

2020 Publications

1. Matlou, Gauta Gold; Nyokong, Tebello
Photophysico-chemical properties and photoinactivation of *Staphylococcus Aureus* using zinc phthalocyanines linked silver nanoparticles conjugates
Dyes and Pigments (2020), 176, 108237 (1-11)
DOI:10.1016/j.dyepig.2020.108237
<https://doi.org/10.1016/j.dyepig.2020.108237>
2. Mpetla, Lekhetho S.; Sen, Pinar; Nyokong, Tebello
Investigation of electrocatalytic behaviour of low symmetry cobalt phthalocyanines when clicked to azide grafted carbon electrodes
Journal of Electroanalytical Chemistry (2020), 860, 113896 (1-10)
DOI:10.1016/j.jelechem.2020.113896
<https://doi.org/10.1016/j.jelechem.2020.113896>
3. Matshitse, Refilwe; Nyokong, Tebello
Substituent effect on the photophysical and nonlinear optical characteristics of Si phthalocyanine – Detonated nanodiamond conjugated systems in solution
Inorganica Chimica Acta (2020), 504, 119447 (1-10)
DOI:10.1016/j.ica.2020.119447
<https://doi.org/10.1016/j.ica.2020.119447>
4. Openda, Yolande Ikala; Sen, Pinar; Managa, Muthumuni; Nyokong, Tebello
Acetophenone substituted phthalocyanines and their graphene quantum dots conjugates as photosensitizers for photodynamic antimicrobial chemotherapy against *Staphylococcus aureus*
Photodiagnosis and Photodynamic Therapy (2020), 29, 101607 (1-11)
DOI:10.1016/j.pdpdt.2019.101607
<https://doi.org/10.1016/j.pdpdt.2019.101607>
5. Matshitse, Refilwe; Managa, Muthumuni; Nyokong, Tebello
The modulation of the photophysical and photodynamic therapy activities of a phthalocyanine detonation nanodiamonds: Comparison with graphene quantum dots and carbon nanodots
Diamond and Related Materials (2020), 101, 107617 (1-10)
DOI:10.1016/j.diamond.2019.107617
<https://doi.org/10.1016/j.diamond.2019.107617>
6. Sekhosana, Kutloano Edward; Nyokong, Tebello
Double- and quintuple-decker phthalocyaninato chelates as optical limiters in solution and thin film
Dyes and Pigments (2020), 172, 107836 (1-9)
DOI:10.1016/j.dyepig.2019.107836
<https://doi.org/10.1016/j.dyepig.2019.107836>
7. Gao Ying-Hua; Li Man-Yi; Sajjad Faiza; Wang Jin-Hai; Meharban Faiza; Gadoora Malaz Abdelazeem; Yan Yi-Jia; Nyokong Tebello; Chen Zhi-Long
Synthesis and pharmacological evaluation of chlorin derivatives for photodynamic therapy of cholangiocarcinoma
European Journal of Medicinal Chemistry (2020), 189, 112049 (1-14)
DOI: 10.1016/j.ejmech.2020.112049
<https://doi.org/10.1016/j.ejmech.2020.112049>
8. Khoza Phindile; Ndhundhuma Ivy; Karsten Aletta; Nyokong Tebello

Photodynamic Therapy Activity of Phthalocyanine-Silver Nanoparticles on Melanoma Cancer Cells

Journal of Nanoscience and Nanotechnology (2020), 20, 1-8

DOI: 10.1166/jnn.2020.17398

<https://doi.org/10.1166/jnn.2020.17398>

9. Jones, Ben; Britton, Jonathan; Mafukidze, Donovan; Nyokong, Tebello

Photodegradation of 4-chlorophenol using Zn and In phthalocyanines substituted with pyrrole without hetero atoms linkers and supported on polyacrylonitrile electrospun fibres

Polyhedron (2020) 178, 114329 (1-8)

DOI:10.1016/j.poly.2019.114329

<https://doi.org/10.1016/j.poly.2019.114329>

10. Nqobile Njoko, Marcel Louzada, Jonathan Britton, Samson Khene, Tebello Nyokong and Philani Mashazi

Bioelectrocatalysis and surface analysis of gold coated with nickel oxide/hydroxide and glucose oxidase towards detection of glucose

