

## **LAUNCH OF THE FIRST NEWSLETTER, 19 JUNE 2017**



*Prof T Nyokong and Dr S Mabizela*

Rhodes University Vice Chancellor - Dr Sizwe Mabizela, visited the Rhodes/DST Centre for Nanotechnology Innovation (CNI) on the 19th June 2017 to launch the first CNI newsletter. Dr Mabizela congratulated PhD and Masters students who had published their first academic papers as first authors.

## **UNESCO-MERCK AFRICA RESEARCH SUMMIT (28-29 NOV 2017, MAURITIUS)**

Prof Tebello Nyokong gave a talk on the need for research co-operation within Africa. Prof Nyokong urged Ministers of Science and Technology from Africa who were present to be more involved in research in their respective countries. The aim of the summit was to promote research by women and the youth in the African continent. The summit was attended by 30 African Ministers and about 200 researchers.



*Prof Nyokong with President of the Republic of Mauritius, Her Excellency Dr Ameenah Gurib-Fakim (centre) and Dr Ahmed Hamdy, Executive Director, African Union Scientific, Technical and Research Commission*

## POSTGRADUATE STUDENTS FUNCTION

On the 21<sup>st</sup> November 2017 the University had a function to congratulate postgraduate students who published journals and received awards this year.



*Dr S Khene, Prof T Nyokong, Dr J Mack and Dr S Mabizela with postgraduate students*

## CONGRATULATIONS TO STUDENTS FOR FIRST PUBLICATIONS AS FIRST AUTHORS



*Ms S Mapukata*

### **Ms Sivuyisiwe Mapukata – MSc student (Supervisor – Prof T Nyokong)**

Ms Mapukata grew up in Cape Town. She did her BSc in Physical Sciences at the University of Johannesburg (UJ) where she received a top Achievers' Award in her final year of undergraduate studies. She went on to complete her BSc Honours in Chemistry in 2015 at the same institution. She transferred to Rhodes University in 2016. She published an academic paper during her second year of MSc degree. She has been accepted for PhD in 2018.

#### **Publication:**

**S Mapukata**, F Chindeka, KE Sekhosana and T Nyokong

Laser induced photodegradation of Orange G using phthalocyanine – cobalt ferrite magnetic nanoparticle conjugates electrospun in polystyrene nanofibers. Molecular Catalysis **Editor's choice paper**, 439 (2017) 211-223



*Ms S Peteni*

### **Ms Siwaphiwe Peteni – MSc student**

**(Supervisor – Prof T Nyokong, Co-supervisor: Dr J Britton)**

Ms Peteni is from a small town called Tsomo, situated between Butterworth and Cofimvaba. She completed her BSc degree at the University of Fort Hare where she majored in Biochemistry and Chemistry. She completed her Honours degree in Chemistry at the same university. She then moved to Rhodes University for her MSc degree in 2016. She published the academic paper during her second year MSc degree.

#### **Publication:**

**S Peteni**, KE Sekhosana, J Britton and T Nyokong

Effects of charge on the photophysicochemical properties of zinc phthalocyanine derivatives doped onto silica nanoparticles Polyhedron 138 (2017) 37-45

**The paper was accepted without revision, which is EXTREMELY rare.**



**Ms S Centane**

**Ms Sixolile Centane – MSc student (Supervisor – Prof T Nyokong)**

Ms Centane grew up in Cape Town and later moved to the Eastern Cape. She completed her BSc degree at the University of Cape Town (UCT) in 2014. She joined Rhodes University for BSc Honours degree in Chemistry, which she completed in 2015. She published the academic paper in the second year of her MSc degree. She has been accepted for PhD in 2018.

**Publication:**

**S Centane**, OJ Achadu and T Nyokong

Effects of substituents on the electrocatalytic activity of cobalt phthalocyanines when conjugated to graphene quantum dots  
Electroanalysis 29 (2017) 2470–2482



**Mr K Lebechi**

**Mr Kelechi Lebechi – MSc student (Supervisor – Prof T Nyokong)**

Mr Lebechi previously studied in Nigeria before he joined Rhodes University in 2013. He did BSc in Chemistry and Microbiology, and Honours degree in Chemistry. He published the academic paper during his first year of MSc.

