RHODES UNIVERSITY, GRAHAMSTOWN, SOUTH AFRICA

STAFF INFORMATION
Mrs. Joyce Sewry
Bsc(Hons) Rhodes, (Msc) Rhodes

About:

I am a senior lecturer in the Department as well as the Deputy Dean of Science. My role as Deputy Dean of Science is in the fields of Teaching and Learning and Community Engagement.

As a lecturer, I assist students in their Chemistry studies. I manage and lecture the Chemistry 1Remedial course and run support tutorials for first years who are struggling or who would like to improve their marks. In addition to teaching first years I also teach two modules at the Honours level: Chemometrics and a Service-learning module. For the S-L module, students are expected to present 'A Pollutant's Tale' and two hands-on experiments to grade 7 learners at two schools in and around Grahamstown.

My academic interests are in the field of Chemical Education, Community Engagement and Chemometrics.

A lot of my time is spent on Community Engagement: Khanya Maths and Science Club, workshops for Science teachers, workshops for school groups who visit the Department, Science Expo, Scifest workshops and the Rhodes University Maths Experience. Community Engagement

Awards:

- 2009: Finalist in Rotary Grahamstown Sunset's Citizen of the Year Awards
- 2009: Vice-Chancellor's Distinguished Community Engagement Award
- 2012: Chemical Education Medal for 2012 by the South African Chemical Institute (SACI)
- 2012: Rhodes University: 25 years Long Service Award
- 2013: Promotion from Lecturer to Senior Lecturer
- 2017: Vice-Chancellor's Distinguished Teaching Award

Current Research Interests:

Current research interests include the fields of: Chemistry education: The research focuses on the performance of students enrolled for the Chemistry 1R course versus students enrolled for the standard Chemistry 1 course as well as the problems associated with Science teaching at schools. Service – Learning: Focus is on implementing service-learning in the Chemistry Department Chemometrics NSC Mathematics and Physical Sciences examinations

Postgraduate Supervision:

MSc:

1. Abel, S."Implementation and Evaluation of a service-learning component in a Second Year Organic Chemistry course". Graduated April 2011 . Supervisor: Prof M Davies-Coleman
2. Kelly, K."Phenomenology: Preconceptions and Experiences of Non-Chemists using Milk Paint". Graduated April 2017. Co-supervisor: Dr K. Lobb

MEd

1. Van Heerden, L. "An investigation into the readability of the grade 10 Physical Science textbooks: A case study". Graduated April 2011; Supervisor: Dr K Ngcoza
2. Shaakumeni, SN. "An exploration of Natural Science teachers' experiences and perceptions of the National Standardized Achievement Tests: A case study". Graduated April 2013. Supervisor: Dr K Ngcoza
3. Kahenge, W. "An investigation of educators' and learners' perceptions and experiences on their participation in Science Fairs/Expos". (half-thesis) Graduated April 2014. Supervisor: Dr K Ngcoza
4. Chani, FM. "An investigation into how two Grade 11 Physical Science teachers mediate learning of the topic chemical equilibrium: A case study". (half-thesis) Graduated April 2015. Supervisor: Dr K Ngcoza; co-supervisor: Dr C Chikunda
5. Kanime, MK "An investigation into how Grade 11 Physical Science teachers mediate learning of the topic stoichiometry". Graduated April 2015. (half-thesis) Supervisor: Dr K Ngcoza, co-supervisor: Dr C Chikunda
6. Hoepfner, N "An investigation into how two Natural Science teachers in the Khomas Region mediate learning of the topic of atoms and molecules in Grade 7: A case study". (half-thesis) Graduated April 2015 Supervisor: Dr K Ngcoza, co-supervisor: Dr C Chikunda
7. Agunbiade, EA "Exploring the influence of learners' participation in an afterschool science enrichment programme on their disposition towards science: a case study of Khanya Maths and Science club". Graduated April 2016. Supervisor: Dr K Ngcoza, co-supervisor: K Jawahar (with distinction)
8. Nikodemus, K. "Exploring how Grade 11 Physical Science learners make sense of the concept of rates of reactions through the inclusion of the indigenous practice of making oshikundu: A Namibian case study". (half-thesis) Graduated April 2017 Supervisor: Dr K Ngcoza
9. Asheela, E. "An intervention on how using easily accessible resources to carry out hands-on practical activities in science influences science teachers' conceptual development and disposition towards the use of practical activities in science" . (half-thesis) Graduated April 2017 Supervisor: Dr K Ngcoza, (with distinction)

