of the Royal Society of Chemistry took place on the 13th of June 2017. The highlight of the evening was undoubtedly the lecture presented by forensic scientist Dr David Klatzow entitled Defence Against the Dark Arts. Many of us currently in the field of chemistry were once enticed by the series Crime Scene Investigation (CSI) and the satisfaction of solving an entire murder mystery in the span of an hour, which attracted me and a few other post-graduates from Stellenbosch University to this lecture. After revealing an interesting personal history Dr Klatzow proceeded to reveal his role in a series of “Deon Meyer–esque” forensic mysteries; from the alleged terrorist plot leading to the murder of the Gugulethu seven to the absolution of actuary Fred van der Vyver in the murder trial of Inge Lotz. While most of us find ourselves in fields far from that of forensic science, Dr Klatzow’s lecture also had some subtle wisdom about how we should approach our own research. To critically analyse the conclusions of the research irrespective of the name of the researcher or the journal in which the research was published, to never disregard the value of empirical evidence and, above all, to avoid cognitive bias were the take home messages reminding us of the basics of the scientific method which we are prone to forget in the complexity of modern research. This talk was definitely an unforgettable experience. Thank you to SACI Western Cape (who sponsored the student transport) for the opportunity to meet and learn from this famous scientist.

**Prof W van Otterlo**  
**Chairperson of SACI Western Cape**

## **ANALYTICAL CHEMISTRY**

The Analytical Chemistry and Chromatography Division of SACI cohosted a visit to UNISA new laboratories in the Chemistry Department and Nano water sustainability research unit (NanoWS) on March 2<sup>nd</sup>, 2017. More than 75 guests RSVP and about 20 M & D students from the Science Campus walked in. A brief introduction on the history of the new laboratories and the research carried out in the department of chemistry and the NanoWS research Unit, was given prior to the visit.

The laboratories visited included, chromatography, Atomic spectroscopy, Mass spectrometry, Thermal analysis and Molecular spectroscopy in the chemistry Department. The NanoWS laboratories showed several of their instruments, which included Bruker LC-QToF MS, Bruker Maldi-MS, ICP-MS, SEM., etc.

There were short presentations from invited speakers, which included Prof Luke Chimuka (Wits), Prof Titus Msagati (NanoWS, UNISA) & Dr. H Nyoni (NanoWS, UNISA).

Refreshments sponsored by Anatech Analytical Technology and LECO, were well appreciated. Overall, the event provided an environment for networking especially during refreshments.

**Prof N Nindi**  
**Chairperson Analytical Chemistry**

## **CHEMICAL EDUCATION**

Prof Marissa Rollnick retired as the coordinator of the Chemical Education Division at the start of 2017. She was replaced by Prof Helen Drummond, North-West University.

Prof Helen Drummond was the recipient of the SACI Chemical Education Medal in 2016. Her talk was originally scheduled to take place at Wits together with the AGM of the Central Division in October 2016, but due to #FeesMustFall protests it was postponed to May 2017.

The International Conference on Chemical Education, ICCE, 2020 has been awarded to Cape Town in 2020. Prof Bette Davidowitz worked on the proposal in conjunction with Ms Natalie Naudé of Cape Town Convention Bureau, Wesgro, and Prof Marietjie Potgieter presented it to the CCE meeting in Brazil. The committee accepted our bid based on the perception that it will mean much to chemistry and science education in South Africa to host the conference.

Prof H Drummond  
**Chairperson Chemical Education**

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**ANNUAL REPORT ON THE ACTIVITIES OF THE CHROMATOGRAPHY DIVISION  
FOR THE PERIOD MAY 2016 TO APRIL 2017**

**A) COMMITTEE and MEMBERSHIP:**

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

Chairperson: Dr. Magda Rösemann  
Immediate past Chairperson: Dr. Patricia Forbes  
Treasurer: Mrs. Belinda Hickman Mosdell  
Membership/Communications: Dr. Yvette Naude  
Student Liaison: Prof. Luke Chimuka  
Branding/Website: Dr. Tyren Dodgen  
Minutes Secretary/Vice chair Ms. Vuyo Silwana  
Additional members: Mrs. Anita Botha, Mr. Martin Brits, Mrs. Wiana Louw and Mrs. Hannalien Meyer.

**Western Cape Representation**

Chairperson: Prof. André de Villiers  
Secretary: Dr. Gordon Shephard  
Additional members: Prof. Ben Burger, Prof. Ivan Green, Brenda Marx, Iain Moodie, Denice Smit, Dr. Marietjie Stander, Dr. Mare Vlok, Merrill Wicht and Wessel Kriek

**KwaZulu Natal Representation**

Mr. Lawrence Mzukisi Madikizela  
There are currently over 494 members on the ChromSA mailing list.

**B) ANNUAL GENERAL MEETING:**

The AGM was held on 12 September 2016 during the ChromSAAMS 2016 Conference held at Riverside Sun in Vanderbijlpark and 36 people attended.

**C) AWARDS:**

No nominations were received for the Chromatographer of the year award

**D) FINANCES:**

The funds held by the National ChromSA division are >R400 000 (main income sources for the period were the profit made from ChromSAAMS 2016). ChromSA Western Cape has funds of >R251 000.

**E) EVENTS ORGANISED:**

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

- ChromSAAMS 2016 Conference was held at the Riverside Sun in Vanderbijlpark

from 11 to 16 September 2016. The program included presentations by eight invited speakers. The Conference was well attended by 120 delegates including students.

- ChromSAAMS 2016 was followed by a two day workshop by Jack Cochran titled: Practical Gas Chromatography – Tips and tricks and tools to improve laboratory efficiency and save money.
- The Analytical Chemistry Division and ChromSA arranged a visit to the Laboratories of the Department of Chemistry at UNISA on 2 March 2017. This was followed by presentations from invited speakers Prof Like Chimuka, Prof Titus Msagati and Dr H Nyoni. Refreshments were sponsored by LECO and Anatech.
- ChromSA Western Cape arranged a presentation by Jack Cochran on 21 September 2016 on GCxGC titled: Can GCxGC ever be the DNA profiling of environmental forensics? This event was sponsored by LECO Africa
- KZN organized a ChromSA seminar on 5 April 2017 at DUT. Guest presenters were Alexander Whaley and Peter Gorst-Allman from LECO. Five postgraduate students from KZN Universities presented their research.

