



The official newsletter of the Catalysis Society of South Africa

149-462 NPO

Kleinmond, South Africa, November 2015

Issue I

Welcome to CATSA 2015

On behalf of the organizing committee, I would like to welcome all delegates to the CATSA 2015 conference. This year we are expecting the final registration numbers to be between 230 and 240 delegates. We are thus pleased with the support received from the wider catalysis community. This is particularly satisfying given the current financial crisis experienced by most organizations. However what is a bit disconcerting is the reduced number of delegates from Industry but we recognize the financial pressure that many of these organizations are under at the moment. We sincerely hope that 2015 is simply an unusual year in this regard and that the situation will return to normality soon. Despite the prevailing financial situation we still have excellent support from our traditional sponsors who together with first-time sponsors have made meaningful contributions. Without the generosity of all these sponsors, organizing an event of this nature would be quite difficult. Their support is highly appreciated. A special thanks to our major sponsors, Poretech, BASF and Arabella Hotel & Spa who have made substantial contributions to the 2015 conference.

I am also pleased to be hosting the CATSA Eminent Visitor who this year is Prof. Martin Albrecht from the University of Bern in Switzerland. We are privileged to be able to host such a highly reputable researcher and we look forward to his lecture tour around the country which will see him visit eight universities over a 10 day period. We appreciate his willingness to include so many sites in his tour and hope that these visits will lead to a long and fruitful interaction with the CATSA community.



Prof Martin Albrecht
(University of Bern,
Switzerland).

In terms of the scientific programme for the CATSA 2015 conference, the scientific committee had a difficult task in selecting oral presentations for the various parallel sessions as we received several high quality abstracts. We hope that the carefully selected final programme contains something of interest for everyone and delegates are encouraged to attend as many sessions, even some of those outside of their own field of interest.

Selwyn Mapolie - Conference Chair CATSA 2015

CATSA 2014

The 2014 annual conference of the Catalysis Society of South Africa was hosted by the University of the Witwatersrand and held at the Saint Georges Hotel and Conference Centre in Pretoria. The Society would like to express its sincere gratitude to the organizing committee under the direction of Dr Ts'enoLo Lerotholi and Prof Neil Coville for organizing a flawless meeting with a lot of scientific insight and social interaction. We also would like to thank the sponsors of the 2014 event, a lot of them long term partners of the Society, without whom such an annual event would not be possible.



Prof Ulrike Diebold
(TU Vienna, Austria),
the 2014 CATSA
Eminent Visitor.

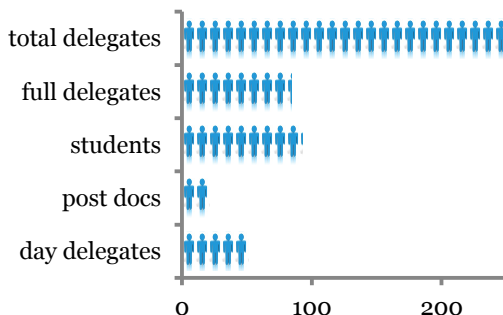
From the Chairman of CATSA

2015 has been another eventful year for CATSA and has marked a watershed in the history of the society which has now been officially registered as an NPO. Besides the successful annual conference, hosting an eminent visitor and providing support to students attending conferences, it is wonderful to see the Society growing to include the broader catalysis community in South Africa. We now have dedicated participation from heterogeneous, homogeneous, electro-catalysis and bio-catalysis researchers at the annual conference and the strong participation of students in the conference is encouraging. CATSA will continue to serve the community and it has been my honour to serve as chairperson for the last two years. I wish to extend a personal word of thanks to the committee members for their support and guidance.

The CATSA Committee 2015

During the Annual General Meeting of the Society, held during the 2014 annual conference, new members to the 2015 CATSA Committee were elected for a two year term. The new committee is as follows:

- Chairperson | Gary Patrick (Mintek)
- Secretary/Treasurer | Stephen Roberts (UCT)
- 2015 Conference Chair | Selwyn Mapolie (US)
- Media Officer | Nico Fischer (UCT)
- Student Representative | Corli Joubert (US)
- Linda Jewell (UNISA)
- Manie Vosloo (NWU)
- Dean Brady (WITS)
- Peter Mokhonoana (UL)
- Holger Friedrich (UKZN)
- Masikana Mdeleleni (PetroSA/UWC)
- Cornie van Sitteret (NWU) co-opted
- Michael Claeys (UCT) co-opted
- Francois du Toit (Clariant) co-opted
- Gregory Govender (SASOL) co-opted



The SynGas Convention 2

In March 2015 the DST-NRF Centre of Excellence in Catalysis c*change hosted the second SynGas Convention – Fuels and chemicals from synthesis gas: state of the art 2 under the auspices of CATSA in Cape Town, South Africa. The Convention was dedicated to the Professors Hans Schulz (Karlsruhe Institute of Technology, Germany) and Mark Dry (SASOL/UCT) for their outstanding contributions in the field of the Fischer-Tropsch synthesis. Four plenary (Dr Cathy Dwyer – SASOL, South Africa; Prof Hans Niemantsverdriet – Syngaschem BV, The Netherlands; Prof Walter Leitner – RWTH Aachen, Germany; Prof Philippe Sautet – University of Lyon, France), six keynote and 35 oral presentations over three days constituted the scientific programme of which elected contributions were invited to contribute to a Special Edition of the Elsevier Journal Catalysis Today which is expected to be published early 2016. The CATSA Bulletin asked the chair of the Convention Prof Manie Vosloo (NWU) how he felt about the meeting in retrospective.

