

CURRICULUM VITAE

Marcin Ptaszek
Associate Professor
Department of Chemistry and Biochemistry
University of Maryland, Baltimore County
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Education

- 2004-2007 Post-doctoral; Department of Chemistry, North Carolina State University
1998-2002 Ph.D. Department of Chemistry, Jagiellonian University, Krakow, Poland.
1992-1997 M.S. Department of Chemistry, Jagiellonian University, Krakow, Poland.

Appointments

- 2015-present, Department of Chemistry and Biochemistry,
University of Maryland, Baltimore County
Associate Professor
- 2009-2015, Department of Chemistry and Biochemistry,
University of Maryland, Baltimore County
Assistant Professor
- 2007- 2009, Department of Chemistry
North Carolina State University,
Research Assistant Professor
- 2002-2003, Department of Chemistry
Jagiellonian University, Krakow, Poland
Research and Teaching Fellow, Chemistry
- 1997-1998, Department of Chemistry
Jagiellonian University, Krakow, Poland
Research and Teaching Assistant, Chemistry

Honors and Awards

- 2014 Nomination to the Camille Dreyfus Teacher-Scholar Award by UMBC
2010 6,000\$ (direct cost) UMBC Summer Faculty Fellowship

2011 6,000\$ (direct cost) UMBC Summer Faculty Fellowship

Research Support

Current

2020 – 2025 \$464,307 (direct cost) NSF: Excitonically coupled hydroporphyrins as functional components for solar energy conversion. Role: PI.

Pending

2025-2028. \$724,000 (total cost), NSF: Engineering molecular arrays to harness triplet states. Role: co-PI.

Past

2023 \$15,000 (Direct Cost): Novel near-IR fluorescent markers based on hydroporphyrin-doped polymer dots for multicolor in vivo medicinal diagnosis., " Catalyst Grant, Sponsored by UMBC. Role: PI

2019 – 2023 \$260,594 (direct cost) DOE: Expanding utility and range of quantum and polymer dots for multiplexed superresolution fluorescence imaging in plants. Role: co-PI.

2019 – 2020 \$10,000 (direct cost): UMBC START Award: Bioinspired, strongly electronically-coupled multichromophoric arrays for solar energy conversion. Role: co-PI.

2017 – 2019 \$80,000 (average yearly cost) NSF REU: Research Experience for Undergraduates in Advanced Chemical Sensing and Imaging. Role co-PI

2014 – 2019 \$448,918 (direct cost): UO1 National Cancer Institute: Multicolor fluorescence-guided surgery with novel activatable fluorophores. Role PI (grant was submitted and reviewed as RO1, administratively changed into UO1 when awarded).

2013 – 2017 340,954\$ (Direct cost), National Science Foundation: CHE-1301109 Strongly Conjugated Bacteriochlorin Dyads – Novel Near-IR Fluorophores and Activatable Singlet Oxygen Photosensitizers. Role PI

2011 6,000 (direct cost) UMBC Summer Faculty Fellowship, role PI

2011 – 2012 14,695 (direct cost) UMBC SRAIS, role PI

2010 6,000\$ (direct cost) UMBC Summer Faculty Fellowship, role PI

2010 – 2011 20,000 (direct cost) UMBC SRAIS, role PI

Research Group (February 2025)

Brandon Busick – graduate student (5th year)

Vaibhavkumar Ginyoa – graduate student (2st year)
Cody Hrynko – graduate student (1st year)
Alyyiah Roberson – undergraduate student
Nahom Getachev – undergraduate student
Sedrick Peradilla – undergraduate student
Nikhil Maddirala – high school student

Past group members

Post-doctoral associates

Dr. Zhanqian Yu - January 2010 – February 2013; June 2013-October 2013
Dr. Ganga Viswanathan Bhagavathy - May 2012 – May 2013
Dr. Subramani Swaminathan – September 2014 – August 2015
Dr. Joshua Akhigbe – January 2014 – December 2016