#### **F) FUTURE EVENTS:**

ANALITIKA 2018 Conference, due to take place in June/July next year, will be the primary focus for the year ahead. ChromSA is also participating in the next SACI Convention due in December 2108

#### **G) CONCLUDING COMMENTS:**

The hard working members of the ChromSA committee want to thank all the members who regularly attend our events for their support. We also want to express our sincere appreciation to our generous sponsors for their contributions during the year.

**Dr Magda Rosemann**  
**Chairperson ChromSA**

### **ENVIROMENTAL CHEMISTRY**

Following the successes of the Environmental Persistent Pollutants (EPP) Symposia and workshop in 2015 and 2016, we are proud to announce the EPP 2017 Symposium and workshop. Due to popular demand, the EPP 2017 Symposium has been extended to two days instead of the usual one day. The EPP 2017 will be held on 2-5 October 2017, at the Holiday Inn Conference Centre, Sunny side Shopping Mall, Pretoria. The symposium website reads: [www.epp2017.com](http://www.epp2017.com). The themes of the symposium are:

- EPP in environmental media and biological samples
- Indoor exposure to EPP
- Analytical methods and techniques for EPP analysis
- Emerging EPP
- Mercury and other trace metals
- Biosensors for EPP detection

Participation in both the symposium and workshop is offered at a very much reduced cost, curtesy of our sponsors, Shimadzu SA, UNIDO and TUT. Training workshop attendance is limited to 10 delegates with preference to students from South African universities where high powered analytical facilities are not available and from other African countries. The three-day training workshop covers sample handling, extraction and analysis using different extraction

techniques and GC-MS, LC-MS-MS, ICP, AAS and SPE. Certificate of attendance will be issued at the end of the training. Training will be conducted by applications chemists from Shimadzu SA and Postdoctoral Research Fellow from TUT.

**Prof OJ Okonkwo**  
**Chair SACI Environmental Chemistry Division**

### **PHYSICAL CHEMISTRY**

Unfortunately, the Physical Chemistry Division has been inactive for a number of years. Plans, however, are afoot to revitalize this important Division of the Institute. We invite all members who would be willing to serve on the committee for this Division to contact the SACI Administrator, Mrs Laila Smith.

Over the past few years, the Carman Physical Chemistry Symposium has been held in conjunction with the Inorganic Chemistry Biennial Meeting. This year it was held at the Arabella Hotel and Spa, Hermanus, close to the town of Kleinmond in the Western Cape from 25 to 29 June. The conference was well attended and a full account is given under the Inorganic Chemistry Division Report. It seems that combining these two Divisional Meetings works well and SACI will continue to do so for the near future.



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The special issue emanating from the 3rd International symposium on Electrochemistry, May 2015, was published as a special edition of Journal of Nano Research, vol 44 (2016) with Prof Baker and Prof Iwuoha as guest editors. The online version is available for viewing at <https://www.scientific.net/JNanoR.44>

The 4th International symposium on Electrochemistry will take place on 16-18 November 2017 hosted by the University of Johannesburg with Prof Omotatyo Arotiba as the chairperson of the

local organising committee. Prof Baker has served SACI and ElectrochemSA for the past 10 years as division chair and council member. It is the intention of the division to hold elections at the November 2017 meeting in Johannesburg to elect a new chairperson and supporting office bearers. We invite you to join us for the next ElectrochemsSA symposium for which the first call is live at: [http://www.saci.co.za/ElectrochemSA/symposium\\_home.html](http://www.saci.co.za/ElectrochemSA/symposium_home.html)

### **ElectrochemSA supporting the International Society of electrochemistry (ISE)**

#### ***Regional representative activities:***

Prof Baker was symposium organiser for symposium 1 themed “New Horizons in Analytical Electrochemistry” co-ordinated by Prof Thomas Doneux (67th Annual meeting, The Hague, Netherland 2016). South Africa in particular, was represented by 23 delegates participating in the final scientific programme as well as Prof Modupe Ogunlesi (Nigeria) who has been a faithful supported of ISE over many years. We have engaged in collaboration to host Prof Ogunlesi’s PhD student at SensorLab (UWC, South Africa ) on research exchange visit. Priscilla Baker was the co-ordinator for symposium 1 “New Experimental Trends in Analytical Electrochemistry” of 68th ISE meeting (68th Annual meeting, Providence, USA, 2017). Representatives from South Africa who will attend the Providence meeting include the following collaborators Prof Arotiba and three of his researchers (University of Johannesburg), Dr Jessica Chamier (University of Cape Town), Dr Masikini and Makelane (SensorLab, UWC) as well as Dr Phillipe Banet (France) who will be presenting the collaborative research of our shared PhD student.

70th Annual Meeting of ISE will be hosted by ISE South Africa in Durban, South Africa (4-9 August 2019). This is the first time an electrochemistry meeting of this magnitude will be hosted in our country. This means that ElectrochemSA community will have to work closely together with its colleagues in Africa and the world, to ensure the success of the 2019 meeting.

Prof. Priscilla G L Baker

**Chairperson ElectrochemSA**

## **INORGANIC CHEMISTRY**

The 18th SACI National Inorganic Chemistry Conference and Carman Physical Chemistry Symposium (Inorganic 2017) was held at the Arabella Hotel and Spa, Hermanus close to the town of Kleinmond in the Western Cape. It started on Sunday 25th June 2017 with a welcome mixer held in the hotel lounge and bar and ended with a closing ceremony immediately before lunch on Thursday 29th June.

The conference consisted of two full days and two half days and covered key aspects of modern inorganic and physical chemistry, including: bioinorganic chemistry; metal-organic frameworks and porous materials; reaction mechanisms; computational chemistry; structure and bonding; metals in medicine; catalysis; nanomaterials and nanotechnology; organometallic chemistry.

