

**PEER-REVIEWED PUBLICATIONS (most recent of 128 publications listed first)**

1. "The effect of counterions on the detection of Cu<sup>2+</sup> ions in aqueous solutions using quartz tuning fork (QTF) sensors modified with L-cysteine self-assembled monolayers: Experimental and quantum chemical DFT study." Rahman, S. \*; Al-Gawati, M.A.; Alfaifi, F.S.; Muthuramamoorthy, M.; Alanazi, A.F.; Albrithen, H.; Alzahrani, K.E.; Assaifan, A.K.; Alodhayb, A.N.\*; Georghiou, P.E.\* *Chemosensors* 11, 882023 (2023).
2. "Acid-catalysed cyclization of o-aminobenzamide with  $\alpha$ -oxodithioesters: A divergent and regioselective synthesis of quinazolinones and 1,3-benzothiazinones." Kiran, K.R.; Swaroop, T.R.\*; Preetham, R.; Georghiou, P.E.\*; Rangappa, K.S.\*; Sadashiva, M.P. *ChemistrySelect*, 8, e202203618 (2023).
3. "Carboxymethyl chitin and chitosan derivatives: Synthesis, characterization and antibacterial activity." Islam, M.M; Islam, R.; Hassan, S.M.M.; Karim, M.R.; Rahman, M.M.; Rahman, S.; Hossain, M.N.; Islam,D.; Shaikh, M.A.A.; Georghiou, P.E. *Carbohydr. Polym. Tech. Appl.* 5, 100283 (2023).
4. "Alcohol-based hand sanitizers amid COVID-19: Chemical formulation, analysis, safety"- Islam, M.M; Ahmed, K.S.; Karim, M.R.; Nath, B.D.; Moulick, S.P.; Islam, R.; Hassan, S.M.M.; Hossain, M.H.; Moniruzzaman, M.; Jahan, M.S.; Shaikh, M.A.A.; Georghiou, P.E. *ChemistrySelect*, 7, e202203290, (2022).
5. "Detection of volatile alcohol vapors using PMMA-coated micromechanical sensors: Experimental and quantum chemical DFT analysis." Alsaigh, R.; Rahman, S.; .Alfaifi, N F.S.; Al-Gawati, M.A.; Shalla, Alzaid F.; Alanazi, A.F.; Albrithen, H.; Alzahrani, K.E.; Assaifan, A.K.; Alodhayb, N.N.; Georghiou, P.E. \* *Chemosensors* 10, 452. (2022).
6. "Synthesis and DFT conformational analysis of trimethyl-functionalized [2.2] metacyclophanes and their Lewis-acid assisted reactions"- Islam, M.M.; Wang, C.Z.; Sharma, B.; Rahman, S.; Georghiou, P.E.; Alodhayb. A. *J. Mol. Struct.* 1266, 133523, (2022).
7. "Inclusion of a phytomedicinal flavonoid in biocompatible surface-Modified Chylomicron Mimic Nanovesicles with Improved Oral Bioavailability and Virucidal Activity: Molecular Modeling and Pharmacodynamic Studies"- Zakaria, M.Y.; Georghiou, P.E.; Banoub, J.H.; Beshay, B.Y. *Pharmaceutics* 14(5), 905, (2022).
8. "Recent progress in metal incorporated acyclic Schiff Base derivatives: Biological aspects" Nath, B.D.; Islam, M.M.; Karim, M.R.; Rahman, S.; Shaikh, M.A.A.; Georghiou, P.E. *ChemistrySelect* 7(14), e202104290, (2022).
9. "Substituent effects on the intermolecular interactions and emission behaviors in pyrene-based mechanochromic luminogens" Yu, Z.D.; Dong, X.X.; Cao, J.Y.; Zhao, W.X.; Bi, G.H.; Wang, C.Z.; Zhang, T.; Rahman, S.; Georghiou, P.E.; Lin, J.-B.; Yamato, T. *J. Materials Chem. C.* 10(24), 9310-9318, (2022).