**Publication:**

**AK Lebechi**, T Nyokong and J Mack

BODIPY dye embedded electrospun polystyrene nanofibers for the photocatalytic degradation of Orange G in industrial wastewaters  
Macromolecules 50(4-5) (2017) 460-466



**Mr A May**

**Mr Aviwe May – MSc student (Supervisor – Dr J Mack)**

Mr May is from King William's Town. He did a BSc degree majoring in Chemistry and Microbiology and Honours degree in Chemistry at Rhodes University. He published the academic paper in the second year of his MSc degree. Mr May is currently doing a PhD in Chemistry.

**Publication:**

**A May**, J Stone, BP Ngoy, J Mack, T Nyokong, M Kimura and N Kobayashi,  
Photophysical and optical limiting properties of a novel distyryl-BODIPY with fused crown ether moieties  
Journal of Porphyrins and Phthalocyanines 21 (2017) 832-843



**Mr G Matlou**

**Mr Gold Matlou – PhD student**

**(Supervisor – Prof T Nyokong, Co-supervisor: Dr J Britton)**

Mr Matlou comes from Lephalale in Limpopo. He holds a BSc degree from the University of Limpopo and a MSc Degree in Nanoscience from the University of Johannesburg. He joined Rhodes University in 2016 as a PhD student and is currently in his 3rd year of study. He published two academic papers during his second year as a PhD student. The first one is shown below.

**Publication:**

**GG Matlou**, N Kobayashi, M Kimura and T Nyokong

Synthesis and photophysical studies of asymmetric zinc phthalocyanine-magnetic nanoparticle conjugates  
New Journal of Chemistry 41(20) (2017) 12309-12318





*Ms G Kubheka*

**Ms Gugu Kubheka – PhD student**

**(Supervisor – Dr J Mack, Co-supervisor: Prof T Nyokong)**

Ms Kubheka grew up in Bergville. She completed her BSc degree at Rhodes University in 2012, majoring in Chemistry, Geology and Mathematics. She also did her Honours degree and MSc degree (with distinction) at Rhodes University. She is currently in her final year as a PhD student. She published two academic papers in 2017. Details of one of the papers are provided below.

**Publication:**

**G Kubheka**, O Achadu, J. Mack and T Nyokong

Optical limiting properties of 3,5-diphenyldibenzo-azaBODIPY at 532 nm  
New Journal of Chemistry 41(20) (2017) 12319-12325



*Mr M Louzada*

**Mr Marcel Louzada – PhD student**

**(Supervisor – Dr S Khene)**

Mr Louzada comes from Port Alfred in the Eastern Cape. He completed his BSc, Honours and MSc degree at Rhodes University. He is currently a second year PhD student. Mr Louzada is driven by his love of lasers, highly corrosive acids, pungent thiols and excess moles of caffeine. He published the academic paper as a first year PhD student.

**Publication:**

**M Louzada**, J Britton, T Nyokong and S Khene

Solvent effect on the third-order nonlinear optical properties of  $\alpha$ - and  $\beta$ -tertbutyl phenoxy-substituted tin(IV) chloride phthalocyanines  
Journal of Physical Chemistry A 212 (2017) 7165-7175



*Ms R Matshitse*

**Ms Refilwe Matshitse – PhD student**

**(Supervisor – Prof T Nyokong, Co-supervisor: Dr J Britton)**

Ms Matshitse comes from Johannesburg. She completed a BSc from North West University and MSc degree at the University of Witwatersrand. She started her PhD degree in 2016. She published the academic paper in 2017 during her second year of PhD.