The programme included five plenary speakers who are prominent international experts. Titles of their 45 minute lectures are included after their names and affiliations:

- D. Scott Bohle, Canadian Research Chair in Bioinorganic Chemistry, Department of Chemistry, McGill University, Montreal, Canada. *New chemistry from ancient drugs: malaria pigment and the quinoline antimalarials.*

- Matthias Bickelhaupt, Department of Chemistry, Vrije Universiteit Amsterdam, Amsterdam, Netherlands. *Towards rational design of chemical reactions.*
- Orde Q. Munro, DST-NRF SARChI Chair in Bioinorganic Chemistry, School of Chemistry, University of the Witwatersrand, Johannesburg, South Africa. *Elucidating mechanisms of action in cytotoxic DNA-binding Au(III) and Cu(II) complexes.*
- Peter J. Sadler, Department of Chemistry, Warwick University, Warwick, United Kingdom. *Design of precious metal anticancer and antimicrobial drugs for combatting resistance.*
- Karine Philippot, Laboratoire de Chimie de Coordination, CNRS, Toulouse, France. *Synthesis of metal nanomaterials for catalysis inspired by molecular chemistry concepts.*

One 45 minute SACI award lecture was presented:

- 2016 Gold Medallist of the South African Chemical Institute. Timothy J. Egan, Professor of Inorganic Chemistry, University of Cape Town. *Exploring the fate of haem in the malaria parasite.*

Ten 30 minute keynote lectures were given:

- Susan A. Bourne, Department of Chemistry, University of Cape Town. *Chromophoric framework solids for sensing and storage.*
- Manuel A. Fernandes, School of Chemistry, University of the Witwatersrand. *Molecular dynamics from slow diffraction experiments.*
- Jeanet Conradie, Department of Chemistry, University of the Free State. *Influence of the electronegativity of different  $\beta$ -diketonato substituents on the reactivity of iron(III)  $\beta$ -diketonato complexes.*
- Kevin J. Naidoo, Department of Chemistry, University of Cape Town. *Computational enzymology: virtually climbing hills and breaking through barriers to reveal reaction mechanisms.*
- Jan Rijn Zeevaart, Radiochemistry, NECSA. *Current application of radiometals in radiopharmacy.*
- Stephen O. Ojwach, School of Chemistry and Physics, University of KwaZulu-Natal. *Catalytic hydrogenation reactions of saturated substrates mediated by nitrogen-donor Fe(II), Ni(II) and Ru(II) complexes.*
- Priscilla G. L. Baker, Department of Chemistry, University of the Western Cape. *New materials for new frontiers –an electrochemical perspective.*
- Nosipho Moloto, School of Chemistry, University of the Witwatersrand. *Semiconductor nanocrystals as effective materials for nanoelectronics.*
- Werner E. van Zyl, School of Chemistry and Physics, University of KwaZulu-Natal. *Phosphor-1,1-dithiolate complexes: formation and application.*
- Marile Landman, Department of Chemistry, University of Pretoria. *CpM(NHC) (M = Cr, Ni, Ru) complexes: synthesis, electrochemistry, DFT studies and C-C and C-O catalytic applications.*

In addition, there were 28 oral presentations of 20 minutes duration. Speakers were from: the University of the Witwatersrand; Vaal University of Technology; Durban University of

Technology; Rhodes University; CSIR; Cape Peninsula University of Technology; North-West University (Mafikeng Campus); Nelson Mandela Metropolitan University; the University of Western Ontario, Canada; McGill University, Canada; the University of KwaZulu-Natal

(Westville Campus); the University of Pretoria; Stellenbosch University; the University of KwaZulu-Natal (Pietermaritzburg Campus); the University of Fort Hare; North-West University (Potchefstroom Campus); the South African Agency for Science and Technology Advancement (SAASTA); the University of Johannesburg.

Eighteen posters, 17 of them student posters, were selected for 4 minute flash talks. These represented the following institutions: Durban University of Technology; Tshwane University of Technology; Stellenbosch University; the University of Johannesburg; the University of Cape Town; Nelson Mandela Metropolitan University; the University of Limpopo; the University of KwaZulu-Natal; the University of Zululand; North-West University; Cape Peninsula University of Technology; University of Pretoria.

Prizes for the best flash talks presented by MSc or PhD students were sponsored by the American Chemical Society through the journal *Inorganic Chemistry*. Three gold prizes to the value of R1500 were awarded and three silver prizes to the value of R500. The winners were as follows:

- Gold Prizes:

Isabella Claassens (Stellenbosch University) - *Solvent-dependent site-selective photochemical [2+2] cycloaddition in a cadmium MOF.*

Nicola Dare (University of Cape Town) - *Using metal-organic frameworks to investigate iron(III)porphyrins.*

Kudzanai Nyamayaro (Cape Peninsula University of Technology) - *Dissolution control of highly soluble active pharmaceutical ingredients via co-crystallisation.*

- Silver Prizes:

Tendai Dembaremba (Nelson Mandela Metropolitan University) - *Investigating oxovanadium(IV) complexes as potential catalysts for oxidative desulfurization.*

Daphney Makhafola (University of Limpopo) - *Graphene oxide/metal organic framework nanocomposite as an effective electrocatalyst for hydrogen evolution reaction.*

Chandre Sammy (Stellenbosch University) - *Towards the development of new metallo-drugs to combat malaria.*

In total 119 posters were presented and prizes were awarded to MSc and PhD student presenters. These were sponsored by the Royal Society of Chemistry, South Africa Southern Local Section. Three gold prizes to the value of R1500 each and three silver prizes to the value of R500 each were awarded. The winners were as follows:

- Gold Prizes:

Ms W. Duminy (University of the Witwatersrand) - *Design and synthesis of a Pd(II) chelate for targeting solvent-exposed histidine residues.*

Ms R Mohunlal (University of Cape Town) - *An investigation into the biological molecules involved in haemozoin formation in the malaria parasite.*

Ms K. Shunje (Cape Peninsula University of Technology) - *Hydrogen bonding in selected cocrystals of sulfapyridine and sulfadiazine.*

- Silver Prizes:

Ms N. Baartzes (University of Cape Town) - *Synthesis and antimicrobial evaluation of organometallic aminoquinoline-benzimidazole hybrids.*