PhD

1. Bromley, CL "The Chemistry of Aloga Bay Ascidians". Graduated April 2016. Supervisor: Prof M Davies-Coleman, co-supervisors, Dr D Beukes and Mrs JD Sewry
2. Denuga, DD "An intervention on supporting teachers' understanding of and mediation of learning of stoichiometry in selected schools in the Zambezi Region" Completed May 2019. Supervisor: Prof K Ngcoza
3. Sarron, AFD "Activity of diverse chalcones against several targets: Statistical analysis of a high-throughput virtual screen of a custom chalcone library." Completed June 2019. Supervisor: Prof K Lobb

Recent Publications:

1. Chani, F., Ngcoza, K. M., Chikunda, C., & Sewry, J. (2018). Exploring the mediation of learning of chemical equilibrium to high-achieving students in a selected senior secondary school in Namibia.*African Journal of Research in Mathematics, Science and Technology Education,* 22(3), 287-296. DOI: 10.1080/18117295.2018.1528031

2. Sewry, J. D., & Paphitis, S. A. (2018). Meeting Important Educational Goals for Chemistry through Service-Learning. *Chemistry Education Research and Practice*. (19), 973 DOI: 10.1039/c8rp00103k

3. Veale, C. G., Krause, R. W., & Sewry, J. D. (2017). Blending problem-based learning and peer-led team learning, in an open ended 'home-grown'pharmaceutical chemistry case study. Chemistry Education Research and Practice. DOI: 10.1039/C7RP00180K

4. Esther Agunbiade, Kenneth Ngcoza, Kavish Jawahar & Joyce Sewry (2017):An Exploratory Study of the Relationship between Learners ' Attitudes Towards Learning Science and Characteristics of an Afterschool Science Club, African Journal of Research in Mathematics, Science and Technology Education, DOI: 10.1080/18117295.2017.1369274

5. Ngcoza, Kenneth M., Joyce Sewry, Charles Chikunda, and Wendy Kahenge. "Stakeholders' Perceptions of Participation in Science Expos: A South African Case Study." African Journal of Research in Mathematics, Science and Technology Education,2016, 20(2), 189-199.

6. Joyce D. Sewry, Sarah R. Glover, Timothy G. Harrison, Dudley E. Shallcross, Kenneth M. Ngcoza. "Offering community engagement activities to increase chemistry knowledge and confidence for teachers and students" J. Chem. Educ. 2014. dx.doi.org/10.1021/ed400495m

7. Sewry, J., & Mokilane, P. "A Rasch analysis to determine the difficulty of the National Senior Certificate Mathematics examination" Perspectives in education: standards in education and training: the challenge, 2014, 32(1), 192-209.

8. Sarah R. Glover, Joyce D. Sewry, Candice L. Bromley, Michael T. Davies-Coleman, Amanda Hlengwa. "The implementation of a service-learning component in an organic chemistry laboratory Course" J. Chem. Educ. 2013, 90(5), 578?583. doi.org/10.1021/ed2008153

9. Sue Southwood , Joyce Sewry, Duncan Samson, "Investigating the nature of epistemological access afforded by a first-year chemistry intervention programme" Journal of Independent Teaching and Learning, 2012, 7, 5-13

10. Suthananda N. Sunassee, Ryan M. Young, Joyce D. Sewry, Timothy G. Harrison, Dudley E. Shallcross, "Creating climate change awareness through practical chemistry demonstrations" Acta Didactica Napocensia, 2012, 5(4)

11. Timothy G. Harrison, Dudley E. Shallcross, Nicholas C. Norman, Joyce D. Sewry, Michael T. Davies-Coleman, "Publicising Chemistry in a Multi-cultural Society through Chemistry Outreach" South African Journal of Science, 2011, 107(11/12)

12. Modise Rammika, Godfred Darko, Zenixole Tshentu, Joyce Sewry and Nelson Torto "Dimethylglyoxime based ion-imprinted polymer for the determination of Ni(II) ions from aqueous samples" Water SA,2011, 37(3) Available at: http://www.wrc.org.za

Recent Conference Presentations:

1. Sewry, J.D., Grinham, A. Short Paper. "Soap-making: a practical exercise with the Science Extended Studies students." *SAARMSTE 2017 Conference.* Bloemfontein, 17 – 20 January 2017
2. Sewry, J.D., Kelly, K., Lobb,K.. Short Paper. "Phenomenology: Pre-conceptions and experiences of non-chemists using milk paints." *SAARMSTE 2017 Conference.* Bloemfontein, 17 – 20 January 2017
3. Reddy, M., Sewry, J.D. Short paper. "Service-Learning: an insight into chemical education". *SAARMSTE 2014 Conference.* Port Elizabeth, 13 – 16 January 2014
4. Sewry, J.D., Mokilane, P. "Using Rasch analysis to analyse the NSC mathematics examination". *Umalusi conference.* Johannesburg, 10 – 12 May 2012
5. Sunassee, S.S., Young, R.M., Sewry, J.D., Harrison, T.G., Shallcross, D.E. Poster. "Practical demonstrations of atmospheric chemistry in schools in the Western Cape region of South Africa". *Community Engagement conference*. East London, 8 – 10 November 2011
6. Symposium. "The Power of Partnerships: Towards Knowledge and Capacity-Building" *Community Engagement conference.* East London, 8 – 10 November 2011, consisted of three papers:

1. Ngcoza, K.M., Sewry, J.D., Maselwa, M.R. "Learning mathematics and science in interactive-fun ways: Beyond the school horizons"
2. Ngcoza, K.M., Sewry, J.D., Maselwa, M.R., Songqwaru, Z. "Science teachers' knowledge and capacity-building through chemistry workshops"
3. Abel, S.R., Sewry, J.D., Bromley, C.L., Davies-Coleman, M.T., Hlengwa, A., "Slime and dyes: Practical chemistry for students and learners"

7. Sewry, J.D., Snap shot. "Community Engagement in Chemistry at Rhodes University", *SAARMSTE 2011 Conference.* Mafikeng, 18 – 21 January 2011.

8. Samson, D., Sewry, J.D., Southwood, S. Short paper. "Investigating the nature of epistemological access afforded by a first- year chemistry intervention programme", *SAARMSTE 2011 Conference.* Mafikeng, 18 – 21 January 2011.

. **Committee Membership:**

- Member of the Rhodes University Senate
- Member of the Rhodes University Executive Committee of Senate
- Member of the Rhodes University Faculty of Science
- Member of the Deans' Forum
- Member of the Rhodes University Academic Leadership Forum
- Member of the Rhodes University Community Engagement Committee
- Member of the MCOM Test Development Team, UCT
- Member of the steering committee of the Rhodes University Maths Experience for Grade 7-12 learners
- Member of the Advisory Committee for the Grahamstown Science Expo
- Chair of the Science Faculty Teaching and Learning Committee
- Chair of the Science Faculty Community Engagement Committee

2018 Publications:

1. **Achadu, O.J.** and **Nyokong, T.** (2018) Fluorescence "turn-ON" nanosenor for cyanide ion using supramolecular hybrid of graphene quantum dots and cobalt pyrene-derivatized phthalocyanine. *Dyes and Pigments.* 2018. p.1-8.

2. **Ayeni, A.O.**, **Watkins, G.M.** and Hosten, E.C. (2018) Polymorphism of a new Mannich base-[-4-methyl-2-((4-(4-nitrophenyl) piperazin-1-yl) methyl) phenol]. *Journal of Molecular Structure.* 1160 (2018). p.38-45.

3. **Ayeni, A.O.** and **Watkins, G.M.** (2018) Synthesis and evaluation of catecholase activities of metal complexes of 1, 4-substituted piperazine Mannich Base of 4-acetamidophenol. *Turkish Journal of Chemistry.* 42 (2018). p.1275-1284.

4. **Ayeni, A.O.** and **Watkins, G.M.** (2018) Biomimetics of mononuclear and dinuclear Cu(II) and Fe(III) complexes of a newly synthesized piperazyl Mannich base with or without thiocyanate towards catechol. *Monatshefte Fur Chemie.* 149 (2018). p.2175-2182.

5. **Ayeni, A.O.**, **Watkins, G.M.** and Hosten, E.C. (2018) Molecular and Crystal structure of a novel Mannich quaternary salt: 3-(dimethylamino)-1-*p*-tolylpropan-1-one hydrochloride. *Journal of Structural Chemistry*. 59 (7). p.1688-1690.