CB: After 2012 this year's SynGas Convention was already the second international conference hosted by c*change in Cape Town, South Africa. What initiated the organisation of such a meeting?

MV: One of the important expectations of a DST-NRF Centre of Excellence is to disseminate research results through hosting conferences in their field. Because syngas plays such a vital role in the research of c*change and due to the scarcity of regular international conferences it was decided to use syngas as central theme varying the specific scope of each conference.

CB: The 2012 meeting was heavily focused on the generation of synthesis gas and its conversion via the Fischer-Tropsch synthesis, did the current meeting have a different scope?

MV: Yes, the scope at this conference was aimed more towards the downstream processes, i.e. transformation of olefins and paraffins to higher value products.

CB: Who is the target delegate that you hoped to attract to the Convention and were you successful?

MV: We hoped to attract a balanced mix of industrial vs academic, chemical engineers vs chemists active in syngas related downstream processes. Although our number of delegates was similar to the previous conference we had a lower participation of industrial researchers, especially local researchers. We also did not receive the expected number of presentations on downstream processes; in the end an equal number of syngas presentations were received.

CB: How was the Convention received, both nationally and internationally and what would you say are the characteristics of your meeting setting it apart from other international meetings?

MV: Based on feedback from individual delegates the conference was generally well received. The fact that our aim is to include all research on syngas and related chemistries sets it apart other international meetings.

CB: 2012, 2015 ... 2018? Can we look forward to a continuation of this format in the years to come?

MV: I believe there is sufficient interest to continue with this format and we plan to organize a 2018 event.



Professors Mark Dry (left) and Hans Schulz (right) rewarded for their outstanding contributions in the field of the Fischer-Tropsch synthesis.



Anna Petersen (PhD student at UCT) receiving her best poster award from Professor Philippe Sautet.

The 2nd c*change Autumn School 2014

Three days before the second SynGas convention c*change organized an autumn school at the Zevenwacht Wine Estate in the Western Cape with the topic "Bio, Homo, Hetero – Is there a difference?". The programme was convened by Prof Eric van Steen (UCT) and approached all three types of catalysis on the basis of industrial application, design and characterization, modelling as well as testing and kinetics. Speakers included delegates from SASOL, the invited plenary speakers from the SynGas Convention as well as local experts in the various fields from the wider c*change programmes.

Although primarily designed for post graduate students from South Africa, students and staff from the Netherlands, France, Sweden and the USA attended the school and contributed to its success.



Student travel grants 2014/2015

The Catalysis Society of South Africa offers every year a number of travel grants to students based at a South African institution to support attendance of local or international conferences. The grants are awarded based on a competitive application reviewed by the Committee (for more information see <http://www.catsa.org.za/awards/student-travel-awards>). In 2014 two grants were awarded, to Sandeeran Govender (MSc, UKZN) and Colleen Jackson (MSc, UCT), and in 2015 four grants, to Bronwyn White (PhD, UCT), Rhiyaad Mohamed (PhD, UCT), Sifiso Mohotloane (MSc, WITS) and Ziyaad Mohammed (PhD, UKZN), were offered. As part of the award the students are requested to share their experience and gathered insights at the attended event with the Society.

The BIOTRANS 2015, attended by Bronwyn White, was held from the 26th to the 30th of June in Vienna, Austria. Over 50 orals and 450 poster presentations from academia, industry and government-funded research institutions focused on four main themes: enzyme engineering, systems engineering, the design of enzyme cascades, and chemo-bio-catalysis. A recurring point emphasised in the systems engineering talks was the need to choose, design, or optimise biocatalysts while keeping in mind their place in the overall process. Improving on nature was the shared goal of all speakers in the enzyme engineering sessions, which included talks on method development (including a ground-breaking method for cell-free mutagenesis) and in silico or field-based bioprospecting and metagenomics. The session on cascade reactions shifted the focus from optimising single enzymes to combining enzymes in parallel or sequential set-ups to perform multi-step processes in a single vessel.

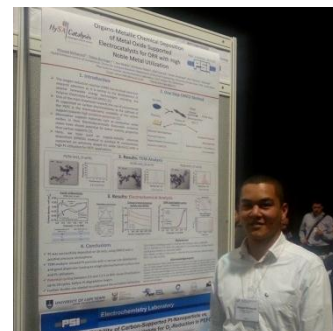
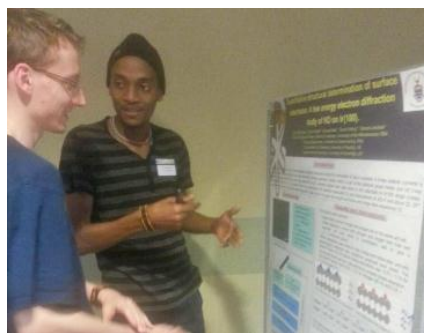
CATSA was represented at the International Symposium on Electrocatalysis (ECAT) 2014 in Whistler Canada, by Colleen Jackson, reporting on her work in an oral presentation. The three day conference included plenary presentations from Jens Nørskov and Nenad Markovic as well as 7 keynote and 63 oral presentations in two parallel sessions.