Ms S. Bhikraj (University of KwaZulu-Natal) - *Gold(III) pseudomacrocyclic bis(pyrrolide-imine) Schiff base complexes: potential chemotherapeutic agents.*

Mr T. Senapathi (University of Cape Town) - *A study of the substrate selectivity of the human ST6Gal-I enzyme.*

The conference was organised by a team of academics from the Cape Peninsula University of Technology, Stellenbosch University, University of Cape Town and the University of the Western Cape. The organising committee consisted of the following people:

Dr Edith Antunes, UWC – scientific programme sub-committee

Dr Nikoletta Bathori, CPUT – registration desk

Dr Prinessa Chellan, SU – social programme and SACI liaison, abstract book

Dr Katherine de Villiers – committee secretary

Prof. Timothy Egan – chair

Prof. Delia Haynes – coordinator of volunteers and session manager

Dr Rehana Malgas-Enus – treasurer

Dr Clive Oliver – scientific programme sub-committee

Prof. Greg Smith – scientific programme sub-committee chair

A total of 180 delegates attended the conference. The vast majority of delegates were from South African institutions, with 11 (6%) from other countries. These were from Botswana (5), Cameroon (1), Canada (3), France (1) and the United Kingdom (1). South African delegates represented a wide range of academic institutions as well as the CSIR, NECSA and NRF. Sponsorship was obtained from a considerable number of companies and entities. We are extremely grateful for their support. These comprised: the Department of Science and Technology of the Republic of South Africa; the South African Agency for Science and Technology Advancement (SAASTA); University of Cape Town; Bruker; PerkinElmer; Stellenbosch University; Devos Laboratory Consultants; Poretech; Sumaridge Wine Estate; Wirsam Scientific; University of the Western Cape; Anton Paar; Benguela Cove Lagoon Wine Estate; Bruno Steiner Lab Consultancy; Kimix; Labotec; United Scientific; Inorganic Chemistry; Royal Society of Chemistry, South Africa South, Local Section.

The sponsorship from the Department of Science of Technology was used to subvent student registration fees. Thanks in part to this student delegates made up 54% of the total conference attendees.

The social programme consisted of a cocktail mixer on Sunday 25th June, a braai on Monday 26th June and a gala dinner on Thursday 28th June. All were held at the Arabella Hotel and Spa. The Tuesday afternoon excursion options were a wine tour followed by dinner at Hermanus Harbour Rock restaurant or a tour to Hermanus. These were for delegates own accounts. Affordable supper options were offered by the hotel for the benefit of students who remained at the Arabella on the free afternoon.

Feedback from delegates has been overwhelmingly positive.



Inorganic 2017 and Carman Physical Chemistry Symposium Delegates

**Prof TJ Egan**  
**Chairperson Inorganic Chemistry**

## INDUSTRIAL CHEMISTRY

During the year a meeting was convened with interested parties to revitalise the division. A committee was decided upon to move forward with the division remit and involve representation from the coordination committees. A pressing issue is the involvement of the industry in the convention in December 2018.

**Dr M Booth**  
**Chairperson Industrial Chemistry**

## MOLECULAR MODELLING

On 8 December 2016 at 15:40 the annual meeting of the Molecular Modelling Division of SACI and the Centre for High-Performance Computing (CHPC) special interest group (SIG) Computational Chemistry took place at the International Conference Centre (ICC) in East-Londen.

The Chairperson (Dr CGCE van Sittert) welcomed all the members present. The minutes of the previous meeting were approved without any changes.

Dr KK Govender (the contact person for people using the computational software on the CHPC) was thanked for the extra mile he goes when helping users. Dr Govender gave a presentation on the CHPC resources available, as well as the statistics of the usage of the resources. After Dr Govender's presentation, the Chairperson asked the meeting to help to identify needs in the Molecular Modelling / Computational Chemistry community.

### Needs identified:

1. List of commands to use LINX based software.
2. Information on accessing CHPC to load calculations.
3. An introductory course to help first-time users of CHPC to access resources.
4. Webinars (online sessions) or visits by experts to institutions to give training.
5. Workshops by RSA experts instead of experts from abroad.
6. More opportunities for post-graduate students in Molecular Modelling / Computational Chemistry to present their work.
7. More communication in division / SIG than once a year.

### Needs addressed since meeting in December:

1. List of commands to use LINX based software is available on CHPC WIKI
2. Development of standard operating procedures to use Gaussian and VASP on CHPC is underway.
3. A VASP webinar/workshop for new users took place in June 2017. This workshop will be repeated and then followed by a more advanced workshop.
4. A first draft list of experts that are available (willing) to give training was compiled:
  - a. Dr Tseke (WSU) – Introduction to use CHPC
  - b. Mr Ngumbo – Introduction to use CHPC
  - c. Mr Valakumar and Dr David Santos Carballal (Cardiff, UK) – VASP
  - d. Dr van Sittert (NWU) – Materials Studio – DMol<sup>3</sup> and CASTEP
  - e. Dr Lobb (RU) – Gaussian
5. Dr Werner Jansen van Rensburg of the CHPC invited the SIG to come with suggestions for opportunities for post-graduate students in Molecular Modelling / Computational Chemistry

/ Materials to present their work. One suggestion was to host a two-day students symposium before or after the annual CHPC meeting each year. This suggestion will be discussed with CHPC annual meeting organising committee for the CHPC meeting in December 2017.

**Dr C van Sittert**  
**Chairperson Molecular Modelling**

### ORGANIC CHEMISTRY

I am delighted to report that a most successful 14<sup>th</sup> Frank Warren Conference was held by the Eastern Cape Section under the chairmanship of Prof Rui Krause. This has been reported on and thus no further information is necessary in this regard.

The next Frank Warren Conference, the 15<sup>th</sup>, is scheduled for 2019 in KwazuluNatal and thus the Organic Chemistry Division has something to look forward to with great expectation.