Graduate Students

Nopondo Esemoto	Fall 2015- Fall 2022, PhD 2022
Sara Ansteatt	Fall 2015- Fall 2022, PhD 2022
Daniel Talley	Fall 2010 – rotation
Sona Thakur	Fall 2010 – rotation
Tijesunimi Odebode	Spring 2011 – rotation
John Arthur	Spring 2011 – rotation
Lauren Schoukroun	Summer 2011 – rotation
Christian Toonstra	Fall 2011 – rotation
Weihua Yuan	Fall 2011 – rotation
Renyong Tu	Fall 2011 – rotation
Nithya Santhanam	Spring 2012 – Spring 2013, MS 2013
Rajiv Varma	Fall 2011 – Spring 2012
Thomas Gallagher	Fall 2012 – Spring 2014, MS 2014
Alexander Vega	Fall 2015 - rotation
Laura Satterfield	Fall 2016 – rotation
Connor Riahin	Fall 2017 – rotation
Charles Waters	Fall 2018 – rotation
Joy Thames	Fall 2018 – rotation
Adam Meares	Spring 2013 – Spring 2020, PhD 2020
Ali Kakeshpour	Spring 2021 – rotation
Michael Marciniak	Fall 2021 – rotation
Thomas Ntim	Fall 2021 - rotation
Oliver Paszkowski	Fall 2024 - rotation
Matt Denny	Fall 2024 - rotation
Daniel Morgan	Fall 2019 – Fall 2021, MS 2021

Hamed Sadatfaraji Fall 2021 – Spring 2023, MS 2023
Matthew Denny Fall 2024 – rotation
Oliver Paszkowski Fall 2024 - rotation

Undergraduate Students

Brice Biggins Fall 2009 – Spring 2010
Nguyem D. Nguyen Fall 2009 – Spring 2010
Jamie K. Nguyen Summer 2010 – Spring 2012
Chirag Pancholi Fall 2010 – Spring 2012
Aaisha Soni Fall 2010
Ajay Ravichandran Fall 2010 – Spring 2011
Dalia Akkad Fall 2010 – Spring 2012
Muhammad Farooq Spring 2011 – Fall 2011
Shannon Zik Summer 2011 – Spring 2013
Rafael Arias Summer 2011 –Spring 2012
Adam Meyer Spring 2012
Melanie Ehudin Fall 2011 – Spring 2013 (Gaucher College)
Marc Webb Fall 2012 – Summer 2014
Andrius Satraitis Fall 2012 – Summer 2017
Jay Vora Summer 2013 – Spring 2014
Anthony Palilla Summer 2014 – Fall 2014
Thyago Rizolli Summer 2014 – Summer 2015
Alina Buehler Summer 2014 – Fall 2014
Andrius Satraitis Spring 2013 – Summer 2016
Marcus Jordan Fall 2016 – Spring 2018.
Linda Wiratan Fall 2015 – Summer 2016
Melissa Lucero Fall 2015 – Spring 2017
Alexander Orosz Spring 2018
Nidhi Naik Fall 2018 – Spring 2019
Daniel Morgan Fall 2017 – Spring 2019
Tayron Tention Fall 2019 – Spring 2021
Benjamin Melusso Summer 2023 – Spring 2024.
Andrew Russell Spring 2023 – Spring 2024
Mack McKever Fall 2023 – Summer 2024
Matthew Hershaw Fall 2023 – Summer 2024
Mathieu Niel Fall 2023 – Fall 2024

REU Undergraduate Students

Kalen Sullivan (Summer 2016)
Luke Monroe (Summer 2017)
Anna Blood (Summer 2018)
Miguel Gomez (Summer 2018)

SCIART Students

Amber Thompson (Summer 2019)
Anna Greene (Summer 2019)
Michael LaScola (Summer 2019)

High School Students

Naji Rhodes	Spring 2013
Alina Buehler	Summer 2014
Linda Viratan	Fall 2014-Summer 2015
Rachel Fidel	Fall 2015 – Spring 2016
Shivani Amin	Fall 2016 – Spring 2017
Sincere Melvin	Fall 2017 – Spring 2018
Yuri Kim	Fall 2018 – Spring 2019
Nick Pavlosky	Fall 2019 – Spring 2020
Ethan Helicke	Fall 2021 – Spring 2022
Victoria Rice	Fall 2022 – Spring 2023
Abraham Akinladenu	Fall 2023 – Spring 2024
Prakruth Aacha	Fall 2024 – spring 2025

