MAIL AND GUARDIAN’S 200 YOUNG SOUTH AFRICANS - SCIENCE AND TECHNOLOGY CATEGORY

Ms Muthumuni Managa (Supervisor: Prof T Nyokong) was selected as one of the Mail and Guardian’s top 200 Young South Africans in Science and Technology category. This was announced at a gala dinner in Johannesburg on the 28th June 2018. Ms Managa’s PhD thesis examination is complete and she will graduate with PhD in April 2019.

Every year, the Mail & Guardian celebrates the most interesting and talented young South Africans under 35, who have shown themselves to be leaders.

Ms Managa said that it’s an honour and privilege to be recognised as a young South African making contribution to the knowledge of science.

For more information on the Mail & Guardian Top 200 Young South Africans, go to: http://ysa.mg.co.za/2018

NANOTECHNOLOGY WORKSHOP AWARDS THREE RHODES UNIVERSITY STUDENTS

The 8th Annual DST/Mintek Nanotechnology Innovation Centre (NIC) Workshop, which took place at Mintek in Randburg, Johannesburg from 26-28 March 2018, saw three Rhodes students winning awards.

Doctoral student Ms Refilwe Matshitse won the second prize for oral presentation, while Masters student Ms Nobuhle Ndebele won the first prize. Masters student Mr Aviwe Magadla received the second prize in the poster presentations. The three winning students are supervised/co-supervised by Rhodes’ Prof T Nyokong, Dr J Mack and Dr J Britton.

DST/Mintek NIC is a national facility, established in 2007 with the goals of undertaking and co-ordinating research activities. Collaborating with Rhodes University, University of Western Cape and the University of Johannesburg. DST/Mintek NIC undertakes and co-ordinates research activities with the universities in sensors, biolabels and water respectively.

Annual workshops are held for students from each of the three universities to present their current research work.
**FRANCE:**

Ms Lindokuhle Nene – MSc student (Supervisor – Prof T Nyokong) spent six months (1st February to 31st July 2018) at the Ecole Nationale Supérieure de Chimie de Paris in Paris, France under the co-supervision of Dr Fethi Bedioui. During her visit, she did research on new fluorine labelling strategy in microfluidic system.

![Ms Lindokuhle Nene](image1.png)

**CANADA:**

Ms Sivuyisiwe Mapukata, 1st Year PhD student (Supervisor – Prof T Nyokong) visited the University of Ottawa, Canada from 28th May to 24th August 2018. She was hosted by Prof J Scaiano, one of principal investigators of the tri-lateral agreement between Canada, South Africa and Kenya. Ms Mapukata did research on the development of phthalocyanines for pollution control.

![Ms Sivuyisiwe Mapukata](image2.png)

**KENYA:**

Prof T Nyokong and Prof Juan Scaiano from Canada visited the United States International University (USIU) in Nairobi, Kenya in February 2018. They were hosted by Dr Edith Amuhaya, also one of the principal investigators of the tri-lateral agreement between Canada, South Africa and Kenya. The project focuses on the use of nanotechnology to develop materials that can provide solutions for current environmental issues, such as water and soil decontamination, as well as the design of new systems to reduce the cost of current methods of purification.

![Prof T Nyokong, Dr E Amuyaha & Prof J Scaiano discussing the project with other researchers](image3.png)
Members of Rhodes University Council visited the CNI on the 23rd April 2018 for a tour of the facilities.

Prof T Nyokong took the council members on a tour around the centre. Students demonstrated to the council members how the different equipment work.

Prof T Nyokong, Dr S Mabizela & Rhodes University Council Members

The event which took place on the 24th July 2018 at the CSIR Convention Centre in Pretoria was to celebrate cooperation in science, technology and innovation between South Africa and China. The event comprised of a dialogue between eminent South African and Chinese scientists on how best to respond to the opportunities and challenges of the Fourth Industrial Revolution.