It may or may not be necessary to stress the importance to all supervisors of Organic Chemistry students, that it is vital that each of their MSc students presents at least one poster/short lecture at a local SACI convention during their studies and each PhD student presents at least one/two poster(s) or a short podium lecture during the 3-4 year study period at a local SACI convention. Supervisors need to financially plan to ensure this happens since SACI makes this possible by organising both the Frank Warren as well as the National Convention as platforms in different parts of the country. The address of either will naturally determine the number of students supervisors are able to sponsor. The point I wish to make is that no student should receive either an MSc or PhD degree if they have not presented their work at a SACI local convention (within the financial ability of the supervisor) as this forms an integral part of their development as organic chemists.

**Emeritus Professor Ivan R Green**  
**Divisional Chairman of Organic Chemistry**



Supporting all Mass Spectrometry activities in South Africa  
A Division of the South African Chemical Institute  
[www.saams.up.ac.za](http://www.saams.up.ac.za)



No Report

ACS

### **SA Chapter of the American Chemical Society**

The South Africa ACS chapter had one event in 2016. Professor William L Jorgensen from Yale University delivered the ACS lecture at The Southern African Biochemistry and Informatics for Natural Products (SABINA) International Natural Products Conference just outside the Kruger National Park, South Africa in late August 2016. He spoke about using computational chemistry to design drugs for the treatment of a number of diseases in a talk entitled “Computer-aided design of anti-HIV and anti-cancer agents.” His visit was sponsored

mainly by SABINA, however, the South Africa Chemical Institute (SACI) provided a gift for Professor Jorgensen after his talk. His lecture was well received and it was a very successful conference where Professor Jorgensen interacted with many of the young scientists over the 4 day conference.

The main challenge of the South Africa ACS chapter is finding the time as full-time employed academics to organise any ACS event without funding. Luckily for us SACI is able to provide a small grant to help. As we have limited funding we have not been able to meet as a committee as we are in different cities in South Africa.

**Goals 2017:**

Try to meet as a committee (or part of the committee) to discuss the ACS South Africa Chapter.

Organize one invited ACS lecture (sponsored by SACI).

One member of the South Africa ACS chapter committee, or SACI, attend “The 3<sup>rd</sup> TCS International Conference” in September 2017 to meet with the American Chemical Society.

**Concerns and challenges:**

Financial costs associated with the goals and finding the time to organize or attend the event/s.

**Prof CB de Koning**  
**Chairperson ACS**



**Report for SACI Council meeting <sup>trd</sup> August 2017**

**Summary of activities for 2016**

- Support for Sci Bono Science centre including the Emasondosondo Chemistry Bus, Chemistry laboratory, “spectroscopy in a suitcase” and donation of textbooks for schools
- Sponsor “Speak to a Scientist” lectures at Sci Bono
- Support for KZN Science Centre
- Support for local chemistry conferences ChromSAAMS.
- Donations of RSC books to local universities (UKZN Pietermaritzburg, UNISA, TUT)
- Judging and special subject prizes for Chemistry projects at Eskom Young Scientists Expo

- Support for Seabe High School/MDSE Project (Peter Malatji)

### **RSC activity in Africa**

- Ongoing support for Pan-African Chemistry Network (PACN)
- Formation of African Steering group consisting of local sections and area representatives in Africa. Ian Bratt was elected as Chairman of this group but no activity has taken place to date.

### **Involvement with SACI**

- Joint RSC SA North/SACI Central/North annual function (28<sup>th</sup> August 2016)
- Joint RSC SA North/SACI KZN lunch
- Sponsorship of prizes at SACI Central (Gauteng) Young Chemists symposium
- Sponsorship of prizes at SACI North Young Chemists symposium
- Sponsorship prizes for KZN Student symposia
- Organisation of public lectures to promote Chemistry

The five-year RSC/SACO co-operation agreement expires this year and its renewal needs to be discussed with the RSC UK.

The annual grant has only just been received from the RSC UK. Projects in 2017 are expected to be similar those supported in 2016 with the addition of Unizulu Science centre in Richards bay and the Whizzbang group at Wits.

**Ian M Bratt (Dr)**

**Chairman, RSC SA North**



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Chemical Sciences



## *Green chemistry report-2017*

Green Chemistry continues to grow and diversify in South Africa, both in terms of the number of people involved and the range of approaches to improving the environmental impact/sustainability of our work in terms of energy (catalysis, microwave chemistry), renewable resources (biofuels, use of chitosan, natural products), and reduced emissions (flow chemistry, “green solvents”, supercritical fluid technology) – to mention only a few. These initiatives have increased in both research activities and teaching activities across the board.

### **Committee**

Rosa Klein (Rhodes), Chair  
 Rui Krause (Rhodes), (Secretary)  
 Vincent Nyamori (UKZN), (Treasurer)  
 Werner van Zyl (UKZN), Vice Chair  
 Martin Onani (UWC)

Philip Labuschagne (CSIR), (industrial representative)  
Alu Tshavhungwe (DST), (government representative)  
The committee can be contacted through the secretariat ([greenchem@ukzn.ac.za](mailto:greenchem@ukzn.ac.za)) or through the chair ([r.klein@ru.ac.za](mailto:r.klein@ru.ac.za)).

### **Frank Warren Conference**

Green chemistry was well represented at the Frank Warren Conference with a keynote talk from Darren Riley (of University of Pretoria) on approaches to organic synthesis using flow chemistry. There were also several posters which showcased the growing trend toward sustainable or benign synthetic methods. Green chemistry does not have a high profile and, although we approached several potential speakers from outside, we were not able to attract an external plenary, and Dr Riley did not identify himself as a green chemist.

### **Curriculum change**

The surest way to change the perception and uptake of a new philosophy is also the slowest way: incorporate it into the curriculum and teach it to the next generation. There are new honours courses at Rhodes University and at the University of KwaZulu Natal. These courses have been championed by members of the Green Chemistry Division committee.

### **Consultations**

The SACI website has opened up opportunities for consultations from members of the public to start green chemistry based small businesses in Cape Town. The success of these ventures will raise the profile of the Chemical Industry and SACI, and will hopefully start to bear fruit within the next twelve months. We would welcome volunteers from the academic community who would be willing to consult on green chemistry matters.

