



RHODES UNIVERSITY, MAKHANDA, SOUTH AFRICA

STUDENT INFORMATION



MS BRIDGED MAGAELA (DOCTORAL STUDENT)

STUDENT NO: 20M8676

SUPERVISOR: DISTINGUISHED PROFESSOR TEBELLO NYOKONG

CONTACT DETAILS:

Rhodes University
Institute for Nanotechnology Innovation
P O Box 94
Makhanda (Grahamstown) 6140, South Africa
Email: bridgednb@gmail.com

EDUCATION DETAILS:

PhD (Chemistry) current – Rhodes University, Makhanda, South Africa
MSc (Chemistry) 2023 – Rhodes University, Makhanda, South Africa
BSc Honours (Chemistry) 2020 – Rhodes University, Makhanda, South Africa
BSc (Applied Chemistry and Chemistry) 2019 – University of Venda

RESEARCH TITLE/PROJECT:

Synthesis of metalloporphyrins conjugated to cancer selective graphene quantum dots for photodynamic therapy.

PUBLICATIONS:

1. Bridged Magaela, Refilwe Matshitse, Balaji Babu, Muthumuni Managa, Earl Prinsloo and Tebello Nyokong

Sn(IV) porphyrin-biotin decorated nitrogen doped graphene quantum dots nanohybrids for photodynamic therapy

Polyhedron, 213 (2022) 115624 (1-10)

<https://doi.org/10.1016/j.poly.2021.115624>

2. Magaela, N Bridged; Matshitse, Refilwe; Nyokong, Tebello

The effect of charge on Zn tetra morpholine porphyrin conjugated to folic acid-nitrogen doped graphene quantum dots for photodynamic therapy studies

Photodiagnosis and Photodynamic Therapy (2022), 39, 102898 (1-15)

<https://doi.org/10.1016/j.pdpdt.2022.102898>

3. N. Bridged Magaela, Lekgowa C. Makola, Muthumuni Managa and Tebello Nyokong

Photodynamic activity of novel cationic porphyrins conjugated to graphene quantum dots against *Staphylococcus aureus*

Journal of Porphyrins and Phthalocyanines 26 (2022) 392-402

<https://doi.org/10.1142/S1088424622500316>

4. MM Ledwaba, NB Magaela, KS Ndlovu, J Mack, T Nyokong, M Managa

Photophysical and *in vitro* photoinactivation of *Escherichia coli* using cationic 5,10,15,20-tetra(pyridin-3-yl) porphyrin and Zn(II) derivative conjugated to graphene quantum dots

Photodiagnosis and Photodynamic Therapy 40 (2022) 103127 (1-12)

<https://doi.org/10.1016/j.pdpdt.2022.103127>

5. Bridged N. Magaela, Knowledge S. Ndlovu, Charmaine S. Tshangana, Adolph A. Muleja,

Bhekie B. Mamba, Tebello Nyokong, Muthumuni Managa

Photodegradation of ibuprofen using 5-10-15-20-tetrakis(4-bromophenyl) porphyrin conjugated to graphene quantum dots

Optical Materials 134 (2022) 113147 (1-10)

<https://doi.org/10.1016/j.optmat.2022.113147>

6. Bridged Magaela, Refilwe Matshitse, Muthumuni Managa & Tebello Nyokong

The effect of asymmetry and conjugation of biotin decorated nitrogen doped graphene quantum dots on morpholine porphyrin for photodynamic therapy

Journal of Coordination Chemistry, 75:19-24, (2022) 2944-2961

<https://doi.org/10.1080/00958972.2022.2148103>

7. N. Bridged Magaela, Muthumuni Managa, Tebello Nyokong

The synthesis of 5,10,15,20-tetra pentafluorophenyl porphyrin loaded onto spermine modified carbon nanospheres for enhanced cancer selectivity in photodynamic therapy

Journal of Molecular Structure 1306 (2024) 137898 (1-10)

<https://doi.org/10.1016/j.molstruc.2024.137898>

8. N. Bridged Magaela, Mahlatse M. Ledwaba, Nonkululeko Malomane, John Mack, Tebello Nyokong and Muthumuni Managa

Photodynamic inactivation of *Staphylococcus aureus* and *Escherichia coli* with free-base and indium(III) 5,10,15,20-tetrakis(4-pyridyl) porphyrin adsorbed onto single-walled carbon nanotubes

Journal of Porphyrins and Phthalocyanines 28 (2024) 260–271

<https://doi.org/10.1142/S1088424624500202>

9. N. Bridged Magaela, Muthumuni Managa and Tebello Nyokong
Gold-silver bimetallic nanoparticles conjugated to asymmetric porphyrin for photodynamic therapy against triple negative breast cancer

Journal of Luminescence 280 (2025) 121065 (1-12)

<https://doi.org/10.1016/j.jlumin.2025.121065>

10. N.Bridged Magaela, Muthumuni Managa, Tebello Nyokong
Bismuth doped carbon nanospheres conjugated to boronated porphyrins for photodynamic therapy

Photodiagnosis and Photodynamic Therapy 53 (2025) 104567 (1-13)

<https://doi.org/10.1016/j.pdpdt.2025.104567>

CONFERENCES/WORKSHOPS:

DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop

South African Medical Research Council (MRC), 11-12 October 2023

Oral Presentation

N.Bridged Magaela, Muthumuni Managa, Tebello Nyokong

The synthesis of 5,10,15,20-tetra pentafluorophenyl porphyrin loaded onto spermine modified carbon nanospheres for enhanced cancer selectivity, in photodynamic therapy.

International Conference on Porphyrins and Phthalocyanines (ICPP-13)

Niagara Falls Convention Center Niagara Falls, Buffalo USA - 23-28 June 2024

Poster Presentation

N. Bridged Magaela, Muthumuni Managa, Tebello Nyokong

Photodynamic therapy of Sn-tetra pentafluorophenyl porphyrin loaded onto spermine modified carbon nanospheres for enhanced cancer selectivity