

REFERENCES

- Alfred Treibs, von, & Kreuzer, F.-H. (1968). Difluorboryl-Komplexe von Di-und Tripyrrylmethenen. In *Liebigs Ann. Chem* (Vol. 718).
- Begum, H. M., & Shen, K. (2023). Intracellular and microenvironmental regulation of mitochondrial membrane potential in cancer cells. In *WIREs Mechanisms of Disease* (Vol. 15, Issue 3). John Wiley and Sons Inc. <https://doi.org/10.1002/wsbm.1595>
- Berberan-Santos, M. N., & Baleizao, C. (2012). Fluorescence Sensing of Temperature and Oxygen with Fullerenes. *Molecules at Work: Selfassembly, Nanomaterials, Molecular Machinery*, 285–313.
- Boens, N., Verbelen, B., & Dehaen, W. (2015). Postfunctionalization of the BODIPY Core: Synthesis and Spectroscopy. *European Journal of Organic Chemistry*, 2015(30), 6577–6595. <https://doi.org/https://doi.org/10.1002/ejoc.201500682>
- Brynda, M. (2005). Towards “user-friendly” heavier primary pnictanes: Recent developments in the chemistry of primary phosphines, arsines and stibines. *Coordination Chemistry Reviews*, 249(19), 2013–2034. <https://doi.org/https://doi.org/10.1016/j.ccr.2005.03.007>
- Bumagina, N. A., Antina, E. V, Ksenofontov, A. A., Antina, L. A., Kalyagin, A. A., & Berezin, M. B. (2022). Basic structural modifications for improving the practical properties of BODIPY. *Coordination Chemistry Reviews*, 469, 214684.
- Burke, B. P., Clemente, G. S., & Archibald, S. J. (2015). Boron-18F containing positron emission tomography radiotracers: advances and opportunities. *Contrast Media & Molecular Imaging*, 10(2), 96–110. <https://doi.org/https://doi.org/10.1002/cmmi.1615>
- Byrne, A., Cullinane, D., Gkika, K. S., Burke, C. S., & Keyes, T. E. (2022). Luminescent Metal Complexes in Bioimaging. In *Springer Handbook of Inorganic Photochemistry* (pp. 1073–1107). Springer.
- Chen, L., Chen, X., Yang, X., He, C., Wang, M., Xi, P., & Gao, J. (2020). Advances of super-resolution fluorescence polarization microscopy and its applications in life sciences. *Computational and Structural Biotechnology Journal*, 18, 2209–2216. <https://doi.org/https://doi.org/10.1016/j.csbj.2020.06.038>

- Coogan, M. P., & Fernández-Moreira, V. (2014). Progress with, and prospects for, metal complexes in cell imaging. *Chemical Communications*, 50(4), 384–399.
- Davies, L. H., Harrington, R. W., Clegg, W., & Higham, L. J. (2014). BR2BodPR2: Highly fluorescent alternatives to PPh₃ and PhPCy₂. *Dalton Transactions*, 43(36), 13485–13499. <https://doi.org/10.1039/c4dt00704b>
- Davies, L. H., Kasten, B. B., Benny, P. D., Arrowsmith, R. L., Ge, H., Pascu, S. I., Botchway, S. W., Clegg, W., Harrington, R. W., & Higham, L. J. (2014). Re and ^{99m}Tc complexes of BodP3 – multi-modality imaging probes. *Chemical Communications*, 50(98), 15503–15505. <https://doi.org/10.1039/c4cc06367h>
- Davies, L. H., Stewart, B., Harrington, R. W., Clegg, W., & Higham, L. J. (2012). Air-stable, highly fluorescent primary phosphanes. *Angewandte Chemie - International Edition*, 51(20), 4921–4924. <https://doi.org/10.1002/anie.201108416>
- Ferraro, M. G., Piccolo, M., Misso, G., Maione, F., Montesarchio, D., Caraglia, M., Paduano, L., Santamaria, R., & Irace, C. (2020). Breast cancer chemotherapeutic options: A general overview on the preclinical validation of a multi-target Ruthenium (III) complex lodged in nucleolipid nanosystems. *Cells*, 9(6), 1412.
- Gao, P., Pan, W., Li, N., & Tang, B. (2019). Fluorescent probes for organelle-targeted bioactive species imaging. In *Chemical Science* (Vol. 10, Issue 24, pp. 6035–6071). Royal Society of Chemistry. <https://doi.org/10.1039/c9sc01652j>
- Hiney, R. M., Higham, L. J., Müller-Bunz, H., & Gilheany, D. G. (2006). Taming a Functional Group: Creating Air-Stable, Chiral Primary Phosphanes. *Angewandte Chemie*, 118(43), 7406–7409. <https://doi.org/10.1002/ange.200602143>
- Huang, W., Tian, X., Jiao, H., Jackstell, R., & Beller, M. (2022). Iridium-Catalyzed Domino Hydroformylation/Hydrogenation of Olefins to Alcohols: Synergy of Two Ligands. *Chemistry - A European Journal*, 28(9). <https://doi.org/10.1002/chem.202104012>
- Hussain, S., Mubeen, I., Ullah, N., Shah, S. S. U. D., Khan, B. A., Zahoor, M., Ullah, R., Khan, F. A., & Sultan, M. A. (2022). Modern Diagnostic Imaging Technique Applications and Risk Factors in the Medical Field: A Review. In