**Dr Rosalyn Klein**  
**Chairperson Green Chemistry**



**ThermSA report 2016 – 2017**

### **Committee**

Chairperson: Dr Liezel van der Merwe (UP)  
Immediate Past Chairperson: Dr. Kobus Wagener (Necsa)  
Treasurer: Ms. Isbé van der Westhuizen (UP)  
Secretary: Dr. Andrew Pienaar (Necsa)  
Website/Communication: Mr. Benni Vilakazi (Necsa)  
Instrument supplier representative: Mr Ross Burnham  
Regional Representative (WC): Prof. Chris Woolard (NMMU)

### **Events 2017**

ThermSA will be hosting regular small lectures in partnership with our sponsors. The idea is to create an informal networking platform for people interested in thermal analysis. The first of these was held on 15 March 2017, at the offices of ALS laboratory services. Dr Kobus Wagener presented a very interesting seminar on current thermal analysis research and capabilities at Necsa.

### **Knowledge dissemination**

Regular newsletters to members and interested parties ensure that local events such as conferences, webinars and training sessions are communicated, thereby further developing the field of thermal analysis in South Africa.

### **International Ties**

ThermSA is working with the Instituto Internacional de Análise Térmica in Brazil to develop thermal analysis competence in both these countries. We have established membership as an affiliated society of ICTAC (International Confederation of Thermal Analysis and Calorimetry).

### **Membership**

There are currently 46 members of SACI who are members of ThermSA. In addition there are 4 members who are not SACI members. The number of members affiliated with our Society has therefore increased slightly from the previous year. We aim towards increasing our membership by creating awareness amongst SACI members, and organising workshops and symposia.

**Dr L van der Merwe**  
**Chairperson: ThermSA**

**Dr A Pienaar**  
**Secretary: ThermSA**

## **SACI STUDENT REPORT**

SACI student members have raised the following concerns:

- No real interaction or networking between SACI student members.
- No platform for research and idea exchanges such as MyRSC that the RSC provides.
- Being a SACI member as a student is only useful for their CV – the majority of students whom attend conferences acquire external funding and thus the conference discounts aren't beneficial to the actual student.
- They would like information (such as articles/newsletters/breakthroughs in SA chemistry) through social media platforms.
- The concerns above were raised previously without any feedback.
- After getting a job, most students say they won't continue being a member.

**Bilal Ismail**  
**SACI Student Representative**

## **FINANCIAL REPORT**

The audited SACI accounts are available on request. The table above provides a summary of the Institute's financial affairs for 1<sup>st</sup> May 2016 to 30<sup>th</sup> April 2017.

Generally, SACI's finances are moving in the right direction but some challenges still remain.

- Income increased by 24.6% mainly due to strong membership growth over this period.
- As a result, income was almost R53K greater than budgeted.
- Costs were generally well contained but still showed a 13.7% increase on the previous year.
- The main increases in expenditure were the journal (+R31K/79%) and Computers (+R17K/102%). The journal costs included payments which should have been made in the previous financial year. The computer costs included a new computer for the Secretary which had to be replaced but was not originally budgeted for.
- Items below budget included salaries and wages (-R14.5K), travel and accommodation (-R13K) and merchandise (-R18K).

- With the above budgeted income and below budgeted expenses, the operating loss was reduced to R147673 (down from R165708 the previous year and R63337 less than the budgeted loss of R211010).

Investments continued to be under pressure due to difficult market conditions. However, they still showed a modest growth during the period under review.

Conference income was also substantially lower at only R25866 (compared to R296081 the previous year) since the current year included only the Frank Warren conference whereas the previous income was from the National Convention which is a much larger event.

In terms of the Budget for 2017/18, we have increased the expected income by 6.6% based on an expected continuing increase in membership. The introduction of the PrChemSA designation has definitely helped to increase the membership and we must still continue to encourage our chemistry colleagues to become members of SACI.

By limiting cost increases to a minimum and overall by 4.5%, it is hoped that we can reduce the operating deficit still further to around R144400. Whilst it is still not ideal to be budgeting for an operating loss, we are gradually moving in the right direction.

Once again, I would like to thank Laila Smith for her day to day handling of the receipts and payments and the general handling of the SACI accounts. Without her, the SACI accounts would not be kept up to date and in good order.

The finances of SACI are quite complex due to the holding of and lending monies to/receiving monies from the various SACI sections, divisions and interest groups. However, overall, the Institute is currently in a very healthy financial position. Nevertheless, the main aim must still be to increase membership to a point where the income meets the day to day running costs of the organisation.

#### SACI SECRETARIAT BUDGET AND BALANCE SHEET FOR THE PERIOD 1 MAY 2016 TO 30 April 2017

|                                      | 2015-2016           | 2016-2017           | 2016-2017           |
|--------------------------------------|---------------------|---------------------|---------------------|
| Income                               | Received            | Received            | Budget              |
| Membership Fees                      | R 328,630.00        | R 403,172.66        | R 365,000.00        |
| PrChemSA admin and registration Fees | R -                 | R 14,530.00         | R 12,000.00         |
| Journal Income                       | R 3,294.88          | R 5,370.16          | R -                 |
| IUPAC income                         | R 7,700.00          | R 7,200.00          | R 8,470.00          |
| Unallocated Income                   | R -                 | R 4,577.18          | R -                 |
| Merchandise/Ties and Scarfs          | R 3,900.00          | R 2,400.00          | R 5,000.00          |
| Admin donation from confrences       | R 10,000.00         | R -                 | R -                 |
| Advertising Income                   | R 20,200.00         | R 24,350.00         | R 22,220.00         |
| Critical Skills Evaluation           |                     | R 4,000.00          |                     |
| <b>Total Income</b>                  | <b>R 373,724.88</b> | <b>R 465,600.00</b> | <b>R 412,690.00</b> |

| Expenditure                                     | Paid         | Paid         | Budget       |
|---|--------------|--------------|--------------|
| Journal Expenses                                | R 46,034.93  | R 82,308.97  | R 51,000.00  |
| Bank Charges                                    | R 6,524.83   | R 8,361.97   | R 7,200.00   |
| Computer/Software/Pastel/Internet/SAJC          | R 18,381.60  | R 37,043.90  | R 20,000.00  |
| Courier and Postage                             | R 1,961.07   | R 1,067.45   | R 2,200.00   |
| Entertainment Expenses (Council/Exco Functions) | R 10,585.23  | R 13,065.78  | R 12,000.00  |
| General Expenses                                | R 7,068.41   | R 5,899.16   | R 8,000.00   |
| Printing, Stationery and Photocopying           | R 11,666.37  | R 16,578.42  | R 12,500.00  |
| Salaries and Wages incl. Wits 25%               | R 324,450.51 | R 335,498.63 | R 350,000.00 |

