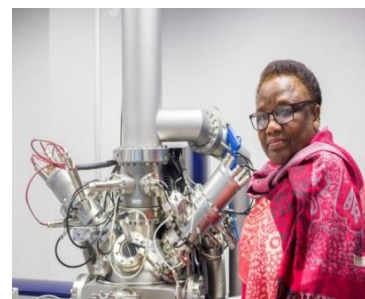


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Rhodes University/DST Centre for Nanotechnology Innovation (CNI) *Newsletter: Issue 1—June 2017*

Message from Prof Tebello Nyokong (Director RU/DST CNI)

The Rhodes University/Department of Science and Technology (DST) Centre for Nanotechnology Innovation (RU/DST CNI) was established by [Distinguished Professor Tebello Nyokong](#) using funds from the National Nanotechnology Equipment Programme (NNEP), South African Research Chairs Initiative (SARChI) and DST/Mintek Nanotechnology Innovation Centre (NIC)-Sensors. The Centre is hosted by the Chemistry Department at Rhodes University. The RU/DST CNI contains state-of-the-art equipment. This has resulted in the RU/DST CNI being undeniably, one of the most advanced facilities of its kind in a university environment. Apart from the use by different departments at Rhodes University, the centre serves many institutions around the country and internationally. This Newsletter is aimed at celebrating the achievements of the users of RU/DST CNI facility, especially the students. Contributions to the newsletter are welcomed from all users of the RU/DST CNI at Rhodes University and beyond.



Prof T Nyokong

RU/DST CNI Staff News

[Dr Jonathan Britton \(RU/DST CNI Manager\)](#) and [Mr Francis Chindeka \(Principal Technical Officer in the Chemistry Department\)](#) were invited to present papers at the World Textile Conference AUTEX2017 in Corfu, Greece from the 29th to 31st May 2017. Their trip was sponsored by Erasmus+ International Mobility through funds allocated to Prof Priniotakis. The program is funded by the European Union (EU) and is mainly for staff and student mobility between EU Higher Education Institutions (HEIs) and HEIs from non-EU countries. Mr Chindeka is also a part-time MSc Chemistry student.

[Dr John Mack \(Nanotechnology Specialist in the RU/DST CNI\)](#) presented a paper at the South Africa/Kenya joint workshop from the 25th to 26th May 2017 in Nairobi, Kenya. The meeting was sponsored by the National Research Foundations (NRF) of South Africa and Kenya. The workshop was attended by researchers selected for funding under the South Africa - Kenya Science and Technology cooperation.



Mr F Chindeka & Dr J Britton



Dr J Mack



Congratulations to **Ojodomo Achadu (PhD Chemistry student – Supervisor: Prof T Nyokong)**.

Mr Achadu's research was selected to be on the cover pages of two journals. (The cover of one of the journals is shown on the side and details of the journal article are shown below). He completed his MSc in Analytical Chemistry at the University of Lagos, Nigeria. He is also a Lecturer at Kwararafa University, Wukari, Taraba state, Nigeria. He is doing a PhD as part of staff development program from his university in Nigeria.

Publication: O. J. Achadu, T. Nyokong, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 174 (2017) 339-347



Mr O Achadu



Mr N Nwaji

Congratulations to **Njemuwa Nwaji (PhD Chemistry student - Supervisor: Prof T Nyokong)**.

Mr Nwaji's application for upgrade from MSc to PhD has been approved. He published three papers in international journals from his 1st year work as an MSc Chemistry student. Mr Nwaji completed his Honours BSc degree at the Federal University of Technology and he started his MSc at Rhodes University in 2016 which was upgraded to PhD this year. He is also an Assistant Lecturer at Federal University Ndufu-Alike Ikwo, Nigeria and is a staff development fellow for his university.



Mrs E Dube

Congratulations to **Edith Dube (PhD Chemistry student - Supervisor: Prof T Nyokong)**. Her first journal article as a PhD student has been published this year (details below). Mrs Dube completed her MSc in Chemistry at the University of Kwazulu-Natal. She is also a Lecturer at Midlands State University, Zimbabwe and is doing PhD as part of staff development program at her university. Mrs Dube is a mother of three children.