Prof T Nyokong was one of the five prominent South African scientists invited by the Minister of Science and Technology, Ms Kubayi-Ngubane to deliver a presentation during the event.
On the 18th April 2018, Prof T Nyokong received her third Honorary Doctorate (Doctor of Science Honoris Causa) from the University of KwaZulu-Natal (UKZN). The previous two honorary doctorates were awarded by Walter Sisulu University (WSU) and the University of South Africa (UNISA) in 2010.

CONGRATULATIONS TO STUDENTS FOR FIRST PUBLICATIONS AS FIRST AUTHORS

Ms Azole Sindelo – MSc student (Supervisor – Prof T Nyokong)
Ms Sindelo comes from Motherwell, a township in Port Elizabeth. She completed her BSc and Honours degrees in Chemistry at Rhodes University. She published her first academic paper in the second year of her MSc degree. Ms Sindelo is currently doing a PhD in Chemistry.

Publication:
A Sindelo, OL Osifeko and T Nyokong
Synthesis, photophysicochemical and photodynamic antimicrobial chemotherapy studies of indium pyridyl phthalocyanines: Charge versus bridging atom.
Inorganica Chimica Acta 476 (2018) 68-76

Mr Lekhetho Mpeta – PhD student (Supervisor – Prof T Nyokong)
Mr Mpeta comes from Lesotho. He holds a BSc Honours degree in Chemical Technology from University of Lesotho and a MSc degree from the University of Johannesburg. He joined Rhodes University in 2017 as a PhD student. He published an academic paper during his second year of PhD.

Publication:
LS Mpeta, G Fomo and T Nyokong
Click chemistry electrode modification using 4-ethynylbenzyl substituted cobalt phthalocyanine for applications in electrocatalysis.
Journal of Coordination Chemistry (in press)
Mr Aviwe Magadla – MSc student (Supervisor – Prof T Nyokong)

Mr Magadla is from Mthatha in the Eastern Cape. He obtained his BSc and Honours degrees in Chemistry at Walter Sisulu University in Mthatha. He joined Rhodes University in 2017 as an MSc student and published his first academic papers during his second year of MSc.

Publication:
A Magadla, DO Oluwole, J Britton and T Nyokong
Effect of nature of nanoparticles on the photophysicochemical properties of asymmetrically substituted Zn phthalocyanines
Inorganica Chimica Acta (2018), 482, 438-446

Mr Sithi Mgidlana – MSc student (Supervisor – Prof T Nyokong)

Mr Mgidlana comes from Qumbu village situated between Mthatha and Kokstad in the Eastern Cape where he also worked as a teacher before joining Rhodes University in 2017. He obtained his BSc and Honours degrees in Chemistry at Walter Sisulu University. He published his first academic paper during his second year of MSc study.

Publication:
S Mgidlana, DO Oluwole and T Nyokong,
Effects of the carboxylic acid substituents on the photophysical and nonlinear optical properties of asymmetrical Zn(II) phthalocyanines–quantum dots conjugates
Inorganic and Nano-Metal Chemistry (in press)

Ms Nthabeleng Molupe – MSc student (Supervisor: Dr J Mack)

Ms Molupe comes from Maputsoe, Lesotho. She obtained her BSc and Honours degrees in Chemistry at Rhodes University. She published her first academic paper during her second year of MSc study.

Publication:
N Molupe, B Babu, DO Oluwole, E Prinsloo, J Mack and T Nyokong
The investigation of in vitro dark cytotoxicity and photodynamic therapy effect of a 2,6-dibromo-3,5-distyryl BODIPY dye encapsulated in Pluronic F-127 micelles
Journal of Coordination Chemistry (in press)

Mr Ogunyemi O Oderinlo – PhD student (Supervisor: Dr S Khanye)

Mr Oderinlo comes from South-West Nigeria. He obtained his BSc degree in Pure and Applied Chemistry from Ladoke Akintola University of Technology, Nigeria and MSc degree in Organic Chemistry from University of Ibadan, Nigeria. Mr Oderinlo started his PhD at Rhodes University in 2015. Prior to coming to Rhodes, Mr Oderinlo worked as a lecturer at the Department of Chemical Sciences, Federal University Otuoke, Bayelsa, Nigeria. He published his first academic paper during his forth year of PhD study.