BioMed Research International (Vol. 2022). Hindawi Limited.
<https://doi.org/10.1155/2022/5164970>

- Lakowicz, J. R. (2006). *Principles of fluorescence spectroscopy*. Springer.
- Li, F. Z., Wu, Z., Lin, C., Wang, Q., & Kuang, G. C. (2022a). Photophysical properties regulation and applications of BODIPY-based derivatives with electron donor-acceptor system. *Results in Chemistry*, 4. <https://doi.org/10.1016/j.rechem.2022.100384>
- Li, F. Z., Wu, Z., Lin, C., Wang, Q., & Kuang, G. C. (2022b). Photophysical properties regulation and applications of BODIPY-based derivatives with electron donor-acceptor system. *Results in Chemistry*, 4. <https://doi.org/10.1016/j.rechem.2022.100384>
- Li, F.-Z., Wu, Z., Lin, C., Wang, Q., & Kuang, G.-C. (2022). Photophysical properties regulation and applications of BODIPY-based derivatives with electron donor-acceptor system. *Results in Chemistry*, 4, 100384.
- Linden, G., Zhang, L., Pieck, F., Linne, U., Kosenkov, D., Tonner, R., & Vazquez, O. (2019). Conditional singlet oxygen generation through a bioorthogonal DNA-targeted tetrazine reaction. *Angewandte Chemie International Edition*, 58(37), 12868–12873.
- Logan, A., Pell, V. R., Shaffer, K. J., Evans, C., Stanley, N. J., Robb, E. L., Prime, T. A., Chouchani, E. T., Cochemé, H. M., Fearnley, I. M., Vidoni, S., James, A. M., Porteous, C. M., Partridge, L., Krieg, T., Smith, R. A. J., & Murphy, M. P. (2016). Assessing the Mitochondrial Membrane Potential in Cells and In Vivo using Targeted Click Chemistry and Mass Spectrometry. *Cell Metabolism*, 23(2), 379–385. <https://doi.org/https://doi.org/10.1016/j.cmet.2015.11.014>
- Monsalves-Alvarez, M., Morales, P. E., Castro-Sepulveda, M., Sepulveda, C., Rodriguez, J. M., Chiong, M., Eisner, V., Lavandero, S., & Troncoso, R. (2020). β -Hydroxybutyrate Increases Exercise Capacity Associated with Changes in Mitochondrial Function in Skeletal Muscle. *Nutrients*, 12(7), 1–18. <https://doi.org/10.3390/nu12071930>
- Myers, K. A., & Janetopoulos, C. (2016). Recent advances in imaging subcellular processes. *F1000Research*, 5, F1000-Faculty.