Outlook CATSA 2016

In 2016 the annual conference of the Catalysis Society of South Africa will be hosted and chaired by Professor Reinout Meijboom from the University of Johannesburg. As location for the meeting the Champagne Sports Resort in the Drakensberg has been identified (approximately 2 hours from Durban and 4 hours from Johannesburg by car). The resort offers various conference venues for 1350 down to 18 delegates, wellness and gym facilities and an 18 hole championship golf course (with 84 bunkers).

The CATSA committee and the chair of the 2016 conference have agreed to approach Prof Peter Wasserscheid from the Friedrich-Alexander University Erlangen-Nürnberg, Germany, as the Eminent Visitor.

Sifiso Mohotloane (below) presented a poster at the International Conference of The Structure of Surfaces (ICSOS) 2015 held from the 19th to the 26th of July at the University of Lodz in Poland. The meeting held in a workshop like atmosphere was focused on electron diffraction for quantitative surface structure determination. Several international invited speakers reported on the techniques, new trends and experimental set-ups.



The first edition of a novel biennial meeting by the Electrochemical Society on Electrochemical Energy Conversion & Storage with SOFC-XIV was held in Glasgow (July 26-31, 2015) and attended by Rhiyaad Mohamed (above). Consistent with this theme, the ECS Glasgow conference comprised of various informative short courses for students, a comprehensive technical program including three different symposia, and dynamic poster sessions throughout the duration of the conference.

Sandeeran Govender attended the 97th Canadian Chemistry Conference and Exhibition held in Vancouver from the 1st to the 5th of June 2014. 12 different divisions of chemistry were represented in oral and poster presentations (up to 40 parallel oral sessions) around the conference theme Chemistry from Sea to Sky.

CATSA is now a NPO

Since 26 February 2015 the Catalysis Society of South Africa is an officially registered non-profit organisation (NGO) in terms of the non-profit organisations act, 1997 (act 71 of 1997) with the registration number 149-462 NPO. This number must reflect on all official documents of the Society. This registration has become necessary as a result of the Public Finance Management Act, whereby public institutions such as universities but also science councils and parastatals such as PetroSA can only conduct financial transactions (sponsorship, delegate fees, etc.) with registered entities. As a result of the registration as NPO the Society is currently in the progress of registering with the South African Revenue Service (SARS). The Committee would specifically thank Mr Stephen Roberts for driving this initiative.



Prof Reinout Meijboom (UJ), the Chairman of the 2016 annual CATSA Conference.

New SARChI Chair in Nano-Materials for Catalysis

The South African Research Chair Initiative (SARChI) has confirmed the introduction of a new chair in Nano-Materials for Catalysis based at the University of Cape Town. The chair will be, in comparison to other research chairs in South Africa, directly incorporated into the structure of the DST-NRF Centre of Excellence in Catalysis c*change. The position was offered and accepted by Prof Praticia Kooyman from the Department of Chemical Engineering at the University of Delft. Prof Kooyman has received her PhD in Chemical Engineering from the University of Delft in 1993. She conducted two post-doctoral research projects first at Shell in Amsterdam on zeolite synthesis followed by a project at the University of Delft on high resolution TEM. In 2002 Prof Kooyman was appointed as assistant professor. In her time at Delft she became an expert in *in situ* transmission electron microscopy, studying phase, shape and size behaviour of nano-crystallites under reaction conditions. She has published over 150 articles in peer reviewed journals amongst others in the highly regarded Nature Materials and Nano Letters. We would like to welcome Prof Kooyman to South Africa and to our Society.



Sponsors of CATSA 2015



From the Editor

Dear member of the Catalysis Society of South Africa. Until 2010 the Society published at its annual conference a short publication in the form of a newsletter to celebrate together with its members successes in the last year. Contributions ranged from student reports of CATSA supported visits of local and international conferences, historic reviews on catalysis research in South Africa and developments within the structure of the Society as well as in the catalysis community of South Africa. In the last four years we did not prepare such a publication, mostly because of time constraints of the members. In 2015 the Society's Committee decided to re-introduce a newsletter as a platform to report on new developments and past year's events. You hold in your hand the first edition of The CATSA Bulletin. Contributions to future issues are welcome by all Society members and can span from the description of a new instrument/facility, highlighting a publication, introducing new professional staff to the Society, reports from conferences as well as general catalytic topics. We would like to specifically invite contributions describing scientific problems/unsolved questions from your working environment to be opened for discussion to a wider audience. All contributions should be sent in good time before the next CATSA conference to the media officer of the CATSA Committee Nico Fischer | nico.fischer@uct.ac.za.

Sudoku

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solution

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