RESEARCH

Articles in Peer-reviewed Journals

- (69) Ziental, D.; Czarczynska-Goslinska, B.; Wysocki, M.; Ptaszek, M.; Sobotta, L. Advances and Perspectives in use of Semisolid Formulations for Photodynamic Methods. *Eur. J. Pharmaceutics and Biopharmaceutics*, **2024**, *204*, 114485.
- (68) Ptaszek, M.; Meares, A.; Ansteatt, S. Hydroporphyrin-BODIPY Arrays. *J. Porphyrin Phthalocyanines*, **2024**, *28*, 201-216.
- (67) Ptaszek, M.; Liebman, J. F.; Paradigms and Paradoxes: Are Maleimides Aromatic, Antiaromatic, or Neither? *Struct. Chem.* **2023**, *34*, 2015-2019.
- (66) Ansteatt, S.; Gelfand, R.; Pelton, M.; Ptaszek, M. Geometry-Independent Ultrafast Energy Transfer in Bioinspired Arrays Containing Electronically Coupled BODIPY Dyads as Energy Donors. *Chem. Eur. J.* **2023**, *29*, e202301571 (cover article).
- (65) Kato, T.; Riahin, C.; Furusawa, A.; Fukushima, H.; Wakiyama, H.; Okuyama, S.; Takao, S.; Choyke, P. L.; Ptaszek, M.; Rosenzweig, Z.; Kobayashi, H.

- Simultaneous Multicolor Imaging of Lymph Node Chains Using Hydroporphyrin-Doped Near-Infrared Emitting Polymer Dots. *Nanomedicine*, **2023**, *18*, 659-666.
- (64) Ansteatt, S. Uthe, B., Mandal, B. Gelfand, R.; Dunietz, B. D. Pelton, M.; Ptaszek, M. Engineering Giant Excitonic Coupling in Bioinspired, Covalently Bridged BODIPY Dyads. *Phys. Chem. Chem. Phys.* **2023**, *25*, 8013-8027.
- (63) Riahin, C.; Mendis, K. Busick, B. Ptaszek, M.; Yang, M.; Stacey, G. Parvate, A. Evans, J. E.; Traeger, J. Hu, D. Orr Rosenzweig, Z. Near Infrared Emitting Semiconductor Polymer Dots for Bioimaging and Sensing. *Sensors*, **2022**, *22*, 7218.
- (62) Roy, A.; Diers, J. R.; Niedzwiedzki, D. M.; Meares, A.; Yu, Z.; Bhagavathy, G. V.; Satraitis, A.; Kirmaier, C.; Ptaszek, M.; Bocian, D. F.; Holten, D. Photophysical Properties and Electronic Structure of Hydroporphyrin Dyads Exhibiting Strong Through-Space and Through-Bond Electronic Interactions. *J. Phys. Chem. A*, **2022**, *126*, 5107-5125.
- (61) Riahin, C.; Meares, A.; Esemoto, N., N.; Ptaszek, M.; LaScola, M.; Pandala, N.; Lavik, E.; Yang, M.; Stacey, G.; Hu, D.; Traeger, J. C.; Orr, G.; Rosenzweig, Z. Hydroporphyrin-Doped Near-Infrared-Emitting Polymer Dots for Cellular Fluorescence Imaging, *ACS Appl. Mater. Interface* **2022**, *14*, 20790-20801.
- (60) Anseatt, S.; Meares, A.; Ptaszek, M. Amphiphilic Near-IR Emitting 3,5-Bis[2-pyrrolylethenyl]BODIPY Derivatives: Synthesis, Characterization, and Comparison with other (Hetero)Arylethenyl-Substituted BODIPYs. *J. Org. Chem.* **2021**, *86*, 8755-8765.
- (59) H.S. Kang, H. S.; Satraitis, S.; Meares, A.; Bhagavathy, G. V.; Diers, J. R. Niedzwiedzki, D. M.; Kirmaier, C.; Ptaszek, M.; Bocian, D. F.; Holten, D. Conjugated-linker Dependence of the Photophysical Properties and Electronic Structure of Chlorin Dyads. *J. Porphyrins Phthalocyanines* **2021**, *25*, 639-663.
- (58) Bhandari, S.; Sarkar, S.; Schubert, A.; Yamada, A.; Payne, J.; Ptaszek, M.; Geva, E.; Dunietz, B. D. Intersystem Crossing in Tetrapyrrolic Macrocycles. A First-Principle Analysis. *J. Phys. Chem. C*, **2021**, *125*, 13493–13500.
- (57) Yu, Z.; Uthe, B.; Gelfand, R.; Pelton, M.; Ptaszek, M. Weakly Conjugated Bacteriochlorin–Bacteriochlorin Dyad: Synthesis and Photophysical Properties. *J. Porphyrins Phthalocyanines* **2021**, *25*, 724–733.
- (56) Aksu, H.; Maiti, B.; Ptaszek, M.; Dunietz, B. D. Photoinduced Charge Transfer in Zn- and Au-ligated Symmetric and Asymmetric Bacteriochlorin Dyads. A Computational Study. *J. Chem. Phys.* **2020**, *153*, 134111-1–134111-7
- (55) Uthe, B.; Meares, A.; Ptaszek, M.; Pelton, M. Solvent-Dependent Energy and Charge Transfer Dynamics in Hydroporphyrin-BODIPY Arrays. *J. Chem. Phys.* **2020**, *153*, 074302.
- (54) Inagaki, F. F.; Fukimura, D.; Ansteatt, S.; Okada, R.; Furusawa, A.; Choyke, P.