- Neikirk, K., Marshall, A. G., Kula, B., Smith, N., LeBlanc, S., & Hinton Jr, A. (2023). MitoTracker: A useful tool in need of better alternatives. *European Journal of Cell Biology*, 102(4), 151371.
- Nigam, S., Burke, B. P., Davies, L. H., Domarkas, J., Wallis, J. F., Waddell, P. G., Waby, J. S., Benoit, D. M., Seymour, A. M., Cawthorne, C., Higham, L. J., & Archibald, S. J. (2016). Structurally optimised BODIPY derivatives for imaging of mitochondrial dysfunction in cancer and heart cells. *Chemical Communications*, 52(44), 7114–7117. <https://doi.org/10.1039/c5cc08325g>
- Orte, A., Debroye, E., Ruedas-Rama, M. J., Garcia-Fernandez, E., Robinson, D., Crovetto, L., Talavera, E. M., Alvarez-Pez, J. M., Leen, V., Verbelen, B., Cunha Dias de Rezende, L., Dehaen, W., Hofkens, J., Van der Auweraer, M., & Boens, N. (2016). Effect of the substitution position (2, 3 or 8) on the spectroscopic and photophysical properties of BODIPY dyes with a phenyl, styryl or phenylethynyl group. *RSC Advances*, 6(105), 102899–102913. <https://doi.org/10.1039/C6RA22340K>
- Qin, Y., Liu, X., Jia, P.-P., Xu, L., & Yang, H.-B. (2020). BODIPY-based macrocycles. *Chemical Society Reviews*, 49(16), 5678–5703.
- schlemmer-et-al-2017-global-challenges-for-cancer-imaging*. (n.d.).
- Srinivasan, S., Guha, M., Kashina, A., & Avadhani, N. G. (2017). Mitochondrial dysfunction and mitochondrial dynamics-The cancer connection. *Biochimica et Biophysica Acta (BBA)-Bioenergetics*, 1858(8), 602–614.
- Stewart, B., Harriman, A., & Higham, L. J. (2011). Predicting the air stability of phosphines. *Organometallics*, 30(20), 5338–5343. <https://doi.org/10.1021/om200070a>
- Sun, X., Jiang, Q., Zhang, Y., Su, J., Liu, W., Lv, J., Yang, F., & Shu, W. (2024). Advances in fluorescent probe development for bioimaging of potential Parkinson's biomarkers. *European Journal of Medicinal Chemistry*, 267, 116195. <https://doi.org/https://doi.org/10.1016/j.ejmech.2024.116195>
- Valeur, B., & Leray, I. (2000). Design principles of fluorescent molecular sensors for cation recognition. *Coordination Chemistry Reviews*, 205(1), 3–40. [https://doi.org/https://doi.org/10.1016/S0010-8545\(00\)00246-0](https://doi.org/https://doi.org/10.1016/S0010-8545(00)00246-0)
- Wang, H., Fang, B., Peng, B., Wang, L., Xue, Y., Bai, H., Lu, S., Voelcker, N. H., Li, L., Fu, L., & Huang, W. (2021). Recent Advances in Chemical Biology of

- Mitochondria Targeting. In *Frontiers in Chemistry* (Vol. 9). Frontiers Media S.A. <https://doi.org/10.3389/fchem.2021.683220>
- Wang, H., Zhang, Y., Chen, Y., Pan, H., Ren, X., & Chen, Z. (2020). Living supramolecular polymerization of an Aza-BODIPY dye controlled by a hydrogen-bond-accepting Triazole unit introduced by click chemistry. *Angewandte Chemie International Edition*, 59(13), 5185–5192.
- Wang, J., Li, J., Xiao, Y., Fu, B., & Qin, Z. (2020). TPP-based mitocans: A potent strategy for anticancer drug design. *RSC Medicinal Chemistry*, 11(8), 858–875.
- World Health Statistics 2023 Monitoring Health for the SDGs, Sustainable Development Goals*. (2023). World Health Organization.
- Yang, R.-Z., Wang, D.-D., Li, S.-M., Liu, P.-P., & Kang, J.-S. (2025). Measurement of Mitochondrial Membrane Potential In Vivo using a Genetically Encoded Voltage Indicator. *JoVE*, 216, e67911. <https://doi.org/doi:10.3791/67911>
- Yin, Y., & Shen, H. (2022). Common methods in mitochondrial research (Review). *International Journal of Molecular Medicine*, 50(4). <https://doi.org/10.3892/ijmm.2022.5182>
- Zielonka, J., Joseph, J., Sikora, A., Hardy, M., Ouari, O., Vasquez-Vivar, J., Cheng, G., Lopez, M., & Kalyanaraman, B. (2017). Mitochondria-Targeted Triphenylphosphonium-Based Compounds: Syntheses, Mechanisms of Action, and Therapeutic and Diagnostic Applications. In *Chemical Reviews* (Vol. 117, Issue 15, pp. 10043–10120). American Chemical Society. <https://doi.org/10.1021/acs.chemrev.7b00042>
- Zorova, L. D., Popkov, V. A., Plotnikov, E. Y., Silachev, D. N., Pevzner, I. B., Jankauskas, S. S., Babenko, V. A., Zorov, S. D., Balakireva, A. V., Juhaszova, M., Sollott, S. J., & Zorov, D. B. (2018). Mitochondrial membrane potential. *Analytical Biochemistry*, 552, 50–59. <https://doi.org/10.1016/j.ab.2017.07.009>