|   |                     |                     |                     |
|---|---------------------|---------------------|---------------------|
| Administration Fee                      |                     |                     |                     |
| Telephone and Fax                       | R 10,929.45         | R 6,170.25          | R 12,000.00         |
| Teleconference - Chorus Call            | R -                 | R 5,961.73          | R -                 |
| Travel and Accommodation                | R 32,601.59         | R 21,604.50         | R 35,000.00         |
| Presidents Travel                       |                     | R -                 | R 5,000.00          |
| Subscriptions (IUPAC/FASC/EBSCO/NSTF)   | R 12,395.54         | R 9,808.64          | R 15,000.00         |
| Auditors                                | R 9,000.00          | R 9,500.00          | R 10,000.00         |
| Medal Prize Money and Minting of Medals | R 19,833.38         | R 22,526.48         | R 22,000.00         |
| Medal Functions/Donations               | R 10,000.00         | R -                 | R 5,000.00          |
| Rental                                  | R 18,000.00         | R 18,000.00         | R 20,000.00         |
| Merchandise                             | R -                 | R 18,477.12         | R 36,800.00         |
| Critical skills evaluation Prof Breet   | R -                 | R 1,400.00          | R -                 |
| <b>Total Expenditure</b>                | <b>R 539,432.91</b> | <b>R 613,273.00</b> | <b>R 623,700.00</b> |

| Item              | Budget               | Real                 | Real                 |
|-------------------|----------------------|----------------------|----------------------|
| Total Income      | R 373,724.88         | R 465,600.00         | R 412,690.00         |
| Total Expenditure | R 539,432.91         | R 613,273.00         | R 623,700.00         |
| <b>Balance</b>    | <b>R -165,708.03</b> | <b>R -147,673.00</b> | <b>R -211,010.00</b> |

| SACI Admin Account           |  |  |              |
|------------------------------|--|--|--------------|
| Wits Admin account           |  |  | R 1,876.26   |
| Standard Bank Cheque account |  |  | R 115,989.13 |

| Central Fund Account              | Movement    | Opening Balance | Total                 |
|-----------------------------------|-------------|-----------------|-----------------------|
| Investec Equity Fund              | R 2,702.86  | R 436,636.28    | R 439,339.14          |
| Old Mutual                        | R -3,077.85 | R 402,084.83    | R 399,006.98          |
| Standard Bank Market Link Account | R 52,681.97 | R 365,715.13    | R 418,397.10          |
| SIM General Equity Fund           | R 12,775.79 | R 386,652.69    | R 399,428.48          |
| Stanlib Property Income Fund      | R 17,236.67 | R 502,667.80    | R 519,904.47          |
| <b>Total</b>                      |             |                 | <b>R 2,176,076.17</b> |

|                                      |                    |
|--------------------------------------|--------------------|
| <b>Total Interest on investments</b> | <b>R 29,637.47</b> |
|--------------------------------------|--------------------|

| Seed Monies and Loans | Loan        | Total              |
|-----------------------|-------------|--------------------|
| ACS Division          | R 10,000.00 | R 10,000.00        |
| INORG2017             | R 50,000.00 | R 50,000.00        |
| <b>Total</b>          |             | <b>R 60,000.00</b> |

| Profit Derived from Conferences | 2014-2015         | 2015-2016           | 2016-2017          |
|---------------------------------|-------------------|---------------------|--------------------|
| <b>Total</b>                    | <b>R 4,995.00</b> | <b>R 296,081.00</b> | <b>R 25,865.64</b> |

| Divisional Accounts not managed by SACI | Movement     | Opening Balance | Total        |
|---|--------------|-----------------|--------------|
| ChromSA                                 | R 323,944.61 | R 327,953.79    | R 651,898.40 |
| SAAMS                                   | R 56,964.52  | R 315,980.38    | R 372,944.90 |
| Western Cape                            |              | R 131,582.54    |              |

| <b>Divisions' Market Link Accounts managed by SACI</b> | <b>Movement</b> | <b>Opening Balance</b> | <b>Total</b>        |
|--|-----------------|------------------------|---------------------|
| Inorganic Chemistry                                    | R -32,172.43    | R 95,446.51            | R 63,274.08         |
| Computational Chemistry                                | R 149.73        | R 5,690.83             | R 5,840.56          |
| Chemical Education                                     | R 3.32          | R 1,126.13             | R 1,129.45          |
| Eastern Cape   | R 28,044.97     | R 90,857.31            | R 118,902.28        |
| Analytical Chemistry                                   | R -3,177.12     | R 253,090.66           | R 249,913.54        |
| Organic Chemistry                                      | R 47,585.22     | R 119,961.15           | R 167,546.37        |
| Kwazulu Natal  | R 91,332.03     | R 64,808.78            | R 156,140.81        |
| Electrochemistry                                       | R 1,984.80      | R 50,650.47            | R 52,635.27         |
| North  | R 19,409.10     | R 24,944.73            | R 44,353.83         |
| Central  | R -24,019.95    | R 24,994.48            | R 974.53            |
| Green Chemistry  | R 2,526.46      | R 81,804.87            | R 84,331.33         |
| ACS Chapter  | R -155.28       | R 5,049.23             | R 4,893.95          |
| ThermSA  | R -6,843.95     | R 33,095.97            | R 26,252.02         |
| <b>Total</b>   |                 |                        | <b>R 976,188.02</b> |