Publication:
OO Oderinlo, M Tukulula, M Isaacs, HC Hoppe, D Taylor, VI Smith and SD Khanye
New thiazolidine-2,4-dione derivatives combined with organometallic ferrocene: Synthesis, structure and antiparasitic activity
Applied Organometallic Chemistry (2018) 32:e4385
Electrospin2018 is the 5th International Conference on Electrospinning. The conference took place at the Stellenbosch Institute for Advanced Study (STIAS), Stellenbosch from the 16th to 18th January 2018.

Three students gave oral presentations at the conference:

- Ms Muthumuni Managa (PhD student, supervised by Prof T Nyokong)
- Mr Kelechi Lebechi (MSc student, supervised by Prof T Nyokong/Dr J Mack)
- Ms Sivuyisiwe Mapukata (PhD student, supervised by Prof T Nyokong)

Round Table discussion at the 20th L’Oréal-UNESCO for Women in Science International Awards Ceremony in Paris, France - 22nd March 2018. The highlight of the discussion was gender issues for women scientists.
The Atlantic Basin Conference on Chemistry took place at IBEROSTAR Cancún, Mexico from 23rd to 26th January 2018.

Chemical societies across North and South America, Europe, and Africa invited chemistry professionals to the inaugural Atlantic Basin Conference on Chemistry (ABCChem). This event offered an opportunity for top scientists from around the Atlantic Basin region to share ideas and collaborate on current multi-disciplinary chemistry topics.

Prof T Nyokong was one of the invited speakers. The following three students (all supervised by Prof T Nyokong) gave oral presentations at the conference:

Ms Sixolile Centane (PhD student)
Ms Sivuyisiwe Mapukata (PhD student)
Mr Gold Matlou (PhD student)

4TH INTERNATIONAL SYMPOSIUM ON ELECTROCHEMISTRY “PURE AND APPLIED ELECTROCHEMISTRY”

Mr Nnaemeka Nnaji (PhD student, supervised by Prof Nyokong) attended the above electrochemistry conference at the University of Johannesburg from 3rd to 5th April 2018 and gave an oral presentation on benzothiazole derived phthalonitrile and phthalocyanine inhibitors of aluminium corrosion.
The ICPP-10 Conference took place in Munich, Germany from 1st to 6th July 2018. The following Rhodes University staff/students presented at the conference:

Prof T Nyokong, Dr J Mack, Dr J Britton, Dr S Khene (staff); Dr D Oluwole, Dr KE Sekhosana (Post-doctoral Fellows); Mrs E Dube (PhD student, supervised by Prof T Nyokong), Ms M Managa (PhD student, supervised by Prof T Nyokong), Ms G Kubheka (PhD student, supervised by Dr J Mack) and Mr N Nwaji (PhD student, supervised by Prof T Nyokong). Three doctoral students (Managa, Dube and Nwaji) who did oral presentations had the following comments regarding the conference:

Ms M Managa
“Wow wow words cannot express the experience enough! To be honest, it was a scary and nerve-wrecking experience to stand in front of experts in the field of porphyrins and phthalocyanines. One thing I realized is that we are not lacking anything in our Laboratory (Lab S22), rather we on par or even ahead in our field of research. We represented South Africa and boldly I can also say Africa. We are more than capable as African young researchers. I learnt so much at this conference and also met many scientists. To be in the same space with so much sharing of knowledge was amazing.”

Mrs Edith Dube
“I was privileged to give an oral presentation at one of the biggest international conferences in the world. To present to an audience, some editors and reviewers of high impact journals was nerve-wrecking and exciting at the same time. The feedback was thrilling, boosted my confidence and changed my world-view. As a team from Lab S22, we represented Rhodes University, South Africa and Africa at large. I am grateful to Distinguished Professor T Nyokong for granting me this opportunity. I had an awesome time.”