- L.; Ptaszek, M.; Kobayashi, H. Effect of Short PEG on Near-Infrared BODIPY-Based Activatable Optical Probes. *ACS Omega*, **2020**, *5*, 15657-15665.
- (53) Meares, A.; Yu, Z.; Bhagavathy, G. V.; Satraitis, A.; Ptaszek, M. Photoisomerization of Eneinylnyl Linker Leads to Slipped Co-facial Hydroporphyrin Dimers with Strong Through-Bond and Through-Space Electronic Interactions. *J. Org. Chem.* **2019**, *84*, 7851-7862.
- (52) Ogata, F.; Nagaya, T.; Maruoka, Y.; Akhigbe, J.; Meares, A.; Lucero, M.; Satraitis, A.; Fujimura, D.; Okada, R.; Inagaki, F.; Choyke, P.; Ptaszek, M.; Kobayashi, H. Activatable Near-Infrared Fluorescence Imaging Using PEGylated Bacteriochlorin-Based Chlorin and BODIPY-Dyads as Probes for Detecting Cancer. *Bioconjugate Chem.* **2019**, *30*, 169-183.
- (51) Tivari, V.; Matutes, Y. A.; Konar, A.; Yu, Z.; Ptaszek, M.; Bocian, D. F.; Holten, D.; Kirmaier, C.; Ogilvie, J. P. Strongly Coupled Bacteriochlorin Dyad Studied Using Phase-Modulated Fluorescence-Detected Two-Dimensional Electronic Spectroscopy. *Opt. Express*, **2018**, *26*, 22327-22341.
- (50) Meares, A.; Bhagavathy, G. V.; Zik, S. R.; Gallagher, T. Expanding π -Conjugation in Chlorins Using Ethenyl Linker. *J. Org. Chem.* **2018**, *83*, 9076-9087.
- (49) McLeese, C.; Yu, Z.; Esemoto, N. N.; Kolodziej, C.; Maiti, B.; Bhandari, Dunietz, B. D.; Burda, C.; Ptaszek, M. Exciton Interactions in Bacteriochlorin Homo-Dyads Enable Ultrafast Charge Transfer: A Novel Approach to the Artificial Photosynthetic Special Pair. *J. Phys. Chem. B*, **2018**, *122*, 4131-4140.
- (48) Esemoto, N. N.; Satraitis, A.; Wiratan, L.; Ptaszek, M. Symmetrical and Nonsymmetrical Meso-Meso Directly Linked Hydroporphyrin Dyads: Synthesis and Photochemical Properties. *Inorg. Chem.* **2018**, *57*, 2977-2988.
- (47) Meares, A.; Satraitis, A.; Ptaszek, M. BODIPY-Bacteriochlorin Energy Transfer Arrays: Toward Near-IR Emitters with Broadly Tunable, Multiple Absorption Bands. *J. Org. Chem.* **2017**, *82*, 13068-13075.
- (46) Meares, A.; Satraitis, A.; Akhigbe, J.; Santhanam, N.; Swaminathan, S.; Ehudin, M.; Ptaszek, M. Amphiphilic BODIPY-Hydroporphyrin Energy Transfer Arrays with Broadly Tunable Absorption and Deep Red/Near-Infrared Emission in Aqueous Micelles. *J. Org. Chem.* **2017**, *82*, 6054-6070.
- (45) Nopondo, E. N.; Yu, Z.; Wiratan, L.; Satraitis, A.; Ptaszek, M.; Bacteriochlorin Dyads as Solvent Polarity Dependent Near-Infrared Fluorophores and Reactive Oxygen Species Photosensitizers. *Org. Lett.* **2016**, *18*, 4590-4593.
- (44) Kang, H. S.; Esemoto, N. N.; Diers, J.; Niedzwiedzki, D.; Greco, J.; Akhigbe, J.; Yu, Z.; Pancholi, C.; Viswanathan, B., G.; Nguyen, J. K.; Kirmaier, C.; Birge, R.; Ptaszek, M.; Holten, D.; Bocian, D. F. Effects of Strong Electronic Coupling in Chlorin and Bacteriochlorin Dyads. *J. Phys. Chem. A* **2016**, *120*, 379-385.