6. **Beteck, R.M.**, **Isaacs, M.**, **Hoppe, H.C.** and **Khanye, S.D.** (2018) Synthesis, *in vitro* Cytotoxicity and Trypanosomal Evaluation of Novel 1,3,6-Subsituted Non-fluoroquinolones. *South African Journal of Chemistry – Suid-Afrikaanse Tydskrif Vir Chemie.* 71 (2018). p.188-195.

7. **Centane, S.**, **Sekhosana, K.E.**, **Matshitse, R.** and **Nyokong, T.** (2018) Electrocatalytic activity of a push-pull phthalocyanine in the presence of reduced and amino functionalized graphene quantum dots towards the electrooxidation of hydrazine. *Journal of Electroanalytical Chemistry.* 820 (2018). p.146-160.

8. **Chani, F.M.**, **Ngcoza, K.M.**, **Chikunda, C.** and **Sewry, J.D.** (2018) Exploring the Mediation of Learning of Chemical Equilibrium to High-achieving Students in a Selected Senior Secondary School in Namibia. *African Journal of Research in Mathematics, Science and Technology Education*. 22 (3). p.287-296.

9. **Chindeka, F.**, **Mashazi, P.**, **Britton, J.**, **Fomo, G.**, **Oluwole, D.O.**, **Sindelo, A.** and **Nyokong, T.** (2018) Optimizing phthalocyanine based dye-sensitized solar cells: The role of reduced graphene oxide. *Synthetic Metals.* 246 (2018). p.236-245.

10. **Darrell, O.T.**, **Hulushe, S.T.**, **Mtshare, T.E.**, **Beteck, R.M.**, **Isaacs, M.**, **Laming, D.**, **Hoppe, H.C.**, **Krause, R.W.M.** and **Khanye, S.D.** (2018) Synthesis, Antiplasmodial and Antitrypanosomal Evaluation of a Series of Novel 2-Oxoquinoline-based Thiosemicarbazone Derivatives. *South African Journal of Chemistry – Suid-Afrikaanse Tydskrif Vir Chemie*. 71 (2018). p.174-181.

11. Milanowski, D.J., Oku, N., Cartner, L.K., Bokesch, H.R., Williamson, R.T., Sauri, J., Liu, Y., Blinov, K.A., Ding, Y., Li, X.C., Ferreira, D., Walker, L.A., Khan, S., **Davies-Coleman, M.T.**, Kelley, J.A., McMahon, J.B., Martin, G.E., and Gustafson, K.R. (2018) Unequivocal determination of caulamidines A and B: application and validation of new tools in the structure elucidation tool box. *Chemical Science*. 9 (2018). p.307-314.

12. **Dube, E.** and **Nyokong, T.** (2018) Effect of gold nanoparticles shape and size on the photophysicochemical behaviour of symmetric and asymmetric zinc phthalocyanines. *Journal of Luminescence.* 2018. p.1-8.

13. **Dube, E.**, **Nwaji, N.**, **Mack, J.** and **Nyokong, T.** (2018) The photophysicochemical behavior of symmetric and asymmetric zinc phthalocyanines, surface assembled onto gold nanotriangles. *New Journal of Chemistry.* 42 (2018). p.14290-14299.

14. **Dube, E.**, **Oluwole, D.O.** and **Nyokong, T.** (2018) Improved Photophysical and Photochemical Properties of Thiopheneethoxy Substituted Metallophthalocyanines on Immobilization onto Gold-speckled Silica Nanoparticles. *Photochemistry and Photobiology.* 94 (2018). p.521-531.

15. **Dube, E.**, **Oluwole, D.O.**, **Prinsloo, E.** and **Nyokong, T.** (2018) A gold-chitosan composite with low symmetry zinc phthalocyanine for enhanced singlet oxygen generation and improved photodynamic therapy activity. *New Journal of Chemistry.* 42 (2018). p.10214-10225.

16. **Dube, E.**, **Oluwole, D.O.**, **Nwaji, N.** and **Nyokong, T.** (2018) Glycosylated zinc phthalocyanine-gold nanoparticle conjugates for photodynamic therapy: Effect of nanoparticle shape. *Spectrochimica Acta Part A – Molecular and Biomolecular Spectroscopy.* 203 (2018). p.85-95.