Colloids and Surfaces B: Biointerfaces, (2020) 190, 110981 (1-7)

DOI: 10.1016/j.colsurfb.2020.110981

<https://doi.org/10.1016/j.colsurfb.2020.110981>

11. Mafukidze, Donovan M.; Nyokong, Tebello

Photodynamic antimicrobial chemotherapy of a dimethylamino-functionalized asymmetric zinc(II) phthalocyanine and its quaternized derivative against *Staphylococcus aureus* when supported on asymmetric polystyrene polymer membranes

Reactive & Functional Polymers (2020), 154, 104634 (1-11)

DOI:10.1016/j.reactfunctpolym.2020.104634

<https://doi.org/10.1016/j.reactfunctpolym.2020.104634>

12. Chindeka, Francis; Mashazi, Philani; Britton, Jonathan; Oluwole, David O.; Mapukata, Sivuyisiwe; Nyokong, Tebello

Fabrication of dye-sensitized solar cells based on push-pull asymmetrical substituted zinc and copper phthalocyanines and reduced graphene oxide nanosheets

Journal of Photochemistry and Photobiology, A: Chemistry (2020), 399, 112612 (1-9)

DOI:10.1016/j.jphotochem.2020.112612

<https://doi.org/10.1016/j.jphotochem.2020.112612>

13. Molupe, Nthabeleng; Babu, Balaji; Oluwole, David O.; Prinsloo, Earl; Gai, Lizhi; Shen, Zhen; Mack, John; Nyokong, Tebello

Photodynamic activity of 2,6-diiodo-3,5-dithienylvinyleneBODIPYs and their folate-functionalized chitosancoated Pluronic® F-127 micelles on MCF-7 breast cancer cells

Journal of Porphyrins and Phthalocyanines (2020), 24, 973-984

DOI:10.1142/s1088424619501773

<https://doi.org/10.1142/S1088424619501773>

14. Jankowski, Krzysztof; Ostafin, Agnes; Tomasik, Mikolaj; Nyokong, Tebello; Britton, Jonathan
Growth of centimeter scale carbon wires using in-liquid AC arc discharge

SN Applied Sciences (2020), 2, 1064 (1-6)

DOI:10.1007/s42452-020-2881-2

<https://link.springer.com/article/10.1007/s42452-020-2881-2>

15. Mpeta, Lekhetho S.; Sen, Pinar; Nyokong, Tebello

Development of manganese phthalocyanine decorated with silver nanoparticles nanocomposite for improved electrocatalytic oxidation of hydrazine

Journal of Electroanalytical Chemistry (2020), 866, 114173 (1-9)

DOI:10.1016/j.jelechem.2020.114173

<https://doi.org/10.1016/j.jelechem.2020.114173>

16. Makola, L. Collen; Managa, Muthumuni; Nyokong, Tebello

Enhancement of photodynamic antimicrobial therapy through the use of cationic indium porphyrin conjugated to Ag/CuFe₂O₄ nanoparticles

Photodiagnosis and Photodynamic Therapy (2020), 30, 101736 (1-12)

DOI:10.1016/j.pdpdt.2020.101736

<https://doi.org/10.1016/j.pdpdt.2020.101736>

17. Mpeta, Lekhetho S.; Sekhosana, Kutloano E.; Nyokong, Tebello

Nonlinear optical response and electrocatalytic activity of cobalt phthalocyanine clicked zinc oxide nanoparticles

Inorganica Chimica Acta (2020), 509, 119661 (1-9)

DOI:10.1016/j.ica.2020.119661

<https://doi.org/10.1016/j.ica.2020.119661>

18. Jones, Ben; Mafukidze, Donovan; Nyokong, Tebello

Fabrication of electrospun fibers from a porphyrin linked to polyacrylonitrile polymer for photocatalytic transformation of phenols

Journal of Molecular Structure (2020), 1213, 128191 (1-12)