Publication: E. Dube, D. O. Oluwole, T. Nyokong, Journal of Luminescence 190 (2017) 353-363

Congratulations to **Benjamin Jones (Honours Chemistry student)**. His work as a third year BSc intern in Prof Nyokong's Laboratory was published in an international journal (details below). This is the first time that the work of an undergraduate student in the RU/DST CNI has been published. Benjamin did his BSc degree at Rhodes University, majoring in Chemistry and Information Systems.

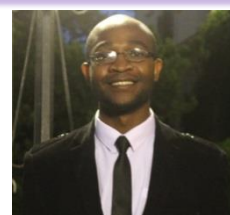
Publication: N. Nwaji, B. Jones, J. Mack, D. O. Oluwole, Journal of Photochemistry and Photobiology A: Chemistry 346 (2017) 46-59



Mr B Jones

Congratulations to **Nnamdi Nwahara (MSc Chemistry student – Supervisor: Prof T Nyokong)**. His first journal article as an MSc student has been published this year (details below). Mr Nwahara did his BSc degree at the University of Lesotho. He did his Honours degree in Chemistry at Rhodes University.

Publication: N. Nwahara, J. Britton, T. Nyokong, Journal of Coordination Chemistry 70(9) (2017) 1601-1616



Mr N Nwahara

News from Former (Prof Nyokong's) Students

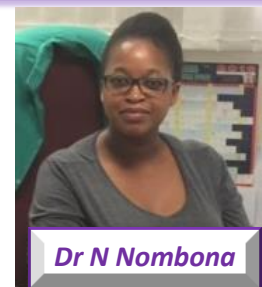
Dr Samson Khene (Senior Lecturer in the Chemistry Department, Rhodes University) (PhD, 2012). Dr Khene was selected amongst many applicants from South African universities to attend The 9th HOPE meeting with Nobel Laureates held in Tokyo Japan from the 26th February to 2nd March 2017. Only two people in the whole of South Africa were selected. Dr Khene joined 110 young scientists from the Asia-Pacific and African region. He had the opportunity to attend lectures, have discussions with Nobel laureates and present his own research work.

HOPE Meetings give opportunities for doctoral students and young researchers to engage in interdisciplinary discussions with Nobel laureates and other distinguished scientists.



Dr S Khene (right)

Congratulations to **Dr Nolwazi Nombona (Chemistry Lecturer at University of Kwazulu Natal) (PhD, 2012) and Dr Sarah D'Souza (Post-doctoral Researcher at University of Western Cape) (PhD, 2016).** They have both been invited to attend Lindau Nobel Laureate Meeting in Germany from the 25th to 30th June 2017. The annual Lindau meeting this year is dedicated to the field of chemistry. The meeting is a forum where about 30 Nobel Laureates meet the next generation of leading scientists, comprising close to 500 undergraduates, PhD candidates and post-doctoral researchers from all over the world. The meetings foster interaction among scientists of different generations, cultures and disciplines. More than 200 renowned science and research institutions worldwide identify the participants.



Dr N Nombona



Dr S D'Souza

Dr Philani Mashazi (Senior Lecturer in the Chemistry Department, Rhodes University) (PhD, 2012) was invited by the International Journal of Electrochemistry as a Guest Editor for a Special Issue titled "Recent Advances of nanoFabrication and nanoElectrochemistry". The special issue will be published in December 2017.

Dr Mashazi was also awarded Medical Research Council funds for his research.

