

Curriculum Vitae Dewey Holten

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Education and Experience:

1989 – present Professor of Chemistry, Washington University
1986 – 1989 Associate Professor of Chemistry, Washington University
1980 – 1986 Assistant Professor of Chemistry, Washington University
1977 – 1980 Postdoctoral Fellow, Washington State University
1973 – 1976 Ph.D. in Physical Chemistry, University of Washington, Seattle
1969 – 1973 B.A. cum laude in Chemistry, Washington University, St. Louis

Honors and Awards:

2009 Outstanding Faculty Mentor Award (Washington University)
1999 Midwest Award (for Achievements in Chemistry, St. Louis Section of the ACS)
1991 Washington University Morter Board Teacher of the Month (November)
1989 St. Louis Award (St. Louis Section of the American Chemical Society)
1980 Camille and Henry Dreyfus Award for Newly Appointed Young Faculty in Chemistry
1977 NSF National Needs Postdoctoral Fellow

Professional Affiliations:

American Chemical Society

Research Interests:

Primary photochemical processes of photosynthesis; photophysical studies of tetrapyrrole chromophores and arrays for applications solar-energy and biomedical applications.

Teaching Interests:

Development of innovative undergraduate laboratory and lecture materials that enhance student's understanding of fundamental chemical concepts and their broad relevance.

Publications:

1. *The Chemistry of Recoiling Silicon Atoms V. Product-Forming Reactions in Phosphine-Silane Mixtures*, P.P. Gaspar, P. Markusch, J.D. Holten and J.J. Frost *J. Phys. Chem.* **1972**, 76, 1352.
2. *Picosecond Flash Photolysis: Transient Absorption in Sn(IV), Pd(II), and Cu(II) Porphyrins*, D. Magde, M.W. Windsor, D. Holten and M. Gouterman *Chem. Phys. Lett.* **1974**, 29, 183.
3. *Electron Transfer from Photoexcited Singlet and Triplet Bacteriopheophytin*, D. Holten, M. Gouterman, W.W. Parson, M.W. Windsor and M.G. Rockley *Photochem. Photobiol.* **1976**, 23, 415.
4. *Electron Transfer from Photoexcited Singlet and Triplet Bacteriopheophytin II. Theoretical*, M. Gouterman and D. Holten *Photochem. Photobiol.* **1977**, 25, 85.
5. *Porphyrins XXXV. Exciton Coupling in μ -oxo Scandium Dimers*, M. Gouterman, D. Holten and E. Lieberman *Chem. Phys.* **1977**, 25, 139.