10. "Development of calix [4] arenes modified at their narrow-and wider-rims as potential metal ions sensor layers for microcantilever sensors: further studies"- Georghiou, P.E.; Rahman, S.; Assiri, Y.; Valluru, G.; Menelaou, M.; Valluru, G.; Braim, M.; Beaulieu, L. *Can. J. Chem.* 100: 144–149 (2022) [dx.doi.org/10.1139/cjc-2021-0119](https://doi.org/10.1139/cjc-2021-0119).
11. "Allosteric binding properties of a 1,3-alternate thiacalix[4]arene-based receptor having 1,3-phenylthiolurea and 2-pyridylmethyl moieties on opposite faces" – Rahman, S.; Tomiyasu, H.; Wang, C.-Z.; Georghiou, P.E.; Alodhayb, A.; Carpenter-Warren, C. L.; Elsegood, M.R.J.; Teat, S. J.; Redshaw, C.; Yamato, T. *New. J. Chem.* 45, 19235-19243 (2021).
12. "A novel small molecule inhibits Hepatitis C virus propagation in cell culture" –. Oraby, A.K.; Gardner, C.L.; Needle, R.F.; Kofahi, H.M.; Everard, K.R.; Taylor, N.G.A.; Rutihinda, S.G.; Barry, J.P.; Hirasawa, K.; Georghiou, P.E.; Russell, R.S. *Microbiol. Spectr.* 9:e00439-21, (2021). <https://doi.org/10.1128/Spectrum.00439-21>.
13. "Design and synthesis of 2-Substituted-4-benzyl-5-methylimidazoles as new potential Anti-breast cancer agents to inhibit oncogenic STAT3 functions" –.Beshay, B.Y.; Abdellatef, A.A.; Loksha, Y.M.; Fahmy,

- S.M.; Habib, N.S.; Bekhit, A.E.; Georghiou, P.E.; Hayakawa, Y.; Bekhit, A.A. *Bioorg. Chem.* **113**,105033, (2021).
14. "Synthesis, structures and DFT calculations of 9-methoxy[3.3]metaparacyclophanes and their Lewis acid-catalyzed reactivity" – Islam M. M.; Sharma, B.; Rahman, S.; Alodhayb, A.; Georghiou, P. E.; Yamato, T. *J. Mol. Struct.* 1236, 130334, (2021).
  15. "Demystifying and unravelling the molecular structure of the biopolymer Sporopollenin"– Mikhael, A.; Jurcic, K.; Schneider, C.; Karr, D.; Fisher, G.L.; Fridgen, T.D.; Diego-Taboada, A.; Georghiou, P.E.; Mackenzie, G; Banoub, J. *Rapid Commun. Mass Spect.* **34**:e8740, (2020).
  16. "Calix[3]arene-analogous metacyclophanes: Synthesis, structures and properties with infinite potential" – Islam M. M.\*; Georghiou, P. E.\*; Rahman, S.; Yamato, T. *Molecules* **25**, 4202-4221, (2020).
  17. "Synthesis and structures of [2.n]metacyclophan-1-enes and their conversion to highly strained [2.n]metacyclophane-1-yne" – Akther, T.; Islam, M. M.; Kowser, Z.; Matsumoto, T.; Tanaka, J.; Rahman, S.; Alodhayb, A.; Georghiou, P. E.; Redshaw, C.; Yamato, T. *Eur. J. Org. Chem.* 4167–4175, (2020).
  18. "Synthesis, supramolecular complexation and DFT studies of a bis(pyrene)-appended 'capped' triazole-linked calix[4]arene as Zn<sup>2+</sup> and Cd<sup>2+</sup> fluorescent chemosensors" – Georghiou, P.E.\* Rahman, S.; Alrawashdeh, A.; Alodhayb, A.; Valluru, G.; Unikela, K.S.; Bodwell, G.J. *Supramol. Chem.* **32**, 325–333, (2020).