DOI:10.1016/j.molstruc.2020.128191

<https://doi.org/10.1016/j.molstruc.2020.128191>

19. Sen, Pinar; Mpeta, Lekhetho S.; Mack, John; Nyokong, Tebello

New difluoroboron complexes based on N,O-chelated Schiff base ligands: Synthesis, characterization, DFT calculations and photophysical and electrochemical properties

Journal of Luminescence (2020), 224, 117262 (1-10)

DOI:10.1016/j.jlumin.2020.117262

<https://doi.org/10.1016/j.jlumin.2020.117262>

20. May, Aviwe; Majumdar, Poulomi; Martynov, Alexander G.; Lapkina, Lyudmila A.; Troyanov, Sergey I.; Gorbunova, Yulia G.; Tsivadze, Aslan Yu.; Mack, John; Nyokong, Tebello

Optical limiting properties, structure and simplified TD-DFT calculations of scandium tetra-15-crown-5 phthalocyaninates

Journal of Porphyrins and Phthalocyanines (2020), 24, 589-601

DOI:10.1142/S108842462050011X

<https://doi.org/10.1142/S108842462050011X>

21. Shabangu, Samuel M.; Babu, Balaji; Soy, Rodah C.; Managa, Muthumuni; Sekhosana, Kutloano E.; Nyokong, Tebello

Photodynamic antimicrobial chemotherapy of asymmetric porphyrin-silver conjugates towards photoinactivation of *Staphylococcus aureus*

Journal of Coordination Chemistry (2020), 73(4), 593-608

DOI:10.1080/00958972.2020.1739273

<https://doi.org/10.1080/00958972.2020.1739273>

22. Shabangu, Samuel M.; Babu, Balaji; Soy, Rodah C.; Oyim, James; Amuhaya, Edith; Nyokong, Tebello

Susceptibility of *Staphylococcus aureus* to porphyrin-silver nanoparticle mediated photodynamic antimicrobial chemotherapy

Journal of Luminescence (2020), 222, 117158 (1-9)

DOI:10.1016/j.jlumin.2020.117158

<https://doi.org/10.1016/j.jlumin.2020.117158>

23. Zhang, Xifeng; Wang, Yu; Zhu, Weihua; Mack, John; Soy, Rodah C.; Nyokong, Tebello; Liang, Xu

Meso- and axially-modified Ir^{III}triarylcorroles with tunable electrocatalytic properties

Dyes and Pigments (2020), 175, 108124 (1-7)

DOI:10.1016/j.dyepig.2019.108124

<https://doi.org/10.1016/j.dyepig.2019.108124>

24. Sen, Pinar; Akagunduz, Dilan; Aghdam, Araz Sheibani; Cebeci, Fevzi Cakmak; Nyokong, Tebello; Catal, Tunc

Synthesis of Novel Schiff Base Cobalt (II) and Iron (III) Complexes as Cathode Catalysts for Microbial Fuel Cell Applications

Journal of Inorganic and Organometallic Polymers and Materials (2020), 30, 1110-1120

DOI:10.1007/s10904-019-01286-x

<https://link.springer.com/article/10.1007/s10904-019-01286-x>

25. Banele Mike Motloung, Balaji Babu, EarlPrinsloo, Tebello Nyokong

The photophysical properties and photodynamic therapy activity of In and Zn phthalocyanines when incorporated into individual or mixed Pluronic[®] micelles

Polyhedron, (2020), 188, 114683 (1-9)

DOI: 10.1016/j.poly.2020.114683

<https://doi.org/10.1016/j.poly.2020.114683>

26. Sithi Mgidlana, Pinar Şen, Tebello Nyokong

Direct nonlinear optical absorption measurements of asymmetrical zinc(II) phthalocyanine when covalently linked to semiconductor quantum dots

Journal of Molecular Structure (2020), 1220, 128729 (1-12)

DOI: 10.1016/j.molstruc.2020.128729

<https://doi.org/10.1016/j.molstruc.2020.128729>

27. Managa, Muthumuni; Mgidlana, Sithi; Khene, Samson; Nyokong, Tebello

Optical limiting properties of indium 5,10,15,20-tetrakis(4-aminophenyl) porphyrin covalently linked to semiconductor quantum dots

