RHODES UNIVERSITY, GRAHAMSTOWN, SOUTH AFRICA

STUDENT INFORMATION

MR JAMES OYIM (DOCTORAL STUDENT)
STUDENT NO: 21O1734
SUPERVISOR: DISTINGUISHED PROFESSOR TEBELLO NYOKONG

CONTACT DETAILS:

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EDUCATION DETAILS:

PhD (Chemistry) currently - Rhodes University, Makhanda, South Africa
MSc (Chemistry) 2016 - University of Nairobi, Kenya
BSc (Chemistry) 2011 – Moi University, Kenya

RESEARCH TITLE/PROJECT:

Synthesis of meso-substituted metaloporphyrins for utilisation in water treatment

EMPLOYMENT HISTORY:

- RESEARCH ASSOCIATE | United States International University – Africa (January 2018 – December 2020)
- LABORATORY SERVICES HEAD – AgriQuest Limited (July 2017- December 2017)
- MEDICAL REPRESENTATIVE – Sun Pharma | Nairobi (Feb 2014 – June 2017)
- GRADUATE RESEARCH ASSISTANT | Computational Chemistry in Drug Design (Sept 2012 – Jan 2014): University of Nairobi (Chemistry Dept; In Partnership with Novartis Institute for Biomedical Research)
- MEDICAL REPRESENTATIVE – Sai Pharmaceutical Limited | Coast Region (Feb 2012 – Aug 2012)
- IN-PROCESS QUALITY CONTROLLER AND SUPERVISOR – Kam Pharmacy Limited (Aug 2011 to Jan 2012)
- CHEMIST ATTACHÉ – Kenya Pipeline Company | Pump Station (PS) 10 (May 2010 – July 2010)
- COMMUNITY INTERVIEWER – Kenya Medical Research Institute (KEMRI)/Wellcome Trust Research Programme | Siaya County (July-2006)

PUBLICATIONS:

1. Oyim, J., Omolo, C. A., & Amuhaya, E. K.
Photodynamic Antimicrobial Chemotherapy: Advancements in Porphyrin-Based Photosensitize Development.
Frontiers in Chemistry, 9 (2021)
https://doi.org/10.3389/fchem.2021.635344

2. Shabangu, S. M., Babu, B., Soy, R. C., Oyim, J., Amuhaya, E., & Nyokong, T.
Susceptibility of Staphylococcus aureus to porphyrin-silver nanoparticle mediated photodynamic antimicrobial chemotherapy.
Journal of Luminescence, 222, (2020) 117158.
https://doi.org/10.1016/j.jlumin.2020.117158

3. Soy, R. C., Babu, B., Oluwole, D. O., Nwaji, N., Oyim, J., Amuhaya, E., Prinsloo, E., Mack, J., & Nyokong, T.
Photophysicochemical properties and photodynamic therapy activity of chloroindium(III) tetraarylporphyrins and their gold nanoparticle conjugates.
Journal of Porphyrins and Phthalocyanines, 23(01n02) (2019) 34–45.
https://doi.org/10.1142/S1088424618501146

4. James Oyim, Edith Amuhaya, Refilwe Matshitse, John Mack and Tebello Nyokong
Integrated photocatalyst adsorbents based on porphyrin anchored to activated carbon granules for water treatment
Carbon Trends 8 (2022) 100191 (1-11)
DOI: 10.1016/j.cartre.2022.100191

https://doi.org/10.1016/j.cartre.2022.100191

5. James Oyim, Edith Amuhaya & Tebello Nyokong
Activated carbon-decorated polyacrylonitrile fibers and their porphyrin-immobilized composites for removal of methylene blue dye and Ciprofloxacin in water
Journal of Macromolecular Science, Part A: Pure And Applied Chemistry 60(3) (2023) 192–206
DOI: 10.1080/10601325.2023.2183868
https://www.tandfonline.com/doi/full/10.1080/10601325.2023.2183868

6. James Oyim, Refilwe Matshitse, Nonkululeko Malomane, Yolande Ikala Openda, Tebello Nyokong, and Muthumuni Managa
In vitro photoinactivation of *S. aureus* and *E. coli* using 5,10,15,20-tetrakis[4-(benzyloxy) phenyl] porphyrin and its metal derivatives conjugated to pristine graphene quantum dots
Journal of Porphyrins and Phthalocyanines 27 (2023) 634–644
DOI: 10.1142/S1088424623500529
https://doi.org/10.1142/S1088424623500529

7. James Oyim, Mbulelo Jokazi, John Mack, Edith Amuhaya and Tebello Nyokong
Indium porphyrin - colloidal activated carbon composites for photocatalytic activity against an organic pollutant and bacteria
Polyhedron 253 (2024) 116918 (1-12)
DOI: 10.1016/j.poly.2024.116918
https://doi.org/10.1016/j.poly.2024.116918

8. James Oyim, Aviwe Magadla, John Mack, Edith Amuhaya, Tebello Nyokong
Expanding the horizons of photodynamic therapy: Indium metalated pyridinyl-based *trans*-A_2B_2 porphyrin as novel anti-biofilm agents
Dyes and Pigments 232 (2025) 112448 (1-13)
DOI: 10.1016/j.dyepig.2024.112448
https://doi.org/10.1016/j.dyepig.2024.112448

9. Vuyokazi Nobatana, James Oyim, Nnamdi Nwahara, Earl Prinsloo, Tebello Nyokong
The potential of photodynamic therapy combined with hyperthermia using porphyrin-nanomaterial hybrids against the triple-negative breast cancer cell line
Polyhedron 267 (2025) 117341 (1-12)
https://doi.org/10.1016/j.poly.2024.117341

10. Vuyokazi Nobatana, James Oyim, Nnamdi Nwahara, Azole Sindelo, Tebello Nyokong
The photodynamic anti-cancer and anti-bacterial behaviour of meso-substituted trans-A_2B_2 porphyrin conjugated silica-gold nanoparticles
Inorganica Chimica Acta 579 (2025) 122584 (1-13)
DOI: 10.1016/j.ica.2025.122584
https://doi.org/10.1016/j.ica.2025.122584

WORKSHOPS AND CONFERENCE PRESENTATIONS:

- GC-MS- A hands-on approach: From Sample Preparation to mass Spectra Data Interpretation: Hosted by the Pan Africa Chemistry Network and Supported by GlaxoSmithKline at Kenyatta University, Nairobi Kenya, 14th -18th March 2016
- OpenLab Workshop for Sub-Saharan Africa Scientists "Introduction to Computational Chemistry and In-Silico Visualization": At the Department of Chemistry, University of Nairobi, Kenya, September 9th - 11th, 2015
- Chemical Technology for Industry and Innovation: Facilitated by the Kenya Chemical Society at Technical University of Kenya, Nairobi, 27th April 2013
- Chemical Safety, Security and Waste Management: Facilitated by the Kenya Chemical Society at Multimedia University of Kenya, Nairobi, 27th August 2013
- DSI/Mintek Nanotechnology Innovation Centre (NIC) Annual Workshop, South African Medical Research Council (MRC), 11-12 October 2023
  Oral Presentation
  James Oyim, Mbulelo Jokazi, John Mack, Tebello Nyokong
  Tuning Colloidal Activated Carbon with Porphyrins for Enhanced Photocatalytic Effect
  (3rd place – PhD Oral Presentation)