**Publication:**

**R Matshitse**, KE Sekhosana, OJ Achadu and T Nyokong

Characterization and physicochemical studies of the conjugates of graphene quantum dots with differently charged zinc phthalocyanines  
Journal Coordination Chemistry 70(19) (2017) 3308-3324

## AWARDS

### ***South African Chemical Institute (SACI) Seminars***



***Ms S Mapukata***

#### ***Congratulations to Ms Sivuyisiwe Mapukata and Ms Nthabeleng Mopule***

The Annual SACI Regional Seminars were held at Rhodes University on 20th October 2017. This annual event brings together students from Rhodes University, Nelson Mandela University, University of Fort Hare and Walter Sisulu University where students present and share their research.

***Ms Sivuyisiwe Mapukata*** – MSc Student (Prof T Nyokong - supervisor) received first prize for her oral presentation “Laser induced photodegradation of Orange G using phthalocyanine-cobalt ferrite conjugates in nanofibers”.

***Ms Nthabeleng Mopule*** received an award for best Honours student in 2016. She is currently an MSc student supervised by Dr J Mack and co-supervised by Prof T Nyokong.



***Ms N Molupe and Prof T Nyokong***

### ***Council for Scientific and Industrial Research (CSIR) – National Laser Centre Rental Pool Programme Awards***



***Prof T Nyokong with students and staff***

At an awards ceremony held in Johannesburg on the 14<sup>th</sup> November 2017, the Council for Scientific and Industrial Research (CSIR) – National Laser Centre Rental Pool Programme presented the following awards to Prof Nyokong based on student training on lasers supplied through the programme:

1. An award for the number of Doctoral students that graduated in 2016/2017 and
2. Number of students trained in 2016/2017

### ***Black Science, Technology and Engineering Professionals (BSTEP)***



***Dr N Nombona***

On the 30<sup>th</sup> November BSTEP identified Prof Nyokong as a legend and honoured her in its first ever Black Science, Engineering and Technology (SET) excellence award ceremony. The award ceremony took place at the CSIR International Convention Centre in Pretoria. Prof Nyokong was unable to attend the ceremony to receive the award. However, Prof Nyokong was represented by two former PhD students, Dr Nolwazi Nombona and Dr Vongani Chauke (both PhD in 2012).



***Dr V Chauke***

## INTERNATIONAL VISITS

### ***Romania***

**Dr John Mack (Nanotechnology Specialist) and Ms Reitumetse Nkhahle (MSc student, Supervisor: Prof. T. Nyokong)** visited the Institutul National de Cercetare-Dezvoltare pentru Chimie si Petrochimie "ICECHIM" in Bucharest, Romania in October 2017.

The above visit forms part of the research collaboration between South Africa and Romania with Prof Tebello Nyokong and Prof Rodica-Mariana Ion as the principal investigators. This joint research project entitled "A Method Based on Nanomaterials for Conservation of Paper and Wood Artifacts" is funded by the NRF (National Research Foundation), South Africa and the Executive Agency for Higher Education, Research, Development and Innovation Funding, Bucharest, Romania.



***Prof R-M Ion, Ms R Nkhahle and Dr J Mack***

### ***Japan***



***Prof N Kobayashi, Ms L Nene,  
Ms A Sindelo and Ms R Matshitse with  
Shinshu University students***

Three of Prof Nyokong's students visited Japan for two months - September and October 2017- to do research at the Shinshu University in Ueda. **Ms Refilwe Matshitshe (PhD student), Ms Azole Sindelo (MSc student) and Ms Lindokuhle Nene (MSc student) – all supervised by Prof T Nyokong.**

Their visit forms part of the research collaboration between South Africa and Japan with Prof Nyokong and Prof Kobayashi as the principal investigators.

This joint research entitled "Development of third generation photosensitizers for photodynamic therapy" is funded by the National Research Foundation (NRF) South Africa and Japan Society for the Promotion of Science (JSPS) Japan.

PhD student, Ms Matshitse commented "I am grateful for the international exposure and platform of being in another laboratory which provided the experience of a different work ethic and culture. It was an interesting experience. Truly amazing and I will definitely cherish it for the rest of my life."