  19. "The reaction of arylmethyl isocyanides and arylmethylamines with xanthate esters: a facile and unexpected synthesis of carbamothioates" – Narasimhamurthy, R.; Swaroop T.R.; Alrawashdeh, A.I.; Rahman, S.; Alodhayb, A.; Anil, S.M.; Kiran, K.R.; Chandra; Georghiou, P.E.; Rangappa, K.S.; Sadashiva, M.P. *Beilstein J. Org. Chem.* **16**, 159–167, (2020).
  20. "Studies on Lewis-Acid induced reactions of 8-methoxy[2.2]-metacyclophanes: A new synthetic route to alkylated pyrenes." – Islam, Md. M.; Feng, X.; Wang, C.-Z.; Rahman, S.; Alodhayb, A.; Georghiou, P.E.; Matsumoto, T.; Tanaka, J.; Redshaw, C.; Yamato, T. *ChemistrySelect*, **5**, 1269 –1274, (2020).
  21. "Synthesis, structures and Lewis-acid-induced isomerization of 8-methoxy[2.2]-metaparacyclophanes and a DFT study." – Islam, Md. M.; Feng, X.; Rahman, S.; Georghiou, P.E.; Matsumoto, T.; Tanaka, J.; Alodhayb, A.; Redshaw, C.; Yamato, T. *ChemistrySelect*, **4**, 3630-3635. (2019)
  22. "Calixazulenes: azulene-based calixarene analogues - an overview and recent supramolecular complexation studies" – Georghiou, P.E.\*; Rahman, S.; Alodhayb, A.; Nishimura, H.; Lee, J.; Wakamiya, A. ; Scott, L.T. *Beilstein J. Org. Chem.*, **14**, 2488-2494, (2018).
  23. "New aryl-substituted 2,2'-bithiophenes: synthesis, optoelectronic properties and DFT studies" – Swaroop, T.R.; Tabasi, Z.A.; Zhao, Y.\*; Georghiou, P.E. \* *ChemistrySelect*, **3**, 9700-9707, (2018).
  24. "Synthesis of 2-aryl- and 2-haloarylbenzimidazole-N1-acetamido conjugates and a preliminary evaluation of their antifungal properties" – Abdel-Wahab, S.; Abdelsamii, Z.K.; Abdel-Fattah, H.A.; El-Etrawy, A.S.; Dawe, L.N.; Swaroop, T.R.; Georghiou, P.E.\* *ChemistrySelect*, **3**, 8106–8110, (2018).
  25. "2,4-Disubstituted phenylhydrazonopyrazolone and isoxazolone derivatives as antibacterial agents: Synthesis, preliminary biological evaluation and docking studies" – Oraby, A.K.\*; Abdellatif, R.A.; Abdelgawad, M.A.; Attia, K.M.; Dawe, L.N.; Georghiou, P.E.\* *ChemistrySelect*, **3**, 3295–3301, (2018).
  26. "A hexahomotrioxacalix[3]arene-based ditopic receptor for alkylammonium ions controlled by Ag<sup>+</sup> ions" – Jiang, X.-K.; Ikejiri, Y.; Wu, C.; Rahman, S.; Georghiou, P.E.; Zeng, X.; Elsegood, M.R.J.; Redshaw, C.; Teat, S.J.; Yamato T\*. *Molecules*. **23**: 467-480. (2018).
  27. "Synthesis, structures and DFT computational studies of [3.1.1]metacyclophanes containing benzofuran rings" – Islam, M.M.; Wang, C.-Z.; Feng, X.; Rahman, S.; Georghiou, P.E.; Alodhayb, A.; Yamato, T. *ChemistrySelect*, **3**, 13542-13547, (2018).
  28. "Optimizing reductive degradation of PAHs using anhydrous ethanol with magnesium catalyzed by glacial

- acetic acid” – Al-Shra’ah, A.; Georghiou, P.E.; Helleur, R.; MacQuarrie, S. L.; Zhao, Y.; Mkandawire, M. *ACS Omega*, 3, 3554–3561, (2018).