- (43) Meares, A.; Santhaman, N.; Satraitis, A. Yu, Z.; Ptaszek, M. Deep-red emissive BODIPY-chlorin arrays, excitable with green and deep-red light. *J. Org. Chem.* **2015**, *80*, 3858-3869.
- (42) Faries, K.; M.; Diers, J. R.; Springer, J. W.; Yang, E.; Ptaszek, M.; Lahaye, D.; Krayer, M.; Taniguchi, M.; Kirmaier, C.; Lindsey, J. S.; Bocian, D. F.; Holten, D. Photophysical Properties and Electronic Structure of Chlorin-Imides: Bridging the Gap between Chlorins and Bacteriochlorins. *J. Phys. Chem. B* **2015**, *119*, 7503-7515.
- (41) Ra, D.; Gauger, K. A.; Muthukumar, K.; Balasubramanian, B.; Chandrasher, V.; Taniguchi, M.; Yu, Z.; Talley, D. C.; Ehdin, M.; Ptaszek, M.; Lindsey, J. S. Progress Towards Synthetic Chlorins with Graded Polarity, Conjugatable Substituents, and Wavelength Tunability. *J. Porphyrins. Phthalocyanines*. **2015**, *19*, 547-572.
- (40) Yu, Z.; Pancholi, C.; Bhagavathy, G. V.; Kang, H. S.; Nguyen, J. K., Ptaszek, M. Strongly Conjugated Hydrophorphyrin Dyads: Extensive Modification of Hydrophorphyrins' Properties by Expanding the Conjugated System *J. Org. Chem.* **2014**, *79*, 7910-7925.
- (39) Harada, T.; Sano, K.; Sato, K.; Watanabe, R.; Yu, Z.; Hanaoka, H. Nakajima, T.; Choyke, P. L.; Ptaszek, M.; Kabayashi, H. Activatable Organic near-Infrared Fluorescent Probes Based on a Bacteriochlorin Platform: Synthesis and Multicolor in Vivo Imaging with a Single Excitation. *Bioconjugate Chem.* **2014**, *25*, 362-369.
- (38) Liu, M.; Ptaszek, M.; Mass, O.; Minkler, D. F.; Sommer, R. D.; Bhaumik, J. Lindsey, J. S. Regioselective β -Pyrrolic Electrophilic Substitution of Hydrodipyrin-Dialkylboron Complexes Facilitates Access to Synthetic Models for Chlorophyll *f*. *New. J. Chem.* **2014**, *38*, 1717-1730.
- (37) Yu, Z.; Ptaszek, M. Near-IR Emissive Chlorin-Bacteriochlorin Energy-Transfer Dyads with a Common Donor and Acceptors with Tunable Emission Wavelength. *J. Org. Chem.* **2013**, *78*, 10678-10691.
- (36) Chandrasher, V.; Taniguchi, M.; Ptaszek, M.; Lindsey, J. S. "Competing Knorr and Fischer-Fink pathways to pyrroles in neutral aqueous solution." *Tetrahedron*, **2012**, *68*, 6957-6967.
- (35) Vinita, A. M.; Sano, K.; Yu, Z.; Nakajima, T.; Choyke, P.; Ptaszek, M.; Kobayashi, H. "Galactosyl human serum albumin-NMP1 conjugate: A near infrared-near (NIR)-activatable fluorescence imaging agent to detect peritoneal ovarian cancer metastases." *Bioconjugate Chem.* **2012**, *23*, 1671-1679.
- (34) Yu, Z.; Ptaszek, M. "Multifunctional Bacteriochlorins from selective palladium-