Mr Nwaji Njemuwa
“A first glance at the cost per student from South Africa to attend the ICPP-10 Conference in Germany raised serious question for me - is the conference worth the cost? However, my conclusion after the conference is that the experience is far greater than the cost. The opportunity to speak with international experts from all over the world was interesting and even gratifying. The possibility of seeing different research giants in person whom, in most cases, I have been following their research work, the opportunity to ask them questions and ultimately discuss with them was an amazing experience. These experiences are just the least; the most important experience for me is a firsthand opportunity to see that I am being supervised by a scientist who is an icon among the scientific community all over the world. I can stand anywhere in the world and say, “I am supervised by Professor Tebello Nyokong”.

Ms M Managa, Mr N Nwaji & Mrs E Dube
(Oral Presentations)

Ms G Kubheka
(Poster Presentation)
THE 28TH ANNIVERSARY WORLD CONGRESS ON BIOSENSORS

Mr Omotayo Adeniyi (PhD student, supervised by Dr P Mashazi) and Dr Philani Mashazi attended the Biosensors2018 which was held at Regency Hyatt Hotel, Miami from the 12th to 15th June 2018. Two posters from Dr Mashazi’s laboratory F3 were presented and received several possible collaborations and networking opportunities. Thanks to NRF-TWAS programme for the travel funding for Mr Omotayo Adeniyi.

AFRICAN NETWORK FOR ELECTROANALYTICAL CHEMISTRY (ANEC)
AT THE ESEAC2018

The African Network was represented at the 17th International Conference on Electroanalysis (ESEAC 2018) held successfully at Rodos Palace, Rhodes Island, Greece from 3rd to 7th June 2018. The aim of the network is to strengthen South-South collaborations through ANEC. ANEC board members, Professors Emanuel Ngameni, Ignas Tonle gave poster presentations and Dr Philani Mashazi gave an oral presentation.

INTERNATIONAL VISITORS

Mr Krzysztof Jankowski and Mr Szymon Caluch from Poland are employees at the "Jacob of Paradies Academy in Gorzow Wielkopolski" and are currently completing their doctoral degrees.

The two doctoral students visited the CNI centre in April 2018 to make use of the facilities and do research on the results of physical parameters of nanoparticles of metals and semi-conductors.
The following students graduated in April 2018:

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<tr>
<th>Student</th>
<th>Supervisor</th>
<th>Degree/Thesis Title/Number of Publications</th>
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| Mr Ojodomo Achadu            | Prof T Nyokong | Doctor of Philosophy  
Thesis Title: Graphene quantum dots and their metallophthalocyanines nanoconjugates as novel photoluminescent nanosensors  
Number of Publications as first author: 11 plus 1 under review |
| Mr Charles O’Donoghue        | Prof T Nyokong | MSc in Chemistry (with distinction)  
Thesis Title: Characterisation of Surfaces Modified with Phthalocyanines Through Click Chemistry for Applications in Electrochemical Sensing  
Number of Publications as first author: 2 |
| Ms Jessica Harris            | Dr J Mack   | MSc in Chemistry (with distinction)  
Thesis Title: BODIPY dyes for singlet oxygen and optical limiting applications  
Number of Publications as first author: 1 |
| Mr Aviwe May                 | Dr J Mack   | MSc in Chemistry (with distinction)  
Thesis Title: Photosensitizer, pH sensing and optical limiting properties of BODIPY dyes  
Number of Publications as first author: 1 |
| Mr Zweli Hlatshwayo          | Dr J Mack   | MSc in Chemistry  
Thesis Title: Donor-acceptor effects on the optical limiting properties of BODIPY dyes |
This year the team building took place at Cherry Place & Red Cherry Adventures, Walmer, Port Elizabeth on the 5th May where students and staff members participated in various team building activities.