29. “Mechanochemically-generated solid state complex of C<sub>60</sub>-fullerene with tetra-(5,7-diphenyl)calix[4]azulene, NMR, XRD and DFT studies” – Schneider, C.; Nishimura, H.; Lee, J.; Scott, L.T.; Wakamiya, A.; Forbes, R.; Georghiou, P.E.\* *Supramol. Chem.* 30, 575–582, (2018).
30. “Hydrometallurgical removal of cobalt, molybdenum, and nickel from solid waste spent hydroprocessing catalysts” - Shafiei Zadeh, S., Georghiou, P.E., Hassan Nejad, H. *J. Solid Waste Tech. Manag.* 44, 112-128, (2018).
31. “Synthesis and conformations of [2.n]metacyclophan-1-ene epoxides and their conversion to [n.1]metacyclophanes” - Akther, T.; Islam, M.M.; Rahman, S.; Georghiou, P.E.; Matsumoto, T.; Tanaka, J.; Redshaw, C.; Yamato, T. *Org. Biomol. Chem.*, 15, 3519-3527, (2017).
32. “Synthesis, complexation and DFT computational studies of bis(naphthyl)methane-”capped” triazole-linked calix[4]arenes as Fe<sup>3+</sup> fluorescent chemosensors” - Aljabri, M.D.; Rahman, S.; Georghiou, P.E.\* *ChemistrySelect*, 2, 1214-1218, (2017).
33. “A fluorescence ‘turn-on’ sensor for multiple analytes: OAc<sup>-</sup> and F<sup>-</sup>-triggered fluorogenic detection of Zn<sup>2+</sup> in a co-operative fashion”- Kowser, Z.; Rayhan, U.; Rahman, S.; Georghiou, P.E.; Yamato, T. \* *Tetrahedron*, 73(36), 5418-5424, (2017).
34. “Synthesis, structures and conformational studies of 1,2-dimethyl[2.10]metacyclophan-1-enes” – Akther, T.; Islam, Md.M.; Kowser, Z.; Rahman, S.; Georghiou, P.E.; Thuéry, P.; Matsumoto, T.; Tanaka, J.; Feng, X.; Redshaw, C.; Yamato, T. *ChemistrySelect.*, 1, 3594-3600, (2016).
35. “A study of anion binding behaviour of 1,3-alternate thiacalix[4]arene-based receptors bearing urea moieties”- Rahman, S.; Tomiyasu, H.; Kawazoe, H.; Zhao, J.-L.; Cong, H.; Ni, X.-L.; Zeng, X.; Elsegood, M.R.J.; Warwick, T. G.; Teat, S.J.; Redshaw, C.; Georghiou, P.E.; Yamato, T.\* *New J. Chem.* 40(11), 9245-9251, (2016).
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37. “Thiacalix[4]arene derivatives bearing imidazole units: a ditopic hard/soft receptor for Na<sup>+</sup>/Ag<sup>+</sup> and K<sup>+</sup>/Ag<sup>+</sup> with an allosteric effect and a reusable extractant for dichromate anions” – Zhao, J.-L.; Wu, C.; Zeng, X.; Rahman, S.; Georghiou, P.E.; Elsegood, M.R.J.; Warwick, T.G.; Redshaw C.; Teat, S.J.; Yamato, T.\* *ChemistrySelect* 1(8), 1541–1547, (2016).
38. “Halide ion effect on the <sup>1</sup>H NMR chemical shifts of the residual protons in commonly employed deuterated solvents with tetra-*n*-butylammonium chloride - Part 2.” – Assiri, Y.; Rahman, S.; Georghiou, P.E.\* *Supramol. Chem.*, 28(1-2), 6-9, (2016).
39. “Synthesis and antimicrobial evaluation of selected new benzimidazole-acetamido conjugates” – Abdel-Wahab, S.M.; Abdelsamii, Z.K.; Abdel-Fattah, H.A.; El-Etrawy, A.S.; Georghiou, P.E.\* *Int. J. Pharm. Chem.* 6(6), 149-159, (2016).