17. **Faridoon, H.**, **Mnkandhla, D.**, **Isaacs, M.**, **Hoppe, H.C.** and **Kaye, P.T.** (2018) Synthesis and evaluation of substituted 4-arylimino-3-hydroxybutanoic acids as potential HIV-1 integrase inhibitors. *BIOORGANIC & Medicinal Chemistry Letters.* 28 (2018). p.1067-1070.

18. **Fomo, G.**, **Achadu, O.J.** and **Nyokong, T.** (2018) One-pot synthesis of graphene quantum dots phthalocyanines supramolecular hybrid and the investigation of their photophysical properties. *Journal of Materials Science.* 53 (2018). p.538-548.

19. **Fomo, G.**, **Nwaji, N.** and **Nyokong, T.** (2018) Low symmetric metallophthalocyanine modified electrode via click chemistry for simultaneous detection of heavy metals. *Journal of Electroanalytical Chemistry.* 813 (2018). p.58-66.

20. **Gumbo, M.**, **Beteck, R.M.**, **Mandizvo, T.**, Seldon, R., Warner, D.T., **Hoppe, H.C.**, **Isaacs, M.**, **Laming, D.**, Tam, C.C., Cheng, L.W., Liu, N., Land, K.M. and **Khanye, S.D.** (2018) Cinnamoyl-Oxaborole Amides: Synthesis and Their in Vitro Biological Activity. *Molecules.* 23 (2018). p.1-13.

21. **Idowu, M.A.**, **Xego, S.**, **Arslanoglu, Y.**, **Mack, J.**, **Antunes, E.** and **Nyokong, T.** (2018) Photophysicochemical behaviour and antimicrobial properties of monocarboxy Mg (II) and Al (III) phthalocyanine-magnetite conjugates. *Spectrochimica Acta Part A – Molecular and Biomolecular Spectroscopy.* 193 (2018). p.407-414.

22. **Isalomboto Nkanga, C.** and **Krause, R.W.M.** (2018) Abstract: Formualtion and characterization of pH-/light-responsive liposomes for macrophage targeted delivery of isoniazid. *Chemical Papers.* 10 (2018). p.24-25.

23. **Isalomboto Nkanga, C.** and **Krause, R.W.M.** (2018) Conjugation of isoniazid to a zinc phthalocyanine via hydrazone linkage for pH-dependent liposomal controlled release. *Applied Nanoscience*. 8 (2018). p.1313-1323.

24. **Isalomboto Nkanga, C.**, **Walker, R.B.** and **Krause, R.W.M.** (2018) pH-Dependant release of isoniazid from isonicotinic acid (4-hydroxy-benzylidene)-hydrazide loaded liposomes. *Journal of Drug Delivery Science and Technology.* 45 (2018). p.264-271.

25. **Olawode, E.O.**, **Tandlich, R.**, **Prinsloo, E.**, **Isaacs, M.**, **Hoppe, H.C.**, Sheldon, R., Warner, D.T., Steenkamp, V. and **Kaye, P.T.** (2018) Synthesis and biological screening of diethyl [N-(thiazol-2-yl)carbamoyl]methylphosphonates. *Arkivoc.* 7 (2018). p.110-118..

26. Kumar, A., **Khan, F.I.** and Olaniran, A.O. (2018) Chloroacetaldehyde dehydrogenase from *Ancylobacter aquaticus* UV5: Cloning, expression, characterization and molecular modeling. *International Journal of Biological Macromolecules.* 114 (2018). p.1117-1126.

27. Ali, S., **Khan, F.I.**, Chen, W., Rahaman, A. and Wang, Y. (2018) Open and closed states of Mrlip1 DAG lipase revealed by molecular dynamics simulation. *Molecular Simulation.* 44 (18). p.1520-1528.

28. Gulzar, M., Syed, S.B., **Khan, F.I.**, Khan, P., Ali, S., Hasan, G.M., Taneja, P. and Hassan, M.I. (2018) Elucidation of interaction mechanism of ellagic acid to the integrin linked kinase. *International Journal of Biological Macromolecules.* 2018. p.1-8.

29. Beg, A., **Khan, F.I.**, **Lobb, K.A.**, Islam, A., Ahmad, F. and Hassan, M.I. (2018) High throughput screening, docking, and molecular dynamics studies to identify potential inhibitors of human calcium/calmodulin-dependent protein kinase IV. *Journal of Biomolecular Structure & Dynamic.* 2018. p.1-14.

