

Curriculum Vitae Christine Kirmaier

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Professional Preparation

1986 – 1988 Ph.D. Chemistry, 1988, Washington University, St. Louis, MO
1973 – 1976 M.S. Chemistry, 1976, University of Washington, Seattle, WA
1969 – 1973 B.A. Chemistry, Mathematics, 1973, Grinnell College, Grinnell, IA

Appointments:

1990 – present Research Associate Professor of Chemistry, Washington University
1980 – 1990 Research Scientist, Washington University

Research Interests: Primary photochemical processes of photosynthesis; electron transfer and energy transfer properties of porphyrins and porphyrin arrays with applications in molecular photonics, solar energy, and biomedicine; ultrafast laser spectroscopy; optical spectroscopy.

Synergistic Activities:

1990–1992 Panel member - Photosynthesis Program, U.S. Dept. of Agriculture, Office of Competitive Research Grants.

Publications:

1. *Directional Effects of σ Conjugation on Geometrical Isomerization*, N.D. Epiotis, R.A. Yates, J.R. Larson, C. Kirmaier and F. Bernardi, *J. Am. Chem. Soc.* **1977**, *99*, 8379-8388.
2. *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.
3. *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.
4. *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.
5. *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.
6. *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.
7. *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.

8. *Picosecond Flash Photolysis of Carbonyl Complexes of Ru(II) Porphyrin π -Cation Radicals*, M. Barley, D.H. Dolphin, B.R. James, C. Kirmaier, and D. Holten *J. Am. Chem. Soc.* **1984**, *106*, 3937-3943.
9. *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.
10. *Magnetic Field Effects and NMR of Bacterial Reaction Centers*, S.G. Boxer, C.E.D. Chidsey, J. Fisher, L. Takiff, C. Kirmaier and D. Holten *Adv. Photosynth. Res., Proc. Int. Cong. Photosynth. 6th*, **1984**, *1*, pp 223-226.
11. *Primary Photochemistry and Pigment Composition of Reaction Centers Isolated from the Green Photosynthetic Bacterium *Chloroflexus aurantiacus**, R.E. Blankenship, L.J. Mancino, R. Feick, R.C. Fuller, J. Machnicki, H.A. Frank, C. Kirmaier, and D. Holten *Adv. Photosynth. Res. Proc. Int. Congr. Photosynth. 6th*. **1984**, *1*, pp 203-206.
12. *Primary Reactions in Bacterial Reaction Centers*, W. Parson, D. Holten, C. Kirmaier, A. Scherz, N. Woodbury *Adv. Photosynth. Res. Proc. Int. Congr. Photosynth. 6th*. **1984**, *1*, 187-194.
13. *Picosecond Photodissociation of Six-Coordinate Iron(II) Porphyrins*, D.W. Dixon, C. Kirmaier, and D. Holten *J. Am. Chem. Soc.* **1985**, *107*, 808-813.
14. *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.
15. *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.
16. *Picosecond Photodichroism Studies of the Transient States in *Rhodospseudomonas Sphaeroides* Reaction Centers at 5 K. Effects of Electron Transfer on the Six Bacteriochlorin Pigments*, C. Kirmaier, D. Holten and W.W. Parson *Biochim. Biophys. Acta* **1985**, *810*, 49-61.
17. *Photochemistry and Electron Transfer in Borohydride-Treated Photosynthetic Reaction Centers*, P. Maroti, C. Kirmaier, C. Wraight, D. Holten and R.M. Pearlstein *Biochim. Biophys. Acta* **1985**, *810*, 132-139.
18. *Kinetics and Mechanisms of Initial Electron Transfer Reactions in *Rhodospseudomonas Sphaeroides* Reaction Centers*, W.W. Parson, N.W.T. Woodbury, M. Becker, C. Kirmaier and D. Holten In *Antennas and Reaction Centers of Photosynthetic Bacteria. Structures, Interactions and Dynamics*, (M.E. Michel-Beyerle, Ed.), Springer-Verlag, Berlin **1986**, pp 42-51.
19. *Formation and Decay of Radical Pair State P^+I^- in *Chloroflexus aurantiacus* Reaction Centers*, C. Kirmaier, R.E. Blankenship, D. Holten *Biochim. Biophys. Acta* **1986**, *850*, 275-285.
20. *Primary Photochemistry of Iron-Depleted and Zinc-Reconstituted Reaction Centers From *Rhodospseudomonas Sphaeroides**, C. Kirmaier, D. Holten, R.J. Debus, G. Feher and M.Y. Okamura *Proc. Natl. Acad. Sci. USA* **1986**, *83*, 6407-6411.
21. *Picosecond Measurements of Electron Transfer in Bacterial Photosynthetic Reaction Centers*, D. Holten, C. Kirmaier and W.W. Parson, In *Excited States and Dynamics of Porphyrins*, K.D. Straub, M. Gouterman and P.M. Rentzepis, Eds., *ACS Symposium Series* **1986**, *321*, 205-218.
22. *Spectroscopic and Primary Photochemical Properties of Modified *Rhodospseudomonas Sphaeroides* Reaction Centers*, D. Holten, C. Kirmaier and L. Levine, In *Prog. in Photosynth. Res.* (J. Biggens, Ed.), **1987**, *1*, pp 169-176.
23. *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.
24. *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.
25. *Flash Photolysis and Quenching Studies of Copper(II) Systems in the Presence of Lewis Bases: Inorganic complexes?*, C.E.A. Palmer, D.R. McMillin, C. Kirmaier and D. Holten *Inorg. Chem.* **1987**, *26*, 3167-3170.

26. *Primary Photochemistry of Reaction Centers from the Purple Bacteria*, C. Kirmaier and D. Holten, *Photosynthesis Research* 1987, **13**, 225-260.
27. *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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42. *Site-Directed Mutations Affecting Primary Photochemistry in Reaction Centers: Effects of Dissymmetry in the Special Pair*, C.C. Schenck, D. Gaul, S. Hammes, S.G. Boxer, L.M. McDowell, C. Kirmaier and D. Holten in *Reaction Centers of Photosynthetic Bacteria*, M.E. Michel-Beyerle, ed. Springer-Verlag Series in Biophysics **1990**, *6*, 229-238.

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