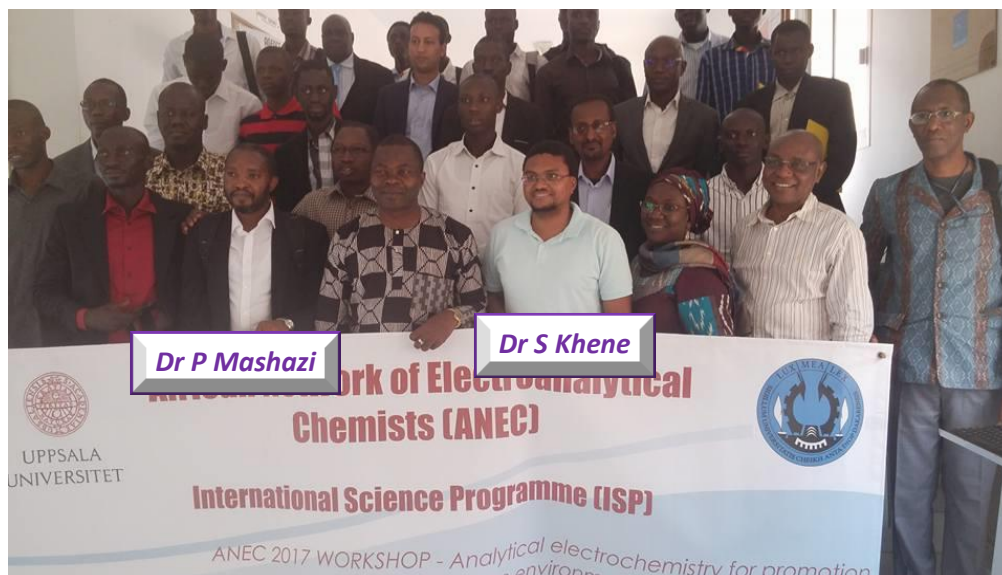


Dr P Mashazi

News from Users of the RU/DST CNI

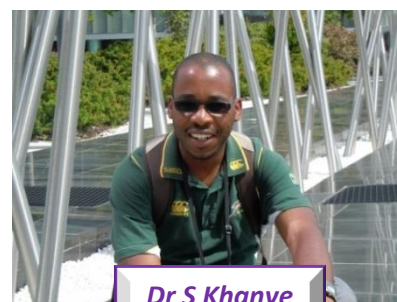
Dr Khene and Dr Mashazi attend African Network for Electroanalytical Chemistry (ANEC) Workshop in Senegal

The ANEC workshop took place in Senegal at the University Cheikh Anta Diop (UCAD) from the 10th to 14th April 2017. Drs Mashazi and Khene were invited to give plenary lectures. Researchers who represented at the workshop were from South Africa, Senegal, Cameroon, Burkina Faso and Ethiopia. Both Drs Mashazi and Khene were officially adopted into the Board of ANEC.



2017 Rhodes University Graduation

The 2017 Rhodes University Graduation Ceremony took place from the 20th to 22nd April. **Dr S.D. Khanye who is a lecturer in the Chemistry Department at Rhodes University.** Dr Khanye graduated five MSc students at a go. These were his first students as a main supervisor.



Five PhD and three MSc students graduated from the RU/DST CNI. The students who graduated with PhD (all supervised by Prof Nyokong) are seen in the photo with the Dean of Science (Prof Booth), Prof Nyokong and Dr Mack. Details of the PhD graduates are provided below the photo. The MSc students who graduated are Mr Watkins, Ms Khubheka (with distinction and now doing PhD), and Mr Stone (with distinction), Dr Mack was the main supervisor for the latter two.



**PhD Graduates (from left to right)
Drs Osifeko, Bankole, Shumba, Sekhosana and Oluwole**

7th Annual DST/Mintek Nanotechnology Innovation Centre (NIC) Workshop

This year the NIC Workshop took place at the Medical Research Council of South Africa (MRC) in Cape Town from the 25th to 26th January.

Delegates from RU/DST CNI included Distinguished Professor Tebello Nyokong and Dr Samson Khene (staff members); Ms Muthumuni Managa, Ms Refilwe Matshitshe and Mr Marcell Louzado (PhD students); Ms Azole Sindelo and Ms Sivuyisiwe Mapukata (MSc students); Mr Yogesh Maurya and Mr Yuto Kage (PhD and MSc exchange students from Japan).

Students from Rhodes University (RU/DST CNI), University of Johannesburg and University of Western Cape presented their research at the workshop. PhD student, Ms Muthumuni Managa (supervised by Prof Nyokong) won 2nd prize for her oral presentation entitled “Development of Nanoconjugates of Pluronic Silica Nanoparticles with Porphyrins for Photocatalysis”.



Research Week—In support of Emerging African Academics and Researchers

The Rhodes University Library held a Research Week from the 8th to 12th May 2017.

