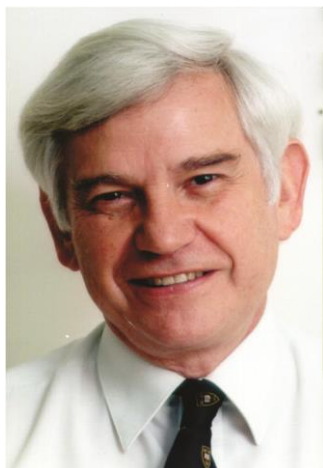




RHODES UNIVERSITY, GRAHAMSTOWN, SOUTH AFRICA



STAFF INFORMATION

Professor Perry T. Kaye

**BSc (Natal), BSc (Hons) (UNISA), MSc (Natal), DPhil (Oxon), FRSC, FRSSAf.
Professor of Organic Chemistry, Rhodes University (1987-2007). (1987-2007)**

Head of the Department of Chemistry (1991-2007), Rhodes University.

Director, Rhodes Centre for Chemico- and Biomedical Research (2005-)

Professor Emeritus (2008-)

Find Me:

Postal Address: Department of Chemistry, Chemical and Pharmaceutical Sciences Building, Corner of University and Artillery Roads, Grahamstown, 6140, South Africa.

Courier Address: Room F39, Department of Chemistry, Cnr. of University and Artillery Roads, Rhodes University, Grahamstown, 6140, South Africa

Research Interests:

1. Synthetic Methodology
 - Applications of the Baylis-Hillman reaction in the synthesis of benzanulated heterocyclic systems and their elaboration to biologically active compounds.
2. Medicinal Chemistry.
 - Design, synthesis and in silico and in vitro evaluation of the medicinal potential of novel compounds as anti-parasitic (anti-malarial and anti-trypanosomal), HIV-1 PR, IN and RT inhibitors and anti-TB agents.
3. Physical Organic Chemistry
 - Kinetic-mechanistic studies of organic reaction mechanisms using spectroscopic and computational methods.

Awards and selected Lectures:

- Vice Chancellor's Distinguished Teaching Award/Medal, Rhodes University, 1994.
- AECl Medal of the South African Chemical Institute, 1996
- Vice Chancellor's Distinguished Senior Research Award/Medal, Rhodes University, 2001.
- Gold Medal of the South African Chemical Institute, 2007.
- Of Molecules and Men, Inaugural Lecture, Rhodes University, 1989
- Dimensions of Reality - a Chemist's Perspective, University Lecture as recipient of 1994 Vice-Chancellor's Distinguished Teaching Award, 1995.
- Through the Looking Glass - Reflections on the Chemical Implications of Chirality, Joint meeting of the South African Chemical Institute (SACI) - East Cape Division and the Royal Society of South Africa; as 1996 recipient of the AECl Medal (SACI), 1997.
- Senecio Alkaloids, Serendipity and Synthesis - the Warren Connection, Frank Warren Lecture at the 1997 Frank Warren National Organic Chemistry Conference, Mtunzini.
- Through the Looking Glass - Confronting Chirality in Synthesis, Plenary Lecture at Interscience '98, University of the North, Pietersburg, Oct., 1998.
- The Baylis-Hillman Zwitterion - Reactivity and Substrate Selectivity, Invited Lecture presented at the International Workshop on Reactive Intermediates-1999 (IWRI -99), Szczyrk, Poland, Aug., 1999.
- The Baylis-Hillman Zwitterion - Reactivity and Substrate Selectivity, Lecture presented, by invitation, in the Department of Chemistry, University of York, UK, September, 1999.
- The Baylis-Hillman Zwitterion - Reactivity and Substrate Selectivity, Lecture presented, by invitation, in the Department of Chemistry, Imperial College, October, 1999.
- The Baylis-Hillman Entrée to Heterocyclic Systems, Invited Keynote Lecture presented at the RSC/SACI 1st International Conference: Organic Chemistry, University of Cape Town, Jan., 2001.
- Camphor-derived Chiral Auxiliaries in Asymmetric Synthesis, Invited Lecture, presented at the University of York, UK, Sept., 2003.
- Design, Synthesis and Evaluation of Novel Metal-Selective Ligand Systems, Lecture presented at the University of St Andrews, UK, Sept., 2003.
- Through the Looking Glass - Confronting Chirality in Synthesis, The Royal Society of Chemistry Frank Warren Memorial Lecture, presented at the University of Cape Town, Oct., 2003.
- Medicinal Chemistry Research – a South African Perspective, ICS-UNIDO Expert Group Meeting, Trieste, Italy, Oct., 2004.
- Through the Looking Glass –a stereochemical adventure The Victor Pretorius Memorial Lectures, University of Pretoria, May, 2006.
- Mechanisms: Making Sense of Complexity, P.T. Kaye, the 2007 SACI Gold Medal Lecture presented at BOCC'08 – Bi-national Organic Chemistry Conference, Kruger National Park, Sept. 2008.
- Medicinal Chemistry Challenges in Africa – an Academic Response, P.T. Kaye, Lecture presented at iThemba Pharmaceuticals Launch, Johannesburg, March., 2009.
- 25 Years of Organic Chemistry @ Rhodes, Invited Lecture, SACI Centenary Symposium, East London, 2012.
- Journeys in Molecular Space: Experimental and Theoretical Studies of Baylis-Hillman-Mediated Transformations, Invited Plenary Lecture, SACI National Convention, East London, Dec., 2013.
- Baylis-Hillman Mediated Benzannulation Strategies: Experimental and Theoretical Studies Invited Lecture at the SACI-ACS Binational Organic Chemistry Conference, Stellenbosch, Dec., 2014.