- coupling reactions.” *Org. Lett.* **2012**, *14*, 3708-3711.
- (33) Mass, O.; Pandithavidana, D. R.; Ptaszek, M.; Santiago, K.; Springer, J. W.; Jiao, J.; Tang, Q.; Kirmaier, C.; Bocian, D. F.; Holten, D.; Lindsey, J. S. “*De novo* Synthesis and Properties of analogues of the self-assembling Chlorosomal Bacteriochlorophylls.” *New J. Chem.* **2011**, *35*, 2671-2690.
- (32) Mass, O.; Taniguchi, M., Ptaszek, M., Springer, J. W., Faries, K. M., Diers, J. R.; Bocian, D. F.; Holten, D.; Lindsey, J. S. “Structural characteristics that make chlorophylls green: interplay of hydrocarbon skeleton and substituents.” *New J. Chem.* **2011**, *35*, 76-88.
- (31) Lindsey, J. S.; Chandrashaker, V.; Taniguchi, M.; Ptaszek, M. “Abiotic formation of uroporphyrinogen from acyclic reactants.” *New J. Chem.* **2011**, *35*, 65-75.
- (30) Ptaszek, M.; Lahaye, D.; Kraymer, M.; Muthiah C.; Lindsey, J. S. “De Novo Synthesis of Long-Wavelength Absorbing Chlorin-13,15-dicarboximides.” *J. Org. Chem.* **2010**, *75*, 1659-1673.
- (29) Kraymer, M.; Ptaszek, M.; Kim, H.-J.; Meneely, K. R.; Fan, D.; Secor K.; Lindsey, J. S. “Expanded Scope of Synthetic Bacteriochlorins via Improved Acid Catalysis Conditions and Diverse Dihydrodipyrin-Acetals.” *J. Org. Chem.* **2010**, *75*, 1016-1039.
- (28) Lindsey, J. S.; Ptaszek, M.; Taniguchi, M. “Simple Formation of an Abiotic Porphyrinogen in Aqueous Solution.” *Origin of Life and Evolution of Biospheres.* **2009**, 495-515.
- (27) Kraymer, M.; Balasubramanian, T.; Ruzie, C.; Ptaszek, M.; Cramer, D. L.; Taniguchi, M.; Lindsey, J. S. Refined syntheses of hydrodipyrin precursors to chlorin and bacteriochlorin building blocks. *J. Porphyrins Phthalocyanines.* 2009, *13*, 1098-1100.
- (26) Mass, O.; Ptaszek, M.; Taniguchi, M.; Diers, J. R.; Kee, H. L.; Bocian, D. F.; Holten, D.; Lindsey, J. S. Spectroscopic Properties of 12-Substituted versus 13-Substituted Chlorins. *J. Org. Chem.* 2009, *74*, 5276-5289.
- (25) Kee, H. L.; Diers, J. R.; Ptaszek, M.; Muthiah, C.; Fan, D.; Lindsey, J. S.; Bocian, D. F.; Holten D. Chlorin–Bacteriochlorin Energy-transfer Dyads as Prototypes for Near-infrared Molecular Imaging Probes: Controlling Charge-transfer and Fluorescence Properties in Polar Media. *Photochem. Photobiol.* 2009, *85*, 909-920.
- (24) Muthiah, C.; Lahayeé, D.; Taniguchi, M.; Ptaszek, M.; Lindsey, J. S. Regioselective Bromination Tactics in the De Novo Synthesis of Chlorophyll b Analogues. *J. Org. Chem.* 2009, *74*, 3237-3247.