The aim was to strengthen research support and partnerships between the Research Office, researchers, postgraduate students and the Rhodes University library. Distinguished Professor Tebello Nyokong was the keynote speaker. Her address was titled “Internationalization of Research”, where her main message was “Making Africa a destination for quality research”.



*Ms D Martindale, Mr L Naicker (Library staff),
Prof T Nyokong and Dr P Clayton (DVC – Research and Development)*

Distinguished Visitors

Prof Georgios Priniotakis and Dr Marisa Sigala from the Piraeus University of Applied Sciences, Greece visited RU/DST CNI from the 18th and 25th February 2017. The aim of this visit was to strengthen relations between RU/DST CNI at Rhodes University and the Piraeus University of Applied Sciences, Greece. The collaboration is funded by the Erasmus+ International Mobility.

The two groups have collaborated before through the European Union International Research Staff Exchange Scheme FP7-PEOPLE-2009-IRSES, which also included Dr Westbroek from Belgium. The collaboration has resulted in a number of student exchanges where RU/CNI students visited Greece for research.



**Back: Dr J Britton and Mr F Chindeka;
Front: Profs G Priniotakis, T Nyokong and Dr M Sigala**

Dr Fethi Bedioui and Dr Anne Varenne from Ecole Nationale Supérieure de Chimie de Paris, Paris, France visited South Africa from the 6th to 18th February 2017. During their visit, they gave talks at Rhodes University, University of Fort Hare and University of Western Cape. The visit was funded by France/South Africa cooperation funding allocated to Prof Nyokong.

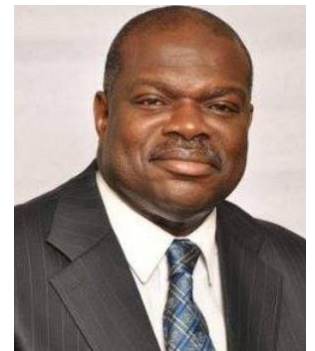
The collaboration between RU/DST CNI and Ecole Nationale Supérieure de Chimie de Paris has been going on since 2002. There have been close to 20 student exchanges, where students spend periods ranging from one to four months doing part of their research in Paris. A number of students from Paris have also visited RU/DST CNI for research. The program has been funded by the NRF in partnership with Centre National de la Recherche Scientifique (CNRS), Protea and the French Embassy



Prof T Nyokong, Dr A Varenne & Dr F Bedioui (middle) with University of Fort Hare staff

On Wednesday 17th May 2017, **Prof Ernest Aryeetey - Secretary-General of African Research Universities Alliance (ARUA)** visited Rhodes University and had a tour of the RU/DST CNI facilities.

ARUA is a network of universities from different countries and different historical backgrounds, but with a common vision. The network is about expanding and enhancing the quality of research conducted in Africa by African researchers. Rhodes University is one of the founding universities of ARUA.



Prof E Aryeetey

On the 8th June, [Dr Jean-Paul TOUTAIN, Attaché for Science and Technology, Ambassade de France/Embassy of France](#) visited Rhodes University and also had a tour of the RU/DST CNI Facilities. The visit was a result of the extensive collaboration between Ecole Nationale Supérieure De Chimie De Paris, France (Dr Bedioui) and RU/DST CNI at Rhodes University (Prof Nyokong). The fifteen year exchange program has resulted in thirteen PhD graduates.



Ms N Molupe (MSc student), Dr J-P Toutain and Prof T Nyokong

Exchange Students

[Yuto Kage and Yogesh Maurya \(exchange MSc and PhD chemistry students\) from Kyushu University, Fukuoka, Japan](#) visited RU/DST CNI from the 16th January to 5th February 2017 as part of a research collaboration between South Africa and Japan. The joint research project is funded by the NRF (South Africa) and Japan Society of Science (JSPS). Profs Nyokong (South Africa) and Kobayashi (Japan) are the principal investigators for the joint project. The exchange students from Japan also had the opportunity to attend the NIC Workshop in Cape Town as mentioned above.

So far there have been 25 student exchanges between RU/DST CNI, Tohoku, Shinshu and Kyushu Universities (Japan). Every year at least three RU/DST CNI students visit Japan and one emerging researcher from other institutions in South Africa visit Japan.



Mr Yuto Kage

Mr Yogesh Maurya

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