6. *Isolated Photochemical Reaction Centers from Bacteriochlorophyll b-Containing Organisms*, J.P. Thornber, P.L. Dutton, J. Fajer, A. Forman, D. Holten, J.M. Olson, W.W. Parson, R.C. Prince, D.M. Tiede and M.W. Windsor *Proc. Fourth Intl. Cong. Photosynthesis* **1977**, 55.
7. *Primary Photochemical Processes in Isolated Reaction Centers of Rhodospseudomonas Viridis*, D. Holten, M.W. Windsor, W.W. Parson and J.P. Thornber *Biochim. Biophys. Acta*, **1978**, 50, 112.
8. *Models for Bacterial Photosynthesis. Electron Transfer from Photoexcited Singlet Bacteriopheophytin to Methyl Viologen and m-Dinitrobenzene*, D. Holten, M.W. Windsor, W.W. Parson and M. Gouterman *Photochem. Photobiol.* **1978**, 28, 951.
9. *Picosecond Flash Photolysis in Biology and Biophysics*, D. Holten and M.W. Windsor *Ann. Rev. Biophys. Bioeng.* **1978**, 7, 189.
10. *Picosecond Studies of Electron Transfer in Bacterial Photosynthesis and in Model Systems*, D. Holten, M.W. Windsor and W.W. Parson, *Picosecond Phenomena*, Eds. C.V. Shank, E.P. Ippen, and S.L. Shapiro (Springer-Verlag, New York) *Springer Series in Chemical Physics* **1978**, 4, 126.
11. *Kinetics of Photochemical Electron Transfer Reactions In Vivo and In Vitro*, W.W. Parson, C.C. Schenck, R.E. Blankenship, D. Holten, M.W. Windsor and C.V. Shank *Frontiers Biol. Energ.* **1978**, 1, 37.
12. *Video Direct Memory Access Interface for SWTP Systems*, D. Holten and J. Boehme *Kilobaud Microcomputing* **1979**, 34, 88.
13. *A Reliable, Inexpensive Microprocessor Interface for the Optical Multichannel Analyzer (OMA)*, D. Holten, D.C. Cremers, S.C. Pyke, R. Selensky, S.S. Shah, D.W. Warner, and M.W. Windsor *Rev. Sci. Instrum.* **1979**, 50, 1653.
14. *Picosecond Studies of Primary Charge Separation in Bacterial Photosynthesis*, M.W. Windsor and D. Holten *Phil. Trans. R. Soc. London A.* **1980**, 198, 335.
15. *Improved Video DMA for the CT-64*, D. Holten *Kilobaud Microcomputing* **1980**, 28, 106.
16. *Electron Transfer from Photoexcited Bacteriopheophytin to p-Benzoquinone in Cationic Micelles*, D. Holten, S.S. Shah and M.W. Windsor, *Picosecond Phenomena II*, Eds. R.M. Hochstrasser, W. Kaiser and C.V. Shank (Springer-Verlag, New York), *Springer Series in Chemical Physics* **1980**, 14, 317-321.
17. *Subpicosecond and Picosecond Studies of Electron Transfer Intermediates in Rhodospseudomonas Sphaeroides Reaction Centers*, D. Holten, C. Hoganson, M.W. Windsor, C.C. Schenck, W.W. Parson, A. Migus, R.L. Fork, and C.V. Shank *Biochim. Biophys. Acta* **1980**, 592, 461.
18. *Automated Picosecond Spectroscopy with a Standard Two-Dimensional Optical Multichannel Analyzer and an Inexpensive Microprocessor*, D. Holten and M.W. Windsor *Photobiochem. Photobiophys.* **1980**, 1, 243.
19. *Models for Photosynthetic Charge Separation: Excited State Electron Transfer Reactions of Bacteriopheophytin in Micelles*, S.S. Shah, D. Holten and M.W. Windsor *Photobiochem. Photobiophys.* **1980**, 1, 361.
20. *Excitonic Interactions in a Series of Covalently-Linked Porphyrin Dimers*, R. Selensky, D. Holten, M.W. Windsor, J.B. Paine III, D. Dolphin, J. Thomas, and M. Gouterman *Chem. Phys.* **1981**, 66, 33.
21. *Transient States in Reactions Centers Containing Reduced Bacteriopheophytin*, C.C. Schenck, W.W. Parson, D. Holten and M.W. Windsor *Biochim. Biophys. Acta* **1981**, 635, 383.
22. *Temperature Dependence of Electron Transfer Between Bacteriopheophytin and Ubiquinone in Protonated and Deuterated Reaction Centers of Rhodospseudomonas Sphaeroides*, C.C. Schenck, W.W. Parson, D. Holten, M.W. Windsor and A. Sarai *Biophys. J.* **1981**, 36, 479.
23. *Silylene Rearrangements in the Reactions of Recoiling Silicon Atoms with Trimethylsilane*, S.H. Mo, D. Holten, S. Konieczny, E.C. Ma, and P.P. Gaspar *J. Am. Chem. Soc.* **1982**, 104, 1424.
24. *Picosecond Spectroscopy*, D. Holten, In *Fast Methods in Physical Biochemistry and Cell Biology*, edited by R.I. Shasafi and S.M. Fernandez, Elsevier/North Holland Biomedical Press **1983** Chapter 10, pp. 281-338.
25. *Nickel Porphyrin Photophysics and Photochemistry. A Picosecond Investigation of Ligand Binding and Release in the Excited State*, D.H. Kim, C. Kirmaier, and D. Holten *Chem. Phys.* **1983**, 75, 305-322.

