# RHODES UNIVERSITY, MAKHANDA, SOUTH AFRICA

## STUDENT INFORMATION


**MR AVIWE MAGADLA (DOCTORAL STUDENT)**
**STUDENT NO: 17M8836**
**SUPERVISOR: DISTINGUISHED PROFESSOR TEBELLO NYOKONG**


**CONTACT DETAILS:**


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**EDUCATION DETAILS:**

PhD (Chemistry) currently - Rhodes University, , Makhanda, South Africa
MSc – with distinction (Chemistry) 2019 - Rhodes University, Makhanda, South Africa
BSc Honours (Chemistry) 2016 - Walter Sisulu, Mthatha, South Africa
BSc (Chemistry) 2015 – Walter Sisulu, Mthatha, South Africa

**RESEARCH TITLE/PROJECT:**

Synthesis of photodynamic antimicrobial chemotheraphy photosensitizers

**PUBLICATIONS:**

1. **Magadla, Aviwe**; Oluwole, David O.; Britton, Jonathan; Nyokong, Tebello
Effect of nature of nanoparticles on the photophysicochemical properties of asymmetrically substituted Zn phthalocyanines
**Inorganica Chimica Acta (2018), 482, 438-446**
DOI:10.1016/j.ica.2018.06.043
https://doi.org/10.1016/j.ica.2018.06.043

2. **Magadla, A.,** Oluwole, D.O., Managa, M. and Nyokong, T.
Physicochemical and antimicrobial photodynamic chemotherapy (against E. coli) by indium phthalocyanines in the presence of silver-iron bimetallic nanoparticles
**Polyhedron (2019), 162, 30-38**
DOI:10.1016/j.poly.2019.01.032
https://doi.org/10.1016/j.poly.2019.01.032

3. **Aviwe Magadla**, Tebello Nyokong
Enhanced photodynamic antimicrobial activity of surface modified SiNPs doped with zinc(II) phthalocyanines: The effect of antimicrobial ampicillin and extra charges from a sultone
**Photodiagnosis and Photodynamic Therapy (2020) 32, 101996 (1-11)**
DOI: 10.1016/j.pdpdt.2020.101996
https://doi.org/10.1016/j.pdpdt.2020.101996

4. Magadla, Aviwe; Babu, Balaji; Sen, Pinar; Nyokong, Tebello
The photophysicochemical properties and photodynamic therapy activity of Schiff base substituted phthalocyanines doped into silica nanoparticles and conjugated to folic acid
**Polyhedron (2021), 203, 115227**
DOI:10.1016/j.poly.2021.115227
https://doi.org/10.1016/j.poly.2021.115227

5. Aviwe Magadla, Balaji Babu, John Mack and Tebello Nyokong
Positively charged styryl pyridine substituted Zn(II) phthalocyanines for photodynamic therapy and photoantimicrobial chemotherapy: effect of the number of charges
**Dalton Transactions (2021), 50, 9129-9136**
DOI: 10.1039/D1DT01047F
https://pubs.rsc.org/en/content/articlehtml/2021/dt/d1dt01047f

6. Aviwe Magadla, Yolande Ikala Openda, Tebello Nyokong
The implications of ortho-, meta- and para- directors on the *in-vitro* photodynamic antimicrobial chemotherapy activity of cationic pyridyl-dihydrothiazole phthalocyanines
**Photodiagnosis and Photodynamic Therapy, 39 (2022) 103029 (1-8)**
DOI: 10.1016/j.pdpdt.2022.103029
https://doi.org/10.1016/j.pdpdt.2022.103029

7. Lindokuhle Cindy Nene, Aviwe Magadla and Tebello Nyokong
Enhanced mitochondria destruction on MCF-7 and HeLa cell lines *in vitro* using triphenyl-phosphonium-labelled phthalocyanines in ultrasound-assisted photodynamic therapy activity
**Journal of Photochemistry and Photobiology B: Biology, 235 (2022), 112553 (1-10)**
DOI: 10.1016/j.jphotobiol.2022.112553
https://doi.org/10.1016/j.jphotobiol.2022.112553

8. Aviwe Magadla, Yolande Ikala Openda, Lekhetho S. Mpeta, Tebello Nyokong
Evaluation of the antibacterial activity of gallic acid anchored phthalocyanine-doped silica nanoparticles towards *Escherichia coli* and *Staphylococcus aureus* biofilms and planktonic cells
**Photodiagnosis and Photodynamic Therapy 42 (2023) 103520 (1-11)**
DOI: 10.1016/j.pdpdt.2023.103520
https://doi.org/10.1016/j.pdpdt.2023.103520

9. Aviwe Magadla, Lekhetho S. Mpeta, Jonathan Britton, Tebello Nyokong
Photodynamic antimicrobial chemotherapy activities of phthalocyanine-antibiotic conjugates against bacterial biofilms and interactions with extracellular polymeric substances
**Photodiagnosis and Photodynamic Therapy 44 (2023) 103878 (1-11)**
DOI: 10.1016/j.pdpdt.2023.103878
https://doi.org/10.1016/j.pdpdt.2023.103878

**CONFERENCES/WORKSHOPS:**

**DST/Mintek NIC – 10th Annual Workshop, Mintek, Johannesburg, 26-28 March 2018**
Poster Presentation:
**Aviwe Magadla**, Jonathan Britton, David Oluwole and Prof T Nyokong
Development of phthalocyanine-metallic nanoparticles conjugates for possible application in water purification and as antimicrobial agents (won second prize for poster presentation)

**21st Mendeleev Congress on General and Applied Chemistry, Multifunctional complex "Gornyi", Park Inn by Radisson Pribaltiyskaya Hotel and in Saint Petersburg State University**
**9-13 September 2019, Saint Petersburg, Russia**
Poster Presentation:
Aviwe Magadla, David O. Oluwole, Muthumuni Managa and Tebello Nyokong
Photodynamic antimicrobial chemotherapy activity (against E. coli) of Zwitterionic indium phthalocyanines when conjugated to Ag based nanoparticles

**12th International Conference on Porphyrins & Phthalocyanines (ICPP-12)**
Madrid, Spain 10-15 July 2022
Poster Presentation:
Aviwe Magadla, Balaji Babu, John Mack and Tebello Nyokong
Positively charged styryl pyridine substituted Zn (II) Phthalocyanines for Photoantimicrobial Chemotherapy: Effect of the number of charges

**AWARDS:**

Won second prize for poster presentation at the DST/Mintek NIC – 10th Annual Workshop, Mintek, Johannesburg, 26-28 March 2018.