

DAVID H. THOMPSON

Professor of Chemistry

Purdue University, Department of Chemistry, 560 Oval Drive, West Lafayette, IN 47907

Phone: 765-494-0386; Email: davethom@purdue.edu; Web: www.chem.purdue.edu/thompson

EDUCATION

B.A. , Biology	University of Missouri, Columbia	1978
B.S. , Chemistry	University of Missouri, Columbia	1978
	<u>Research Advisor:</u> <i>John P. McCormick</i>	
Ph.D. , Organic Chemistry	Colorado State University	1984
	<u>Thesis Advisor:</u> <i>Louis S. Hegedus</i>	
	<u>Dissertation:</u> <i>Mechanistic Study of π-Methallyl Nickel Bromide Cross Coupling Reactions with Organic Halides</i>	

POSITIONS HELD

Postdoctoral Research Associate, Oregon Health & Sciences University (OHSU/OGI)	1984-1987
<u>Research Advisor:</u> <i>James K. Hurst</i>	
Assistant Professor, OHSU/OGI – Dept. of Chemical & Biological Sciences	1987-1994
Visiting Professor, University of British Columbia – Dept. of Biochemistry	1992
Associate Professor, Purdue University – Dept. of Chemistry	1994-2001
Professor, Purdue University – Dept. of Chemistry	2001-present
Visiting Professor, University of Florida – Dept. of Pharmaceutics	2003
Visiting Professor, Osaka University – Dept. of Applied Chemistry	2003
Visiting Professor, Japan Advanced Institute of Science & Technology – Dept. of Biomaterials	2005
Professor, Purdue University – Dept. of Biomedical Engineering	2008
Visiting Professor, Technical University of Denmark – Dept. of Micro & Nanotechnology	2012
Visiting Professor, Chulalongkorn University – Dept. of Pharmaceutics	2013 & 2016

DISTINCTIONS

Colorado Fellowship	1983-1984
Fall MRS Gold Paper Award	1999
Special Issue Editor, <i>Advanced Drug Delivery Reviews</i>	2001
Head, Organic Chemistry Division, Department of Chemistry, Purdue University	2003-2010
Top Ten Outstanding Teachers in the College of Science, Purdue U.	2004-2005
Chair, <i>Chemistry of Supramolecules & Assemblies</i> Gordon Conference	2005
JSPS Fellow, Japan Society for the Promotion of Science	2006
University Faculty Scholar, Purdue University	2006-2011
Award for Undergraduate Advising, College of Science, Purdue U.	2008
Co-Director, <i>Chemical & Structural Biology Group</i> , Purdue Center for Cancer Research	2008-2018
Director, <i>Medicinal Chemistry Group</i> , Purdue Center for Cancer Research	2018-present
Alternate Counselor, American Chemical Society – Division of Colloid & Surface Science	2012-2015
Chair, HC Brown Symposium in Organic Chemistry	2014
Director, NIH-National Cancer Institute, Experimental Therapeutics – Chemical Biology Consortium, Purdue University Specialized Center	2016-present

GOVERNMENT SERVICE & ADVISORY BOARDS

NIH Panelist, P50 <i>Cancer Imaging</i> Program (ad hoc)	1999
NSF Reviewer, <i>IGERT</i> Program (ad hoc)	1996-2000
Editorial Advisory Board, <i>Langmuir</i>	2000-2005
NIH Study Section, <i>Bioorganic & Natural Products Chemistry</i> (ad hoc)	2001
Editorial Advisory Board, <i>Bioconjugate Chemistry</i>	2004-present
Associate Editor, <i>WIREs: Nanomedicine & Nanobiotechnology</i>	2005-present
NIH Study Section Panelist, <i>Bioengineering & Physiology SBIR</i>	2001-2005
NIH Study Section Panelist, <i>Nanoscience & Nanotechnology in Biology & Medicine</i>	2004-2006
NIH Advisory Board, <i>Nanomedicine Development Center</i> Initiative	2004-2006
NIH Study Section Charter Member, <i>Gene & Drug Delivery</i>	2006-2010
NIH Study Section, <i>COBRE Type I</i> (ad hoc)	2008
NIH Study Section, <i>Major Research Instrumentation - Flow Cytometry Grants</i>	2009-2010
NIH Study Section, P01 Review	2009-2010
NIH-NCI <i>Nanobiology</i> Site-Visit Program Review	2010
NIH Study Section, <i>Nano</i> (ad hoc)	2010
NIH Study Section, <i>MBRS SCORE</i> (ad hoc)	2012
NSF Division of Materials Research – Biomaterials Panelist	2018
NSF MRSEC Site Visit Reviewer	2018
NSF CAREER Award Panelist	2018