SACI SECRETARIAT BUDGET FOR THE PERIOD 1 MAY 2017 TO 30 April 2018

|                                      | 2016-2017           | 2016-2017           | 2107-18             | 2107-18     |
|--------------------------------------|---------------------|---------------------|---------------------|-------------|
| Income                               | Actual              | Budget              | Budget              | Increase    |
| Membership Fees                      | R 403,172.66        | R 365,000.00        | R 440,000.00        | 9.1%        |
| PrChemSA admin and registration Fees | R 14,530.00         | R 12,000.00         | R 16,000.00         | 10.1%       |
| Journal Income                       | R 5,370.16          | R -                 | R -                 | -100.0%     |
| IUPAC income                         | R 7,200.00          | R 8,470.00          | R 8,000.00          | 11.1%       |
| Unallocated Income                   | R 4,577.18          | R -                 | -                   |             |
| Merchandise/Ties and Scarfs          | R 2,400.00          | R 5,000.00          | R 2,500.00          | 4.2%        |
| Admin donation from conferences      | R -                 | R -                 | R -                 |             |
| Advertising Income                   | R 24,350.00         | R 22,220.00         | R 26,000.00         | 6.8%        |
| Critical Skills Evaluation           | R 4,000.00          |                     | R 4,000.00          | 0.0%        |
| <b>Total Income</b>                  | <b>R 465,600.00</b> | <b>R 412,690.00</b> | <b>R 496,500.00</b> | <b>6.6%</b> |

| Expenditure  | Actual              | Budget              | Budget              | Increase    |
|--|---------------------|---------------------|---------------------|-------------|
| Journal Expenses                                     | R 82,308.97         | R 51,000.00         | R 90,000.00         | 9.3%        |
| Bank Charges   | R 8,361.97          | R 7,200.00          | R 8,800.00          | 5.2%        |
| Computer/Software/Pastel/Internet/SAJC               | R 37,043.90         | R 20,000.00         | R 22,000.00         | -40.6%      |
| Courier and Postage                                  | R 1,067.45          | R 2,200.00          | R 1,200.00          | 12.4%       |
| Entertainment Expenses (Council/Exco Functions)      | R 13,065.78         | R 12,000.00         | R 14,000.00         | 7.2%        |
| General Expenses                                     | R 5,899.16          | R 8,000.00          | R 7,000.00          | 18.7%       |
| Printing, Stationery and Photocopying                | R 16,578.42         | R 12,500.00         | R 15,000.00         | -9.5%       |
| Salaries and Wages incl. Wits 25% Administration Fee | R 335,498.63        | R 350,000.00        | R 355,000.00        | 5.8%        |
| Telephone and Fax                                    | R 6,170.25          | R 12,000.00         | R 7,000.00          | 13.4%       |
| Teleconference - Chorus Call                         | R 5,961.73          | R -                 | R 6,500.00          | 9.0%        |
| Travel and Accommodation                             | R 21,604.50         | R 35,000.00         | R 23,000.00         | 6.5%        |
| Presidents Travel                                    | R -                 | R 5,000.00          | R -                 |             |
| Subscriptions (IUPAC/FASC/EBSCO/NSTF)                | R 9,808.64          | R 15,000.00         | R 11,000.00         | 12.1%       |
| Auditors   | R 9,500.00          | R 10,000.00         | R 10,000.00         | 5.3%        |
| Medal Prize Money and Minting of Medals              | R 22,526.48         | R 22,000.00         | R 24,000.00         | 6.5%        |
| Medal Functions/Donations                            | R -                 | R 5,000.00          | R 5,000.00          |             |
| Rental   | R 18,000.00         | R 20,000.00         | R 20,000.00         | 11.1%       |
| Merchandise  | R 18,477.12         | R 36,800.00         | R 5,000.00          | -72.9%      |
| Critical skills evaluation Prof Breet                | R 1,400.00          | R -                 | R 1,400.00          | 0.0%        |
| <b>Total Expenditure</b>                             | <b>R 613,273.00</b> | <b>R 623,700.00</b> | <b>R 625,900.00</b> | <b>2.1%</b> |

| Item              | Actual               | Actual               | Budget               | Budget      |
|-------------------|----------------------|----------------------|----------------------|-------------|
| Total Income      | R 465,600.00         | R 412,690.00         | R 496,500.00         | 6.6%        |
| Total Expenditure | R 613,273.00         | R 623,700.00         | R 625,900.00         | 2.1%        |
| <b>Balance</b>    | <b>R -147,673.00</b> | <b>R -211,010.00</b> | <b>R -129,400.00</b> | <b>4.6%</b> |

**Dr I Bratt**  
**Executive Treasurer**

## 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 Jorden | 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         |
|           |                   | 2015-2017 | B Martincigh   |

## 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              | 2015 | H Marques        |
|      |                       | 2016 | TJ Egan          |

## 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       | 2015 | AJ de Villiers    |
| 1988 | No Award       | 2016 | ZR Tshentu        |

## RECIPIENTS OF THE AECI MEDAL

|      |  |      |                                  |
|------|--|------|----------------------------------|
| 1961 | P R Enslin, L A Anderson and<br>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<br>G J Lourens |
| 1966 | C v d M Brink, W Nel, G H J Rall,<br>J C Weitz and K G R Pachler | 1984 | No Award                         |
| 1967 | M B Hanley, S C Churms and<br>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<br>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    | 2015 | NJ Coville             |
|      |                | 2016 | BS Martincigh          |

## **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<br>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<br>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 SACI POST-GRADUATE MEDAL**

- 2015 BP Camden Grover, WF Petersen, MN Pillay  
2016 MW Dlamini, I Rogers, K Gopaul

## 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
- 2015 HH Shiri, R Chitongo, OA Makgae, S De Kock, R Mente, S Magqazolo, RM Taylor, J Ferreira, M Visser, DE Chetty, S Pakade
- 2016 D Botes Myalo, B Steytler, KB Govender, J Leygonie, A Vicatos, J Lombard, L Swartzberg, AL Battison, K Nyamayaro, M Chizema

## **RECIPIENTS OF THE CHEMICAL EDUCATION MEDAL**

|      |               |
|------|---------------|
| 1993 | M J Laing     |
| 1994 | J Elsworth    |
| 1995 | M Selvaratnam |
| 1996 | JD Bradley    |
| 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      |
| 2015 | E Mavhunga    |
| 2016 | H Drummond    |

## **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       |
| 2015 | LB Klumperman |
| 2016 | No Award      |