Sabbatical Visits:

1. University of Cambridge, July 1985? January 1986; project arranged jointly with Professor Jack Lewis and Dr. Olga Kennard on X?ray crystallography and oligonucleotide synthesis.
2. University of Cambridge, April? September, 1990; worked with Dr. D.H. Williams on antibiotic ligand binding.
3. University of York, July - September, 1999: worked with Prof. R.E. Hubbard on the application of computer modelling to biologically significant molecules.
4. University of Oxford, June – September, 2003; worked with Prof. W.G. Richards' group, applying ab initio and DFT calculations to organic reaction mechanisms.

2018 Publications:

1. **Achadu, O.J. and Nyokong, T.** (2018) Fluorescence "turn-ON" nanosensor 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-Substituted 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: Formulation 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 Mr1p1 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 integrin 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 integrin 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-Aminobenzimidazole 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., Waudu, 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 π - π 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.
54. **Managa, M.**, **Khene, S.**, **Britton, J.**, Martynov, A.G., Gorbunova, Y.G., Tsivadze, A.Y. and **Nyokong, T.** (2018) Photophysics and NLO properties of Ga(III) and In(III) phthalocyaninates bearing diethyleneglycol chains. *Journal of Porphyrins and Phthalocyanines*. 22 (2018). p.137-148.