30. Husain, F.M., Ahmad, I., **Khan, F.I.**, Al-Shabib, N.A., Baig, M.H., Hussain, A., Rehman, M.T., Alajmi, M.F. and **Lobb, K.A.** (2018) Seed Extract of *Psoralea corylifolia* and Its Constituent Bakuchiol Impairs AHL-Based Quorum Sensing and Biofilm Formation in Food- and Human-Related Pathogens. *Frontiers in Cellular and Infection Microbiology*. 8 (351). p.1-16.

31. Syed, S.B., **Khan, F.I.**, Khan, S.H., Srivastava, S., Hasan, G.M., **Lobb, K.A.**, Islam, A., Hassan, M.I. and Ahmad, F. (2018) Unravelling the unfolding mechanism of human intergrin linked kinase by GdmCl-induced denaturation. *International Journal of Biological Macromolecules.* 117 (2018). p.1252-1263.

32. Mohammad, T., **Khan, F.I.**, **Lobb, K.A.**, Islam, A., Ahmad, F. and Hassan, M.I. (2018) Identification and evaluation of bioactive natural products as potential inhibitors of human microtubule affinity-regulating kinase 4 (MARK4). *Journal of Biomolecular Structure & Dynamics.* 2018. p.1-17.

33. Syed, S.B., **Khan, F.I.**, Khan, S.H., Srivastava, S., Hasan, G.M., **Lobb, K.A.**, Islam, A., Hassan, M.I. and Ahmad, F. (2018) Unravelling the unfolding mechanism of human intergrin linked kinase by GdmCl-induced denaturation. *International Journal of Biological Macromolecules.* 117 (2018). p.1252-1263.

34. Khan, S., **Khan, F.I.**, Mohammad, T., Khan, P., Hasan, G.M., **Lobb, K.A.**, Islam, A., Ahmad, F. and Hassan, M.I. (2018) Exploring molecular insights into the interaction mechanism of cholesterol derivatives with the Mce4A: A combined spectroscopic and molecular dynamic simulation studies. *International Journal of Biological Macromolecules.* 111 (2018). p.548-560.

35. Odame, F., Betz, R., Hosten, E.C., Krause, J., **Isaacs, M.**, **Hoppe, H.C.**, **Khanye, S.D.**, Sayed, Y., Frost, C.L., **Lobb, K.A.** and Tshentu, Z.R. (2018) A New Synthetic Method for Tetraazatricyclic Derivatives and Evaluation of Their Biological Properties. *ChemistrySelect*. 3 (2018). p.13613-13618.

36. Gounden, D., **Khene, S.** and Nombona, N. (2018) Electroanalytical detection of heavy metals using metallophthalocyanine and silica-coated iron oxide composites. *Chemical Papers.* 72 (2018). p.3043-3056.

37. Namondo, B.V., Foba-Tendo, J., Etape, E.P. and **Krause, R.W.M.** (2018) Potential of blended biomass feedstock from some species of raffia palm (*Raffia farinifera, Raffia hookeri and Raffia vinifera*) and Oil Palm Empty Fruit Bunch (OPEFB) from Cameroon. *African Journal of Pure and Applied Chemistry*. 12 (4). p.25-33.

38. **Kubheka, G.**, **Sanusi, K.**, **Mack, J.** and **Nyokong, T.** (2018) Optical limiting properties of 3,5-dipyrenylvinylene BODIPY dyes at 532 nm. *Spectrochimica Acta Part A – Molecular and Biomolecular Spectroscopy.* 191 (2018). p.357-364.

39. **Lebechi, A.K.**, Gai, L., Shen, Z., **Nyokong, T.** and **Mack, J.** (2018) Electrospun 3,5-dithienylvinyleneBODIPY embedded polystyrene nanofibers for the photocatalytic degradation of azo dyes in industrial wastewaters. *Journal of Porphyrins and Phthalocyanines.* 22 (2018). p.501-508.

40. **Musyoka, T.M.**, **Tastan Bishop, O.**, **Lobb, K.A.** and **Moses, V.** (2018) The determination of CHARMM force field parameters for the Mg2+ containing HIV-1 integrase. *Chemical Physics Letters.* 711 (2018). p.1-7.

41. Odame, F., Krause, J., Hosten, E.C., Betz, R., **Lobb, K.A.**, Tshentu, Z.R. and Frost, C.L. (2018) Synthesis, Characterization and DPPH Scavenging Activity of some Benzimidazole Derivatives. *Bulletin of the Chemical Society of Ethiopia.* 32 (2). p.271-284.