Inorganica Chimica Acta (2020), 511, 119838 (1-7)

DOI:10.1016/j.ica.2020.119838

<https://doi.org/10.1016/j.ica.2020.119838>

28. S. Mapukata, A. S. Hainer, A. E. Lanterna, J. C. Scaiano, T. Nyokong

Decorated titania fibers as photocatalysts for hydrogen generation and organic matter degradation

Journal of Photochemistry & Photobiology A: Chemistry 388 (2020) 112185 (1-7)

DOI: 10.1016/j.jphotochem.2019.112185

<https://doi.org/10.1016/j.jphotochem.2019.112185>

29. Balaji Babu, Rodah C. Soy, John Mack and Tebello Nyokong

Non-aggregated lipophilic water-soluble tin porphyrins as photosensitizers for photodynamic therapy and photodynamic antimicrobial chemotherapy

New Journal of Chemistry 44 (2020) 11006-11012

DOI: 10.1039/D0NJ01564D

<https://pubs.rsc.org/en/content/articlehtml/2020/nj/d0nj01564d>

30. Babu, Balaji; Mack, John; Nyokong, Tebello

An octabrominated Sn(IV) tetraisopropylporphyrin as a photosensitizer dye for singlet oxygen

biomedical applications

Dalton Transactions (2020), 49, 9568-9573

DOI:10.1039/d0dt01915a

<https://pubs.rsc.org/en/content/articlelanding/2020/dt/d0dt01915a#!divAbstract>

31. Matshitse, Refilwe; Tshiwawa, Tendamudzimu; Managa, Muthumuni; Nwaji, Njemuwa; Lobb, Kevin; Nyokong, Tebello

Theoretical and photodynamic therapy characteristics of heteroatom doped detonation nanodiamonds linked to asymmetrical phthalocyanine for eradication of breast cancer cells

Journal of Luminescence (2020), 227, 117465 (1-15)

DOI:10.1016/j.jlumin.2020.117465

<https://doi.org/10.1016/j.jlumin.2020.117465>

32. Gugu Kubheka, John Mack, , Tebello Nyokong and Zhen Shen

NIR Absorbing AzaBODIPY Dyes for pH Sensing

Molecules 2020, 25, 3689 (1-14)

DOI: 10.3390/molecules25163689

<https://doi.org/10.3390/molecules25163689>

33. Zelda Neduvhuledza , Thabo Nkaki , Marcel Louzada , Tebello Nyokong , Samson Khene
Photophysical and nonlinear optical properties of the positional isomers of 4-(4-tertbutylphenoxy) substituted cobalt, nickel and copper phthalocyanines

Optical Materials 109 (2020) 110195 (1-10)

DOI: 10.1016/j.optmat.2020.110195

<https://doi.org/10.1016/j.optmat.2020.110195>

34. Sivuyisiwe Mapukata, Nnamdi Nwahara, Tebello Nyokong

The photodynamic antimicrobial chemotherapy of *Staphylococcus aureus* using an asymmetrical zinc phthalocyanine conjugated to silver and iron oxide based nanoparticles

Journal of Photochemistry and Photobiology A: Chemistry (2020) 402, 112813 (1-15)

DOI: 10.1016/j.jphotochem.2020.112813

<https://doi.org/10.1016/j.jphotochem.2020.112813>

35. Kutloano Edward Sekhosana, Reitumetse Nkhahle, Tebello Nyokong

Analytical Detection and Electrocatalysis of Paracetamol in Aqueous Media Using Rare-Earth Double-Decker Phthalocyaninato Chelates as Electrochemically Active Materials

ChemistrySelect (2020) 5, 9857–9865

DOI: 10.1002/slct.202002268

<https://doi.org/10.1002/slct.202002268>

36. Aviwe May, John Mack and Tebello Nyokong

Optical limiting properties of D- π -A BODIPY dyes in the presence and absence of methyl groups at the 1,7-positions