55. **Managa, M., Ngoy, B.P., Mafukidze, D.M. and Nyokong, T.** (2018) Incorporation of metal free and Ga 5,10,15,20-tetrakis(4-bromophenyl) porphyrin into Pluronic F127-folic acid micelles. *Journal of Luminescence*. 194 (2018). p.739-746.
56. **Matlou, G.G., Kobayashi, N., Kimura, M. and Nyokong, T.** (2018) Physicochemical properties of water-soluble unsymmetrical phthalocyanine-folic acid conjugates. *Dyes and Pigments*. 149 (2018). p.393-398.
57. **Matlou, G.G., Oluwole, D.O., Prinsloo, E. and Nyokong, T.** (2018) Photodynamic therapy activity of zinc phthalocyanine linked to folic acid and magnetic nanoparticles. *Journal of Photochemistry and Photobiology B – Biology*. 186 (2018). p.216-224.
58. **Matlou, G.G., Oluwole, D.O. and Nyokong, T.** (2018) Evaluation of the photosensitizing properties of zinc and indium tetra cinnamic acid phthalocyanines linked to magnetic nanoparticles on human breast adenocarcinoma cells. *Journal of Luminescence*. 2018. p.1-8.
60. **Matshitse, R. and Nyokong, T.** (2018) Singlet Oxygen Generating Properties of Different Sizes of Charged Graphene Quantum Dot Nanoconjugates with a Positively Charged Phthalocyanine. *Journal of Fluorescence*. 28 (2018). p.827-838.
61. **Matshitse, R., Nwaji, N., Managa, M., Prinsloo, E. and Nyokong, T.** (2018) Effect of number of positive charges on the photophysical and photodynamic therapy activities of quaternary benzothiazole substituted zinc phthalocyanine. *Journal of Photochemistry and Photobiology A – Chemistry* 367 (2018). p.253-260.
62. **Mbaba, M., De La Mare, J.A., Sterrenberg, J.N., Kajewole, D.I., Maharaj, S., Edkins, A.L., Isaacs, M., Hoppe, H.C. and Khanye, S.D.** (2018) Novobiocin-ferrocene conjugates possessing anticancer and antiplasmodial activity independent of HSP90 inhibition. *Journal of Biological Inorganic Chemistry*. 2018. p.1-11.
63. **Mgidlana, S., Oluwole, D.O. and Nyokong, T.** (2018) Effects of the carboxylic acid substituents on the photophysical and nonlinear optical properties of asymmetrical Zn(II) phthalocyanines-quantum dots conjugates. *Inorganic and Nano-Metal Chemistry*. 48 (6). p.296-307.
64. **Mgidlana, S., Oluwole, D.O. and Nyokong, T.** (2018) Fabrication of efficient nonlinear optical absorber using Zn phthalocyanine-semiconductor quantum dots conjugates. *Polyhedron*. 2018. p.1-14.
65. **Molupe, N., Babu, B., Oluwole, D.O., Prinsloo, E., Mack, J. and Nyokong, T.** (2018) The investigation of *in vitro* dark cytotoxicity and photodynamic therapy effect of a 2,6-dibromo-3,5-distyryl BODIPY dye encapsulated in Pluronic® F-127 micelles. *Journal of Coordination Chemistry*. 71 (21). p.3444-3457.
66. **Ejeromedoghene, O., Adewuyi, S., Amolegbe, S.A., Akinremi, C.A., Moronkola, B.A. and Salaudeen, T.** (2018) Electrovalent chitosan functionalized methyl-orange/metal nanocomposites as chemosensors for toxic aqueous anions. *Nano-Structures and Nano-Objects*. 16 (2018). p.174-179.
67. **Mpeta, L.S., Fomo, G. and Nyokong, T.** (2018) Click chemistry electrode modification using 4-ethynylbenzyl substituted cobalt phthalocyanine for applications in electrocatalysis. *Journal of Coordination Chemistry*. 71 (10). p.1623-1638.
68. **Mvango, S. and Mashazi, P.** (2018) Synthesis, characterization of coppier oxide-gold nanoalloys and their peroxidase-like activity towards colorimetric detection of hydrogen peroxide and glucose. *Materials Science & Engineering C-Materials for Biological Applications*. 2018. p.1-10.

69. Mwanza, D., Louzada, M.S., Britton, J., Sekhosana, K.E., Khene, S., Nyokong, T. and Mashazi, P. (2018) The effect of the cobalt and manganese central metal ions on the nonlinear optical properties of tetra(4-propargyloxyphenoxy)phthalocyanines. *New Journal of Chemistry*. 42 (2018). p.9857.
70. Ndebele, N., Mack, J. and Nyokong, T. (2018) A 3,5-DistyrylBODIPY Dye Functionalized with Boronic Acid Groups for Direct Electrochemical Glucose Sensing. *Electroanalysis*. 2018. p.1-9.
71. Ngoy, B.P., Hlatshwayo, Z., Nwaji, N., Fomo, G., Mack, J. and Nyokong, T. (2018) Photophysical and optical limiting properties at 532 nm of BODIPY dyes with p-benzyloxystyryl groups at the 3,5-positions. *Journal of Porphyrins and Phthalocyanines*. 22 (2018). p.413-422.
72. Ngoy, B.P., May, A.K., Mack, J. and Nyokong, T. (2018) Effect of bromination on the optical limiting properties at 532 nm of BODIPY dyes with p-benzyloxystyryl groups at the 3,5-positions. *Journal of Molecular Structure*. 2018. p.1-9.
73. Nwahara, N., Achadu, O.J. and Nyokong, T. (2018) In-situ synthesis of gold nanoparticles on graphene quantum dots-phthalocyanine nanoplateforms: First description of the photophysical and surface enhanced Raman scattering behaviour. *Journal of Photochemistry and Photobiology A – Chemistry*. 359 (2018). p.131-144.
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2017 Publications:

1. Adeyemi, C.M., Isaacs, M., Mnkandhla, **D.**, Klein, R., Hoppe, H.C., **Krause, R.W.M., Lobb, K.A. & Kaye, P.T.** 2017. Synthesis and anti-parasitic activity of C-benzylated (N-arylcarbamoyl)alkylphosphonate esters. *Tetrahedron*, 73: 1661–1667. Available: <http://dx.doi.org/10.1016/j.tet.2017.01.045>
2. Olawode, E.O.; Tandlich, R., Prinsloo, E; Isaacs, M; Hoppe, H; Seldon, R; Warner, D.F.; Steenkamp, V; **Kaye, P.T.**, 2017. Synthesis and biological evaluation of (E)-cinnamic acid, (E)-2-styrylthiazole and (E)-2-[2-(naphthalen-1-yl)vinyl]thiazole derivatives. *ARKIVOC* . URI: <http://hdl.handle.net/2263/63240>
3. Singh, A., **Kaye, P.** and **Lobb, K.A.**, 2017. ¹H NMR-based kinetic and theoretical studies of the simultaneous formation of two discrete rotameric systems of a novel difenchyl sulfite ester. *Tetrahedron*. <https://doi.org/10.1016/j.tet.2017.10.059>
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5. Faridoon,^a Dumisani Mnkandhla,^c Michelle Isaacs,^c Heinrich Hoppe,^{b,c} and Perry T. Kaye^{a,c} *Synthesis and Evaluation of Substituted 4-Arylimino-3 hydroxybutanoic Acids as HIV-1 Integrase Inhibitors. *Bioorg. & Med. Chem. Lett.*, 2018, 28(6), 1067-1070.

Older Publications:

- 166 Papers published or in press in peer-reviewed journals (as at March, 2017)
- 73 Higher degrees (MSc and PhD) supervised/co-supervised and successfully completed.
- Strong Base- or Acid-mediated Chemoselectivity Shifts in the Synthesis of 2H-Chromene or Coumarin Derivatives from Common Baylis-Hillman Adducts. Faridoon, Temitope O. Olomola, Matshawandile Tukulula, Rosalyn Klein and Perry T. Kaye *Tetrahedron*, 2015, 71, 4868-4873.
- Synthesis and Evaluation of 3-Hydroxy-3-phenylpropanoate Ester-AZT Conjugates as Potential Dual-action HIV-1 Integrase and Reverse Transcriptase Inhibitors M.H. Manyeruke, T.O. Olomola, S. Majumder, S. Abrahams, M. Isaacs, N. Mautsa, S. Mosebi, D. Mnkandhla, R. Hewer, H.C. Hoppe, R. Klein and P.T. Kaye *Bioorg. & Med. Chem.*, 2015, 24, 7521-7528
- Application of Baylis-Hillman Methodology in the Direct Construction of Chromone Derivatives Faridoon, Temitope.O. Olomola, Rosalyn Klein and Perry.T. Kaye* *Tetrahedron*, 2016, 72, 392-395.
- Elucidating Latent Mechanistic Complexity in Competing Acid-Catalysed Reactions of Salicylaldehyde-derived Baylis-Hillman Adducts Temitope O. Olomola, Rosalyn Klein, Mino R. Caira and Perry T. Kaye * *J. Org. Chem.*, 2016, 81 (1), 109-120
- Synthesis and Antimalarial Activity of N-Benzylated (N-Arylcarbamoyl)alkylphosphonic Acid Derivatives C.M. Adeyemi, Faridoon, M. Isaacs, D. Mnkandhla, H.C. Hoppe, R.W.M. Krause and P.T. Kaye* *Bioorg. & Med. Chem.*, 2016, 24, 6131-6138.
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- Synthesis of novel camphor-derived chiral auxiliaries and their application in asymmetric Morita-Baylis-Hillman reactions Lulama P. Mciteka, Kevin A. Lobb and Perry T. Kaye *Arkivoc*, 2016 (v) 151-163.
- Regioselective Synthesis and Anti-parasitic Activity of C-Benzylated (N-arylcarbamoyl)alkylphosphonate Esters. Christiana M. Adeyemi, Rosalyn Klein, Michelle Isaacs, Dumisani Mnkandhla, Heinrich C. Hoppe, Rui W.M. Krause and Perry T. Kaye. *Tetrahedron*, 2017, 73, 1661-1667
- Synthesis and Biological Evaluation of (E)-Cinnamic Acid, (E)-2-Styrylthiazole and (E)-2-[2-(Naphthalen-1-yl)vinyl]Derivatives Emmanuel O. Olawode,* Roman Tandlich, Earl Prinsloo, Michelle Isaacs, Heinrich Hoppe, Ronnett Seldon, Digby F. Warner, Vanessa Steenkamp and Perry T. Kaye* *Arkivoc*, in press
- Synthesis and Evaluation of Substituted 4-Arylimino-3-hydroxybutanoic Acids as HIV-1 Integrase Inhibitors Faridoon,^a Dumisani Mnkandhla,^c Michelle Isaacs,^c Heinrich Hoppe,^{b,c} and Perry T. Kaye^{a,c} * *Bioorg. & Med. Chem. Lett.*, 2018, 28(6), 1067-1070.