RESEARCH INTERESTS

- Transiently-stable carrier system development for intracellular drug & nucleic acid delivery
- Applications of energy-efficient, analytics-guided continuous synthesis
- Materials for accelerated protein structure elucidation

PROFESSIONAL & SCHOLARLY ASSOCIATIONS

- American Association for the Advancement of Science
- American Chemical Society (Organic and Colloid & Surface Science Divisions)
- American Society for Gene Therapy
- Materials Research Society

PUBLICATIONS

1. L. S. Hegedus & D. H. Thompson, "Reactions of Organic Halides with (π -Allyl)nickel Halide Complexes: A Mechanistic Study" *Journal of the American Chemical Society* **1985** *107*, 5663-5669.
2. J. K. Hurst & D. H. Thompson, "Mechanisms of Oxidation-Reduction Across Vesicle Bilayer Membranes: An Overview" *Journal of Membrane Science* **1986** *28*, 3-29.
3. J. K. Hurst, D. H. Thompson & J. S. Connolly, "Oxidative Quenching of Photoexcited ZnTPPS⁴⁻ Ion by Dihexadecylphosphate Vesicle-Bound Viologens" *Journal of the American Chemical Society* **1987** *109*, 507-515.
4. J. K. Hurst & D. H. Thompson, "One-Electron Reduction of Dihexadecylphosphate-Bound Viologens by Pentacyanocobaltate Ions" *Inorganic Chemistry* **1987** *26*, 39-43.

5. D. H. Thompson, W. C. Barrette & J. K. Hurst, "One-Electron Reduction of Dihexadecylphosphate Vesicle-Bound Viologens by Dithionite Ions" *Journal of the American Chemical Society* **1987** *109*, 2003-2009.
6. M. J. Colaneri, L. Kevan, D. H. Thompson & J. K. Hurst, "Variation of Alkylmethylviologen Radical Cation-Water Interactions in Micelles and Vesicles from ESEM Spectroscopy: Effect of Alkyl Chain Length" *Journal of Physical Chemistry* **1987** *91*, 4072-4077.
7. T. Lu, T. M. Cotton, J. K. Hurst & D. H. Thompson, "A Raman and Surface-Enhanced Raman Study of Asymmetrically-Substituted Viologens" *Journal of Physical Chemistry* **1988** *92*, 6978-6985.
8. T. Lu, T. M. Cotton, J. K. Hurst & D. H. Thompson, "A Voltammetric Study of Asymmetric Viologen in an Organic Solvent, Aqueous Solution and Vesicle Systems" *Journal of Electroanalytical Chemistry* **1988** *246*, 337-347.
9. D. H. Thompson & J. K. Hurst, "Intermolecular Transmembrane Redox--Electron Tunneling or Molecular Diffusion?" in *Molecular Electronic Devices III*, F. L. Carter, R. Siatkowski, and H. Wohltjen, Eds., Elsevier, Amsterdam, **1988**, pp. 413-425.
10. B. C. Patterson, D. H. Thompson & J. K. Hurst, "Methyl Viologen-Mediated Oxidation-Reduction Across Dihexadecylphosphate Vesicles Involves Transmembrane Diffusion" *Journal of the American Chemical Society* **1988** *110*, 3656-3657.
11. B. C. Patterson, D. H. Thompson & J. K. Hurst, "Pathways of Transmembrane Redox Reactions for Dihexadecylphosphate Vesicle-Bound Viologens" in *Molecular Electronics—Science and Technology*, Aviram, A., Ed., Engineering Foundation Publications, New York, **1989**, pp. 385-392.
12. P. L. Camacho, E. Geiger, G. Vigh, R. Webster & D. H. Thompson, "Separation of the Enantiomeric Intermediates of Some Platelet-Activating Factor Analogues on a Naphthylalanine-Type Pirkle Column" *Journal of Chromatography* **1990** *506*, 611-616.
13. R. Humphry-Baker, D. H. Thompson, Y. Lei, M. Hope & J. K. Hurst, "Structural Investigations of Dihexadecylphosphate Small Unilamellar Vesicles" *Langmuir* **1991** *7*, 2592-2601.
14. J. M. Kim & D. H. Thompson, "Tetraether Bolaform Amphiphiles as Models of Archaeobacterial Membrane Lipids: Synthesis, Differential Scanning Calorimetry, and Monolayer Studies" *Langmuir* **1992** *8*, 637-644.
15. A. Heuer, D. Fink, V. Laraia, J. Arias, P. Calvert, K. Kendall, G. Messing, J. Blackwell, P. Rieke, D. H. Thompson, A. Wheeler, A. Veis & A. Caplan, "Innovative Materials Processing Strategies: A Biomimetic Approach" *Science* **1992** *255*, 1098-1105.
16. V. C. Anderson & D. H. Thompson, "Photoinduced Morphology Changes in Plasmalogen Liposomes Using Visible Light" in *Macromolecular Assemblies*, P. Stroeve & A. C. Balazs, Eds., *ACS Symposium Series* **1992** *493*, 154-170.
17. V. C. Anderson & D. H. Thompson, "Triggered Release of Hydrophilic Agents from Plasmalogen Liposomes Using Visible Light or Acid" *Biochimica et Biophysica Acta* **1992** *1109*, 33-42.