40. “Synthesis, structural properties, electrophilic substitution reactions and DFT computational studies of calix[3]benzofurans” – Islam, M.M.; Akther, T.; Ikejiri, Y.; Matsumoto, T.; Tanaka, J.; Rahman, S.; Georghiou, P.E.; Hughes, D.L.; Redshaw, C.; Yamato, T.\* *RSC Adv.* 6, 50808–50817, (2016).
41. “A 16-microcantilever array sensing system for the rapid and simultaneous detection of analyte” – Alodhayb, A.; Saydur Rahman, S.M.; Rahman, S.; Georghiou, P.E.\*; Beaulieu, L.Y.\* *Sensors and Actuators B*, 237, 459–469, (2016).
42. “Mechanochemical formation of a 1:1 C<sub>60</sub>:*tert*-butylcalix[4]azulene supramolecular complex: solid-state NMR and DFT computational studies” – Georghiou, P.E.\*; Schneider, C.; Shamov, G.; Lash, T.D.; Rahman, S.; Giddings, D.S. *Supramol. Chem. Canadian* 28, 396-402, (2016).

43. "Metal ion binding properties of a bimodal triazolyl-functionalized calix[4]arene on a multi-array microcantilever system. Synthesis, fluorescence and DFT computation studies" – Alodhayb, A.N.; Braim, M.; Beaulieu, L.Y.; Valluru, G.; Rahman, R.; Oraby, A.K.; Georghiou, P.E.\* *RSC Adv.*, 6, 4387-4396, and 9436-9436, (2016).
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45. "Fluorescent turn-on sensors based on pyrene-containing Schiff base derivatives for Cu<sup>2+</sup> recognition: spectroscopic and DFT computational studies" – Kowser, Z.; Jin, C.-C.; Jiang, X.; Rahman, S.; Georghiou, P.E.; Ni, X.-L.; Zeng, X.; Redshaw, C.; Yamato, T.\* *Tetrahedron*, 72(30), 4575-4581, (2016).
46. "The first study about the relationship between the extractability of thiacalix[4]arene derivatives and the position of the coordination binding sites" – Zhao, J.-L.; Tomiyasu, H.; Ni, X.-L.; Zeng, X.; Elsegood, M.R.J.; Redshaw, C.; Rahman, S.; Georghiou, P.E.; Teat, S.J.; Yamato, T.\* *Org. Biomol. Chem.* 13, 3476-3483, (2015).
47. "Synthesis, crystal structure and complexation behaviour study of an efficient Cu<sup>2+</sup> ratiometric fluorescent chemosensor based on thiacalix[4]arene" – Zhao, J.-L.; Tomiyasu, H.; Wu, C.; Xi, H.; Zeng, C.; Rahman, S.; Georghiou, P.E.; Hughes, D.L.; Redshaw, C.; Yamato, T. *Tetrahedron* 71, 8521-8527, (2015).
48. "Synthesis and conformational studies of chiral macrocyclic [1.1.1]metacyclophanes containing benzofuran rings" – Islam, M.M.; Tomiyasu, H.; Matsumoto, T.; Tanaka, J.; Rahman, S.; Georghiou, P.E.; Redshaw, C.; Yamato, T. *Org. Biomol. Chem.* 13, 9055-9064, (2015)
49. "Supramolecular host-guest complexation of Lash's calix[4]azulene with tetraalkylammonium halides and tetrafluoroborate salts: binding and DFT computational studies" - Rahman, S.; Zein, A.L.; Dawe, L.N.; Shamov, G.; Thordarson, P.; Georghiou, P. E.\* *RSC Adv.* 5, 54848-54852, (2015).
50. "Synthesis, crystal structure and complexation behaviour study of an efficient Cu<sup>2+</sup> ratiometric fluorescent chemosensor based on thiacalix[4]arene" – Zhao, J.-L.; Tomiyasu, H.; Wu, C.; Xi, H.; Zeng, C.; Rahman, S.; Georghiou, P.E.; Hughes, D.L.; Redshaw, C.; Yamato, T. *Tetrahedron* 71, 8521-8527, (2015).