## NEWS AND VISITS FROM PROF NYOKONG'S FORMER STUDENTS

### ***Africa Science Leadership Programme (ASLP) 2017 (Dr Samsom Khene – PhD 2012)***



*Dr S Khene*

[Dr Samsom Khene](#) was selected as fellow of the African Science Leadership Programme (ASLP) initiative of the University of Pretoria and Global Young Academy, with the support of the Robert Bosch Stiftung. The programme received a large number of strong applicants from across the continent. Following two rounds of assessment by an international panel and the ASLP management team, Dr Khene's application was determined to have stood out. He attended the ASLP Workshop in Pretoria from 22<sup>nd</sup> – 27<sup>th</sup> March 2017.

### ***The Royal Society International Exchange Scheme – Standard Programme Award (Dr Kayode Sanusi – PhD 2015)***

[Dr Kayode Sanusi](#), Lecturer in the Department of Chemistry, Obafemi Awolowo University, Ile-Ife, Nigeria was recently awarded the Royal Society International (RSC) Exchanges Scheme-Standard Programme award. The award supports collaborations on a single project involving United Kingdom-based scientist and an overseas-based scientist, and its worth 12,000 British pounds.



*Dr K Sanusi*

### ***Emerging Old Rhodian Award 2017 (Dr Prudence Ogunlade – PhD 2007)***



*Dr P Ogunlade*

[Dr Prudence Ogunlade](#) is an Executive Manager in the Office of the Chief Operations Officer at Transnet Freight Rail. She holds a PhD in Chemistry from Rhodes University obtained in 2007, has studied Programme in Business Management at UNISA and is currently busy with her studies towards a MBA degree.

The University honours Old Rhodians who through their individual actions and achievements have enhanced the reputation of the University. The Award is specifically intended to acknowledge Old Rhodians as role models and in essence is the greater family of Rhodes rewarding one of their own.

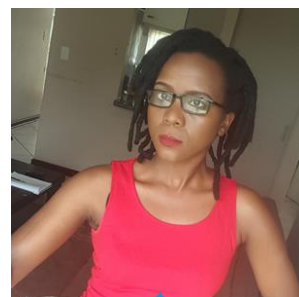
Comment: "I am humbled and honoured to be a recipient of this prestigious award. My heartfelt appreciation to the team that nominated me. They saw value in what I did, they saw value in what I do and that is inspiration enough for what I'm about to do."

***Visits from Former Students  
(Dr Megan Coates – PhD 2013 and Dr Phindile Khoza – PhD 2015)***



***Dr M Coates***

[Dr Megan Coates and Dr Phindile Khoza](#) visited the CNI in July 2017. Dr Coates is currently employed at The Stellenbosch Nanofiber Company as a Senior Scientist and Dr Khoza is a Lecturer at the University of Kwazulu-Natal. They both visited Centre's facilities and also encouraged current students to complete their studies up to doctoral level.



***Dr P Khoza***

**NEW RESEARCH PROJECTS**

***IDRC and the National Research Foundation announce winning projects under new South Africa-Canada Research Chairs Initiative***



***Dr J Scaiano***

On 4 July 2017 NAIROBI – Jean Lebel, President of Canada's International Development Research Centre (IDRC), and Dr. Molapo Qhobela, CEO of South Africa's National Research Foundation (NRF), announced the winning projects under the new South Africa–Canada Research Chairs Initiative. The new South Africa–Canada Research Chairs Initiative is made up of the South Africa–Canada Research Chairs Trilateral Partnership Initiative and the South Africa–Canada Research Chairs Mobility Initiative. Funded jointly by IDRC and the NRF, this initiative seeks to invest in the development of research in sub-Saharan Africa through the establishment of tri-lateral partnerships involving researchers from Canada, South Africa, and another sub-Saharan African country (Kenya in this case). The project will be for five years.

The collaboration is between Prof Tebello Nyokong (Rhodes University), Prof Juan Scaiano (University of Ottawa), and Dr Edith Amuhaya (United States International University). 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.