18. D. H. Thompson & J.-M. Kim, "Photoinduced Charge Transfer Studies in Bolaamphiphile-Gramicidin-Porphyrin Membranes" *MRS Symposium Proceedings, Macromolecular Host-Guest Complexes: Optical & Optoelectronic Properties and Applications* **1992** 277, 93-98.
19. D. H. Thompson, K. Wong, R. Humphry-Baker, J. Wheeler, J. M. Kim & S. B. Rananavare, "Tetraether Bolaform Amphiphiles as Models of Archaeobacterial Membrane Lipids: Raman Spectroscopy, ³¹P-NMR, X-Ray Scattering and Electron Microscopy" *Journal of the American Chemical Society* **1992** 114, 9035-9042.
20. D. H. Thompson, J.-M. Kim & C. DiMeglio, "Photoinduced Charge Transfer Properties of Bolaamphiphile Membrane-Gramicidin Diad and Triad Composites" *SPIE Proceedings, Organic and Biological Optoelectronics* **1993** 1853, 142-147.
21. P. L. Camacho-Torralba, G. Vigh & D. H. Thompson, "High Performance Chiral Displacement Chromatographic Separations in the Normal Phase Mode. Part 1. Retention and Adsorption Studies of Potential Displacers Developed for the Pirkle-Type Naphthylalanine Silica Stationary Phase" *Journal of Chromatography* **1993** 641, 31-38.
22. P. L. Camacho-Torralba, M. D. Beeson, G. Vigh & D. H. Thompson, "High Performance Chiral Displacement Chromatographic Separations in the Normal Phase Mode. Part 2. Separation of the Enantiomers of 1,2-O-Dihexadecyl-*rac*-glycerol-3-O-(3,5-dinitrophenyl)carbamate Using the Pirkle-Type Naphthylalanine Silica Stationary Phase" *Journal of Chromatography* **1993** 646, 259-266.
23. D. H. Thompson, C. B. Svendsen, C. DiMeglio & V. C. Anderson, "Synthesis of Chiral Diether and Tetraether Phospholipids. Regiospecific Ring Opening of Epoxides Derived from Asymmetric Epoxidation" *Journal of Organic Chemistry* **1994** 59, 2945-2955.
24. Y. Rui & D. H. Thompson, "Stereocontrolled Synthesis of Plasmalogen-Type Lipids from Glyceryl Ester Precursors" *Journal of Organic Chemistry* **1994** 59, 5758-5762.
25. D. H. Thompson, O. V. Gerasimov, J. J. Wheeler & V. C. Anderson, "Triggerable Plasmalogen Liposomes: Improvement of System Efficiency" *Biochimica et Biophysica Acta* **1996** 1279, 25-34.
26. Y. Rui & D. H. Thompson, "Efficient Stereoselective Synthesis of Plasmenylcholines" *Chemistry—A European Journal* **1996** 2, 1505-1508.
27. D. H. Thompson, Y. Rui & O. V. Gerasimov, "Triggered Release from Liposomes Mediated by Physically- and Chemically-Induced Phase Transitions" *Surfactant Science Series: Vesicles*, M. Rosoff, Ed.; Marcel Dekker: New York, NY, **1996**, pp. 679-746.
28. O. Gerasimov, A. Schwan & D. H. Thompson, "Acid-Catalyzed Plasmenylcholine Hydrolysis and its Effect on Bilayer Permeability: A Quantitative Study" *Biochimica et Biophysica Acta* **1997** 1324, 200-214.
29. E. Barklis, J. McDermott, S. Wilkens, E. Schabtach, M. Schmid, S. Fuller, S. Karanjia, Z. Love, R. Jones, X. Zhao, Y. Rui & D. H. Thompson, "Structural Analysis of Membrane-Bound Retrovirus Capsid Proteins" *EMBO Journal* **1997** 16, 1199-1213.