- (23) Kee, H. L.; Nothdurft, R.; Muthiah, C.; Diers, J. R.; Fan, D.; Ptaszek, M.; Bocian, D. F.; Lindsey, J. S.; Culver, J. P.; Holten, D. Examination of chlorin-bacteriochlorin energy transfer dyads as prototypes for near-infrared molecular imaging probes. *Photochem. Photobiol.* 2008, *84*, 1061-1072.
- (22) Dogutan, D. K.; Ptaszek, M.; Lindsey, J. S. Rational or statistical routes from 1-acyldipyrromethanes to meso-substituted porphyrins. Distinct patterns, multiple pyridyl substituents, and amphipathic architectures. *J. Org. Chem.* 2008, *73*, 6187-6201.
- (21) Muthiah, C.; Kee, H. L.; Diers, J. R.; Fan, D.; Ptaszek, M.; Bocian, D. F.; Holten, D.; Lindsey, J. S. Synthesis and excited-state photodynamics of a chlorin-bacteriochlorin dyad-through-space versus through-bond energy transfer in tetrapyrrole arrays. *Photochem. Photobiol.* 2008, *84*, 786-801.
- (20) Ptaszek, M.; Yao Z.; Savithri, D.; Boyle, P. D.; Lindsey, J. S. Synthesis and structural properties of simple porphyrin analogues of bacteriochlorophyll *c*. *Tetrahedron* 2007, *63*, 12629-12638.
- (19) Muthiah, C.; Ptaszek, M.; Nguyen, T.; Flack, K. M.; Lindsey, J. S. Two complementary routes to 7-substituted chlorins. Partial mimics of chlorophyll *b*. *J. Org. Chem.* 2007, *72*, 7736-7749.
- (18) Yao, Z.; Bhaumik, J.; Dhanalekshmi, S.; Ptaszek, M.; Rodriguez, Phillip, A.; Lindsey, J. S. Synthesis of porphyrins bearing 1-4 hydroxymethyl groups and other one-carbon oxygenic substituents in distinct patterns. *Tetrahedron* 2007, *63*, 10657-10670.
- (17) Kee, H. L.; Kirmaier, C.; Tang, Q.; Diers, J. R.; Muthiah, C.; Taniguchi, M.; Laha, J. K.; Ptaszek, M.; Lindsey, J. S.; Bocian, D. F.; Holten, D. Effects of substituents on synthetic analogs of chlorophylls. Part 2: Redox properties, optical spectra and electronic structure. *Photochem. Photobiol.* 2007, *83*, 1125-1143.
- (16) Kee, H. L.; Kirmaier, C.; Tang, Q.; Diers, J. R.; Muthiah, C.; Taniguchi, M.; Laha, J. K.; Ptaszek, M.; Lindsey, J. S.; Bocian, D. F.; Holten, D. Effect of substituents on synthetic analogues of chlorophylls. Part 1: synthesis, vibrational properties and excited-state decay characteristics. *Photochem. Photobiol.* 2007, *83*, 1110-1124.
- (15) Dogutan, D. K.; Ptaszek, M.; Lindsey, J. S. Direct synthesis of magnesium porphine via 1-formyldipyrromethane. *J. Org. Chem.* 2007, *72*, 5008-5011.
- (14) Taniguchi, M.; Ptaszek, M.; McDowell, B. E.; Boyle, P. D.; Lindsey, J. S. Sparsely substituted chlorins as core constructs in chlorophyll analogue