***Dr E Amuhaya***



## MEDIA/INTERVIEWS

### *Beautiful News*



*Prof T Nyokong with female students in the laboratory*

In June 2017 “Beautiful News” released an article and video on Prof Nyokong and her students. Follow link below for further details:

<https://www.beautifulnews.co.za/stories/tebello-nyokong>

## NEWS FROM YOUNG RESEARCHERS ASSOCIATED WITH THE CNI

[Dr Siphokazi Magadla](#) has been identified as a Next Generation Social Sciences in Africa Fellow. Her ground breaking work focuses on gender and post-conflict political life in South Africa. Dr Magadla is a Senior Lecturer at Rhodes University and is also involved in the writing of Prof Nyokong’s biography.



*Dr S Magadla*

## **DISTINGUISHED VISITORS**

### ***Visit by Singapore High Commissioner – His Excellency Mr Chua Thai-Keong***



His Excellency Mr CHUA Thai-Keong, Singapore High Commissioner and Mr HONG Bing Quan, First Secretary (Admin and Consular) visited Rhodes University on the 3<sup>rd</sup> July 2017 for a meeting with Dr Clayton (Deputy Vice-Chancellor, Research) followed by a tour of the Centre's facilities.

*Prof Tebello Nyokong, His Excellency, Mr Chua Thai-Keong, Mr Hong Bing Quan and Ms Orla Quinlan (Director of the International Office at Rhodes University)*

### ***Visit by Prof Nagao Kobayashi and Prof Mutsumi Kimura Shinshu University – Ueda, Japan***



*Mrs Y Kobayashi,  
Prof T Nyokong and  
Prof N Kobayashi*

Prof Kobayashi and Prof Kimura (Professors in the Faculty of Textile Science and Technology, Shinshu University) visited South African from 29<sup>th</sup> Oct to 7<sup>th</sup> Nov 2017. Their visit also forms part of the research collaboration between South Africa and Japan as mentioned before on page 6.

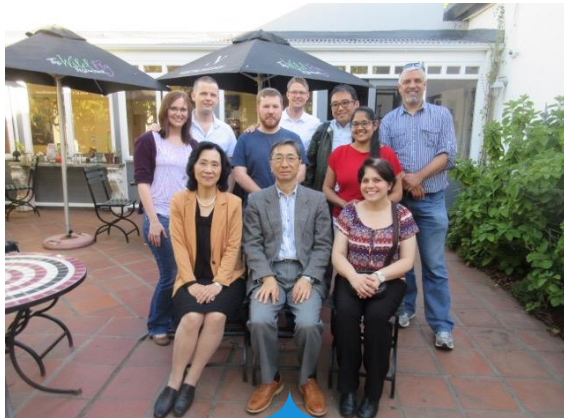
During their research visit they gave talks at the annual Wits MERG (Materials for Energy Research Group) Workshop held from the 1<sup>st</sup> to 2<sup>nd</sup> November, Houghton, Johannesburg. They were hosted by Prof K Ozoemena (one of Prof Nyokong's former students, who is now a professor at Wits). They also gave talks at Rhodes University, University of Pretoria and Cape Peninsula University of Technology and were hosted by former doctoral students of Prof Nyokong.



*Mrs Y Kobayashi,  
Prof T Nyokong and  
Prof M Kimura*

***Photos: Japanese Visitors with Prof Nyokong's Former Students***

**CAPE TOWN**



*Front: Mrs Y Kobayashi, Prof N Kobayashi and Dr E Antunes (former NIC Manager at Rhodes)  
Middle: Dr M Coates (PhD 2013), Mr J Stone (MSc 2016) & Dr S D'Souza (PhD 2016)  
Back: Mr J Strydom, Mr Z Watkins (MSc 2017), Prof M Kimura and Dr D Beukes*

**CAPE TOWN**



*Prof M Kimura, Mrs Y Kobayashi, Dr T Mthethwa (PhD 2015) and Prof N Kobayashi*

**PRETORIA**



*Dr N Nombona (PhD 2012), Mrs Y Kobayashi, Dr V Chauke (PhD 2012) and Prof M Kimura*

**PRETORIA**



*Prof M Kimura, Ms G Mbambisa (MSc 2009), Mrs Y Kobayashi, Dr N Nombona (PhD 2012) and Prof N Kobayashi*



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