42. Odame, F., Hosten, E.C., Betz, R., **Lobb, K.A.** and Tshentu, Z.R. (2018) Characterization and Computational Studies of a Co-Crystal of 2-Aminobenzimdazole and 2-[(Benzolycarbamothioyl) Amino]Propanoic Acid. *Journal of Structural Chemistry.* 59 (5). p.1200-1204.

43. Liang, X., Li, M., **Mack, J.**, **Lobb, K.A.** and Zhu, W. (2018) Iron(III)porphyrin electrocatalyzed enantioselective carbon-chloride bond cleavage of hexachlorocyclohexanes (HCHs): combined experimental investigation and theoretical calculations. *Dalton Transactions.* 47 (2018). p.11470-11476.

44. Bomanda, B.T., Waudo, W., Ngoy, B.P., Muya, J.T., Mpiana, P.T., Mbala, M., Openda, I., **Mack, J.** and **Nyokong, T.** (2018) Photophysical and *in vitro* Antibacterial Studies of 2,6-Dibromo-BODIPY Dye Substituted with Dithienylenevinylene at 3,5-Positions. *Macroheterocycles*. 11 (4). p.429-437.

45. Abdurrahmanoglu, S., Canlica, M., **Mack, J.** and **Nyokong, T.** (2018) Pyridone substituted phthalocyanines: Photophysico-chemical properties and TD-DFT calculations. *Journal of Porphyrins and Phthalocyanines*. 22 (2018). p.25-31.

46. Liang, X., Luo, H., Lan, Y., Zhu, W., **Mack, J.**, **Hlatshwayo, Z.**, **Nyokong, T.** and Chen, Q. (2018) n - Extended BODIPY Analogues: Synthesis, Electronic Structure, Potential Utility for *in vivo* Imaging Applications and Cytotoxicity. *Macroheterocycles*. 11 (4). p.421-428.

47. Liang, X., Qin, M., Zhou, L., Liu, T., Li, M., **Mack, J.**, **Ndebele, N.**, **Nyokong, T.** and Zhu, W. (2018) Porphyrin dimers with a bridging chiral amide-bonded benzo-moiety: Influence of positional isomerism on the molecular chirality. *Dyes and Pigments.* 154 (2018). p.229-233.

48. Yuan, X., Li, M., Meng, T., **Mack, J.**, **Soy, R.**, **Nyokong, T.**, Zhu, W., Xu, H. and Liang, X. (2018) Core-modified rubyrins with phenanthrene-fused pyrrole rings: Highly selective and tunable response to Hg2+ ions. *Dyes and Pigments.* 158 (2018). p.188-194.

49. **Mafukidze, D.M.** and **Nyokong, T.** (2018) A comparative study of the singlet oxygen generation capability of a zinc phthalocyanine linked to graphene quantum dots through ?-? stacking and covalent conjugation when embedded in asymmetric polymer members. *Journal of Molecular Structure*. 1180 (2018). p.307-317.

50. **Magadla, A., Oluwole, D.O., Britton, J. and Nyokong, T. Magadla, A.**, **Oluwole, D.O.**, **Britton, J.** and **Nyokong, T.** (2018) Effect of nature of nanoparticles on the photophysicochemical properties of asymmetrically substituted Zn phthalocyanines. *Inorganica Chimica Acta.* 482 (2018). p.438-446.

51. **Makinde, Z.O.**, **Louzada, M.S.**, **Britton, J.**, **Nyokong, T.** and **Khene, S.** (2018) Spectroscopic and nonlinear optical properties of alkyl thio substituted binuclear phthalocyanines. *Dye and Pigments.* 2018. p.1-8.

52. **Managa, M.**, **Achadu, O.J.** and **Nyokong, T.** (2018) Photophysical studies of graphene quantum dots - Pyrene-derivatized porphyrins conjugates when encapsulated within Pluronic F127 micelles. *Dyes and Pigments.* 148 (2018). p.405-416.

53. **Managa, M.**, **Britton, J.**, **Prinsloo, E.** and **Nyokong, T.** (2018) Effects of Pluronic F127 micelles as delivering agents on the *vitro* dark toxicity and photodynamic therapy activity of carboxy and pyrene substituted porphyrins. *Polyhedron.* 152 (2018). p.102-107.

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