51. "Synthesis and evaluation of a novel ionophore based on a thiacalix[4]arene derivative bearing imidazole units" – Zhao, J.-L.; Tomiyasu, H.; Ni, X.-L.; Zeng, X.; Elsegood, M.R.J.; Redshaw, C.; Rahman, S.; Georghiou, P.E.; Yamato, T.\* *New J. Chem.* 38, 6041-6049, (2014).
52. "Dispersion of single-walled carbon nanotubes into aqueous solutions using Poh's cyclotetrachromotropyrene (CTCT)" – Georghiou, P.E.\*; Valluru, G.K.; Schneider, C.; Liang, S.; Woolridge, K.; Mulla, K.; Adronov, A.; Zhao Y. \* *RSC Advances* 4, 31614-31617, (2014).
53. "Synthesis of a cone-conformer bimodal calix[4]arene-crown-5 which forms a sensitive cesium ion sensing layer on gold-coated microcantilevers" – Georghiou, P.E.\*; Beaulieu, L.Y.; Dawe, L.N.; Rahman, S.; Valluru, G.; Alodhayb, A.N. *New J. Chem.* 38, 5868-5872, (2014).
54. "The thyroxine-containing thyroglobulin peptide (aa 2549-2560) is a target epitope in iodide-accelerated spontaneous autoimmune thyroiditis" – Kolypetri, P.; Carayanniotis K.; Rahman, S.; Georghiou, P.E.; Magafa, V.; Cordopatis, P.; Carayanniotis, G.\* *J. Immunol.* 2014, 193(1): 96-101, (2014).
55. "Detection of Calcium Ions Using Gold-coated Micro-Cantilever Sensors using Upper- and Lower-rim Functionalized Calix[4]arenes" – Alodhayb, A.; Rahman, S.M.S.; Rahman, S.; Valluru, G.K.; Georghiou, P.E.\*; Beaulieu, L.Y.\* – *Sens. Actuators B*, 203, 766-773, (2014).
56. "Molecular recognition of nucleobases and amino acids by sulphonato-calixnaphthalene-capped silver nanoparticles" .– Valluru, G. K.; Georghiou, P.E.\*; Sleem, H.F.; Perret, F.; Montasser, I.; Grandvoinet, A.; Brolles, L.; Coleman, A.W.\* – *Supramol. Chem.* 26, (7-8), 561-568, (2014).; See Corrigendum: *Supramol. Chem.* 27, 565, (2015)
57. "Halide ion effect on the chloroform chemical shift in supramolecular complexation studies with tetra-*n*-

- butylammonium salts: a  $^1\text{H}$  NMR and X-ray study” – Sleem, H.F.; Dawe, L.N.; Rahman, S.; Georghiou, P.E.\* *Supramol. Chem.* 26, (7-8), 579-582, (2014).
58. “Synthesis and complexation of a “mixed”-pyridine-naphthalene homooxalixarene” - AlHujran, T.A.; Rahman, S.; Dawe, L.N.; Georghiou, P.E.\* *Supramol. Chem.* 26, (7-8), 500-505, (2014)
59. “Synthesis of macrocyclic chromotropic acid-based sulfonamides; their complexation properties and an unexpected photochemical reaction” – Sleem, H.F.; Dawe, L.N.; Georghiou, P.E.\* *Tetrahedron Lett.* 54, 3444-3448 (2013).
60. “Synthesis of an upper- and lower-rim functionalized calix[4]arene for detecting calcium ions using a microcantilever sensor” – Georghiou, P.E.; Rahman, S.; Valluru, G.; Dawe, L.N.; Rahman, S.M.S.; Alodhayb, A.N.; Beaulieu, L.Y. *New J. Chem.* 37, 1298-1301, (2013).
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66. “Corannulene and its penta-*tert*-butyl derivative co-crystallize 1:1 with pristine  $\text{C}_{60}$ -fullerene” – Dawe, L.N. \*; AlHujran, T.A.; Tran, H.-A.; Mercer, J.I.; Jackson, E.A.; Scott, L.T.; Georghiou, P.E.\* *Chem. Commun.* 48, 5563-5565, (2012).
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