- chemistry. Part 3: Spectral and structural properties. *Tetrahedron* 2007, 63, 3850-3863.
- (13) Taniguchi, M.; Ptaszek, M.; McDowell, B. E.; Lindsey, J. S. Sparsely substituted chlorins as core constructs in chlorophyll analogue chemistry. Part 2: Derivatization. *Tetrahedron* 2007, 63, 3840-3849.
- (12) Ptaszek, M.; McDowell, B. E.; Taniguchi, M.; Kim, H.-J.; Lindsey, J. S. Sparsely substituted chlorins as core constructs in chlorophyll analogue chemistry. Part 1: Synthesis. *Tetrahedron* 2007, 63, 3826-3839.
- (11) Kim, H.-J.; Dogutan, D. K.; Ptaszek, M.; Lindsey, J. S. Synthesis of hydrodipyrins tailored for reactivity at the 1- and 9-positions. *Tetrahedron* 2006, 63, 37-55.
- (10) Laha, J. K.; Muthiah, C.; Taniguchi, M.; McDowell, B. E.; Ptaszek, M.; Lindsey, J. S. Synthetic Chlorins Bearing Auxochromes at the 3- and 13-Positions. *J. Org. Chem.* 2006, 71, 4092-4102.
- (9) Ptaszek, M.; McDowell, B. E.; Lindsey, J. S. Synthesis of 1-formyldipyrromethanes. *J. Org. Chem.* 2006, 71, 4328-4331.
- (8) Rodakiewicz-Nowak, J.; Nowak, P.; Rutkowska-Zbik, D.; Ptaszek, M.; Michalski, O.; Mynarczuk, G.; Eilmes, J. Spectral and electrochemical characterization of dibenzotetraaza[14]annulenes. *Supramol. Chem.* 2005, 17, 643-647.
- (7) Ptaszek, M.; Bhaumik, J.; Kim, H.-J.; Taniguchi, M.; Lindsey, J. S. Refined synthesis of 2,3,4,5-tetrahydro-1,3,3-trimethyldipyrin, a deceptively simple precursor to hydroporphyrins. *Org. Proc. Res. Dev.* 2005, 9, 651-659.
- (6) Muthukumar, K.; Ptaszek, M.; Noll, B.; Scheidt, W. R.; Lindsey, J. S. Boron-complexation strategy for use with 1-acyldipyrromethanes. *J. Org. Chem.* 2004, 69, 5354-5364.
- (5) Eilmes, J.; Ptaszek, M.; Dobrzycki, L.; Wozniak, K. New alkoxy carbonyl derivatives of dibenzotetraaza[14]annulene. Crystal and molecular structure of [5,14-dihydro-7,16-diisopropoxycarbonyl-8,15-dimethyl-6,17-diphenyldibenzo[b,i][1,4,8,11]tetraazacyclotetradecinato(2-)- \square^4 N]nickel(II). *Polyhedron* 2003, 22, 3299-3305.
- (4) Eilmes, J.; Ptaszek, M.; Wozniak, K. Synthesis, reactivity, crystal and molecular structure of [5,14-dihydro-7,16-bis(2-oxo-3H-furan-5-yl)-6,8,15,17-tetramethyldibenzo[b,i][1,4,8,11]tetraazacyclotetradecinato(2-)- \square 4N]nickel(II). *Polyhedron* 2002, 21, 7-17.

- (3) Eilmes, J.; Ptaszek, M.; Zielinska, K. A new synthetic strategy towards dibenzotetraaza[14]annulenes bearing alkoxy carbonyl and aryloxy carbonyl pendant substituents. *Polyhedron* 2001, 21, 143-149.
- (2) Eilmes, J.; Ptaszek, M.; Dibenzotetraaza[14]annulenes, part II. *Wiadomości Chemiczne*, 1999, 53, 329-351.
- (1) Eilmes, J.; Ptaszek, M. Dibenzotetraaza[14]annulenes. Part I. *Wiadomości Chemiczne* 1999, 53, 305-328.

Book Chapters

- (5) Ptaszek, M. Multiporphyrinic Arrays Containing Hydroporphyrins. *In Chemistry of Nitrogen-Rich Functional Group. Vol 2. Patai's Chemistry of Functional Groups.* Liebman, J. F.; Greer, A. (Eds). Wiley, 2024.
- (4) Ptaszek, M. "Porphyrins and Hydroporphyrins for *In Vivo* Bioimaging." in *Porphyrinoids as Functional Materials.* Lang, H.; Rueffer, T. (Eds.), RSC 2021.
- (3) Ptaszek, M. "Hydroporphyrins in Fluorescence *in vivo* Imaging" *In Reviews in Fluorescence* 2017. Geddes, C. D. (Ed.). Springer, 2018.
- (2) Ptaszek, M. "Photochemistry of PDT and Photosensitizers." *In Imaging in Photodynamic Therapy.* Hamblin, M. R.; Huang, Y. (Eds). CRC Press, Boca Raton, 2017.
- (1) Ptaszek, M. "Rational Design of Fluorophores for *In Vivo* Bioimaging" *Progress in Molecular Biology and Translational Sciences* 2013, 113, 59-108 (invited review).

Conference Proceedings

- (1) Ptaszek, M.; Kee, H. L.; Muthiah, C.; Nothdurft, R.; Akers, W.; Achilefu, S.; Culver, J. P.; Holten, D. "Near-infrared Molecular Imaging Probes Based on Chlorin-Bacteriochlorin Dyads" *SPIE Proceedings*, 2010, vol 7576.

Patents

- (3) Ptaszek, M., Rosenzweig, Z., Meares, A., Riahin, C., Patent, HYDROPORPHYRIN-DOPED NEAR-INFRARED-EMITTING POLYMER DOTS FOR CELLULAR FLUORESCENCE IMAGING," US Patent appl. no. 18/495,141, Regular, United States. (Application: September 26, 2023).

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