Journal of Porphyrins and Phthalocyanines (2020) 24, 1129-1137

DOI: 10.1142/S1088424620500315

<https://doi.org/10.1142/S1088424620500315>

37. Somila Dingiswayo, Balaji Babu, Earl Prinsloo, John Mack and Tebello Nyokong

A comparative study of the photophysicochemical and photodynamic activity properties of *meso*-4-methylthiophenyl functionalized Sn(IV) tetraarylporphyrins and triarylcorroles

Journal of Porphyrins and Phthalocyanines (2020) 24, 1138–1145

DOI: 10.1142/S1088424620500273

<https://doi.org/10.1142/S1088424620500273>

38. Wei Tang, Yuanyuan Qiu, Xiaonan Li, Rodah C. Soy, John Mack, Tebello Nyokong and Xu Liang

pH-Dependent Electrochemically Catalyzed Oxygen Reduction Behaviors of *o*-Substituted Co(III) Corroles

Macroheterocycles 2020 13 (2) 156-162

DOI: 10.6060/mhc200183I

<https://macroheterocycles.isuct.ru/en/mhc200183I>

39. 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 sulfone

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>

40. Mapukata, Sivuyisiwe; Nyokong, Tebello

Development of phthalocyanine functionalised TiO₂ and ZnO nanofibers for photodegradation of methyl orange

New Journal of Chemistry (2020) 44 16340-16350

DOI: 10.1039/D0NJ03326J

<https://doi.org/10.1039/D0NJ03326J>

41. Nnaemeka Nnaji, Njemuwa Nwaji, Tebello Nyokong

Electrodeposited Benzothiazole Phthalocyanines for Corrosion Inhibition of Aluminium in Acidic Medium

International Journal of Electrochemistry (2020) 2020, 8892559 (1-11)

DOI: 10.1155/2020/8892559

<https://doi.org/10.1155/2020/8892559>

42. Yolande Ikala Openda, Refilwe Matshitse and Tebello Nyokong

A search for enhanced photodynamic activity against *Staphylococcus aureus* planktonic cells and biofilms: the evaluation of phthalocyanine-detonation nanodiamonds-Ag nanoparticle nanoconjugates

Photochemical and Photobiological Sciences, 2020, 19, 1442 – 1454

DOI: 10.1039/d0pp00075b

<https://doi.org/10.1039/D0PP00075B>

43. Nyokong, Tebello

A career in photophysicochemical and electrochemical properties of phthalocyanine (a Linstead Career Award paper)

Journal of Porphyrins and Phthalocyanines (2020), 24, 1300-1319

DOI:10.1142/s1088424620300037

<https://doi.org/10.1142/S1088424620300037>

44. Yolande Ikala Openda, Tebello Nyokong

Detonation nanodiamonds-phthalocyanine photosensitizers with enhanced photophysicochemical properties and effective photoantibacterial activity

Photodiagnosis and Photodynamic Therapy, (2020), 32, 102072 (1-11)

DOI: 10.1016/j.pdpdt.2020.102072

<https://doi.org/10.1016/j.pdpdt.2020.102072>

45. Babu, Balaji; Mack, John; Nyokong, Tebello

Sn(IV) N-confused porphyrins as photosensitizer dyes for photodynamic therapy in the near IR region

Dalton Transactions, 2020, 49, 15180 – 15183

DOI: 10.1039/D0DT03296D

<https://doi.org/10.1039/D0DT03296D>

46. Mpeta, Lekhetho S.; Sen, Pinar; Nyokong, Tebello

The Effects of Asymmetry in Combination with Reduced Graphene Oxide Nanosheets on Hydrazine Electrocatalytic Detection on Cobalt Phthalocyanines

Electroanalysis (2020), 32, 2723–2732

DOI: 10.1002/elan.202060094

<https://doi.org/10.1002/elan.202060094>

47. Erem Ahmetali, Pinar Sen, N. Ceren Süer, Burak Aksu, Tebello Nyokong,

Tarik Eren, and M. Kasım Şener

Enhanced Light-Driven Antimicrobial Activity of Cationic Poly(oxanorbornene)s by Phthalocyanine Incorporation into Polymer as Pendants

Macromolecular Chemistry and Physics (2020) 221, 2000386 (1-14)

DOI: 10.1002/macp.202000386

<https://doi.org/10.1002/macp.202000386>