26. *Picosecond Measurements on the Binding and Release of Basic Ligands by Excited States of Nickel Porphyrins*, D.H. Kim and D. Holten *Chem. Phys. Lett.* **1983**, 98, 584-589.
27. *Picosecond Measurements of the Primary Photochemical Events in Reaction Centers Isolated from the Facultative Green Photosynthetic Bacterium Chloroflexus Aurantiacus; Comparison with the Purple Bacterium Rhodospseudomonas Sphaeroides*, C. Kirmaier, D. Holten, R. Feick and R.E. Blankenship *FEBS Lett.* **1983**, 158, 73-78.
28. *Contrasting Picosecond Photokinetics of Co^{II} and Co^{III} Porphyrins Verify Excited State Predictions*, C.D. Tait, D. Holten, and M. Gouterman *Chem. Phys. Lett.* **1983**, 100, 268-272.
29. *Picosecond Photodichroism (Photoselection) Measurements on the Transient States in Reaction Centers from Rhodospseudomonas Sphaeroides, Rhodospirillum Rubrum and Rhodospseudomonas Viridis*, C. Kirmaier, D. Holten, and W.W. Parson *Biochim. Biophys. Acta* **1983**, 725, 190-202.
30. *Effects of Mg-Solvent Coordination State on Some Excited State Processes of Bacteriochlorophyll-a*, C.D. Tait and D. Holten, *Photobiochem. Photobiophys.* **1983**, 6, 201-209.
31. *Primary Photochemistry in the Facultative Green Photosynthetic Bacterium Chloroflexus Aurantiacus*, R.E. Blankenship, R. Feick, B.D. Bruce, C. Kirmaier, D. Holten, and R.C. Fuller *J. Cell. Biochem.* **1983**, 22, 251-261.
32. *Laser Photolysis of 2-Phenylheptamethyltrisilane*, P.P. Gaspar, B.H. Boo, S. Chari, A.K. Gosh, D. Holten, C. Kirmaier, and S. Konieczny *Chem. Phys. Lett.* **1984**, 105, 153-157.
33. *Picosecond Photodichroism Studies on Reaction Centers from the Green Photosynthetic Bacterium Chloroflexus Aurantiacus*, C. Kirmaier, D. Holten, L.J. Mancino, and R.E. Blankenship *Biochim. Biophys. Acta* **1984**, 765, 138-146.
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36. *Magnetic Field Dependence of Radical Pair Decay Kinetics and Molecular Triplet Quantum Yield in Quinone-Depleted Bacterial Reaction Centers*, C.E.D. Chidsey, C. Kirmaier, D. Holten, and S.G. Boxer *Biochim. Biophys. Acta* **1984**, 766, 424-437.
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38. *Comparative Photophysics of Pt(II) and Pt(IV) Porphyrins*, D.H. Kim, D. Holten, M. Gouterman and J. Buchler *J. Am. Chem. Soc.* **1984**, 106, 4015-4017.
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43. *Picosecond Studies of Ruthenium(II) and Ruthenium(III) Porphyrin Photophysics*, C.D. Tait, D. Holten, M. Barley, D. Dolphin and B.R. James *J. Am. Chem. Soc.* **1985**, 197, 1930-1934.
44. *Transient Absorption Spectra and Excited State Kinetics of Transition Metal Porphyrins*, D. Holten and M. Gouterman, In *Optical Properties and Structure of Tetrapyrroles*, G. Blauer and H. Sund, Eds., pgs. 64-90, **1985**.
45. *The Question of the Intermediate State P⁺BChl⁻ in Bacterial Photosynthesis*, C. Kirmaier, D. Holten and W.W. Parson *FEBS Letts.* **1985**, 185, 76-81.

46. *Temperature and Detection-Wavelength Dependence of the Picosecond Electron Transfer Kinetics Measured in Rhodospseudomonas Sphaeroides Reaction Centers. Resolution of New Spectral and Kinetic Components in the Primary Charge Separation Process*, C. Kirmaier, D. Holten and W.W. Parson *Biochim. Biophys. Acta* **1985**, 810, 33-48.
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56. *A Picosecond Study of Rapid Multistep Radiationless Decay in Manganese-(III) Porphyrins*, X. Yan, C. Kirmaier and D. Holten *Inorg. Chem.* **1987**, 25, 4774-4777.
57. *Nature of the Lowest Energy Excited State in Vanadium(II) Polypyridine Complexes*, A.W. Maverick, S.S. Shah, C. Kirmaier and D. Holten *Inorg. Chem.* **1987**, 26, 774-776.
58. *Kinetics of Oxidation of the Bound Cytochromes in Reaction Centers from Rhodospseudomonas Viridis*, R.J. Shopes, L.M.A. Levine, D. Holten and C.A. Wraight *Photosyn. Res.* **1987**, 12, 165-180.
59. *Primary Photochemistry of Reaction Centers from the Purple Bacteria*, C. Kirmaier and D. Holten *Photosyn. Res.* **1987**, 13, 225-260.
60. *Laser Photolysis of Silylene Precursors*, Peter P. Gaspar, Dewey Holten, Stanislaw Konieczny and J.Y. Corey *Accts. Chem. Res.* **1987**, 20, 329-336.
61. *Flash Photolysis and Quenching Studies of Copper(II) Systems in the Presence of Lewis Bases: Inorganic exiplexes?*, C.E.A. Palmer, D.R. McMillin, C. Kirmaier and D. Holten *Inorg. Chem.* **1987**, 26, 3167-3170.
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64. *Temperature Effects on the Ground State Absorption Spectra and Electron Transfer Kinetics in Bacterial Reaction Centers*, C. Kirmaier and D. Holten, In *The Photosynthetic Bacterial Reaction Center: Structure and Dynamics*, (J. Breton and A. Vermeglio, eds.) NATO ASI Series. Series A: Life Sciences, Plenum, New York, **1988**, pp. 219-228.
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66. *Electron Transfer in a Genetically Modified Bacterial Reaction Center Containing a Heterodimer*, C. Kirmaier, D. Holten, E.J. Bylina and D.C. Youvan *Proc. Natl. Acad. Sci. USA* **1988**, 85, 7562-7566.
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78. *Ultrafast Photodissociation of a Metalloporphyrin in the Condensed Phase*, J. Rodriguez and D. Holten *J. Chem. Phys.* **1990**, 92, 5945-5950.
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