30. I. Szeleifer, O. V. Gerasimov & D. H. Thompson, "Spontaneous Liposome Formation Induced by Grafted Poly(ethylene oxide) Layers: Theoretical Prediction and Experimental Verification" *Proceedings of the National Academy of Sciences USA* **1998** *95*, 1032-1037.
31. N. Wymer, O. V. Gerasimov & D. H. Thompson, "Cascade Liposomal Triggering: Light-Induced Ca²⁺ Release from Plasmemylcholine Liposomes Triggers PLA₂-Catalyzed Hydrolysis and Contents Leakage from DPPC Liposomes" *Bioconjugate Chemistry* **1998** *9*, 305-308.
32. E. Barklis, J. McDermott, S. Wilkens, S. Fuller, & D. H. Thompson, "Organization of HIV-1 Capsid Proteins on a Lipid Monolayer" *Journal of Biological Chemistry* **1998** *273*, 7177-7180.
33. S. Svenson & D. H. Thompson, "Facile and Efficient Synthesis of Bolaamphiphilic Tetraether Phosphocholines" *Journal of Organic Chemistry* **1998** *63*, 7180-7182.
34. Y. Rui, S. Wang, P. S. Low & D. H. Thompson, "Diplasmenylcholine-Folate Liposomes: An Efficient Vehicle for Intracellular Drug Delivery" *Journal of the American Chemical Society* **1998** *120*, 11213-11218.
35. O. V. Gerasimov, N. Wymer, D. Miller, Y. Rui, & D. H. Thompson, "Intracellular Delivery of Liposomal Contents Using pH- and Light-Activated Plasmemyl-Type Liposomes" S.M. Dinh, J.D. DeNuzzio, A.R. Comfort, Eds., *ACS Symposium Series* **1999** *728*, 164-178.
36. J. A. Boomer & D. H. Thompson, "Synthesis of Acid-Labile Diplasmenyl Lipids for Drug and Gene Delivery Applications" *Chemistry and Physics of Lipids* **1999** *99*, 145-153.
37. A. Patwardhan & D. H. Thompson, "Efficient Synthesis of 40- and 48-Membered Tetraether Macrocyclic Bisphosphocholines" *Organic Letters* **1999** *1*, 241-244.
38. O. Gerasimov, J. Boomer, M. Qualls & D. H. Thompson, "Cytosolic Drug Delivery Using pH- and Light-Sensitive Liposomes" *Advanced Drug Delivery Reviews* **1999** *38*, 317-338.
39. C. DiMeglio, S. B. Rannavare, S. Svenson & D. H. Thompson, "Phosphocholine Analogs of Bolaamphiphiles: Phase Structure and Mesomorphism" *Langmuir* **2000** *16*, 128-133.
40. A. Patwardhan & D. H. Thompson, "Novel Flexible and Rigid Tetraether Acyclic and Macrocyclic Bisphosphocholines: Synthesis and Monolayer Properties" *Langmuir* **2000**, *16*, 10340-10350.
41. J. Shin, M. M. Qualls, J. A. Boomer, J. Robarge & D. H. Thompson, "An Efficient New Route to Plasmemyl-Type Lipids: Synthesis and Cytotoxicity of a Plasmemylcholine Analog of the Antitumor Ether Lipid ET-18-OCH₃" *Journal of the American Chemical Society* **2001** *123*, 508-509.
42. M. M. Qualls & D. H. Thompson, "Synergistic Phototoxicity of Chloroaluminum Phthalocyanine Tetrasulfonate Delivered via Acid-Labile Diplasmenylcholine-Folate Liposomes" *International Journal of Cancer* **2001** *93*, 384-392.
43. J.-M. Kim & D. H. Thompson, "Acid- & Oxidatively-Labile Vinyl Ether Lipids: Synthesis & Drug Delivery Applications" *Surfactant Science Series: Reactions & Synthesis in Surfactant Systems*, J. Texter, Ed.; Marcel Dekker: New York, NY, 2001, pp. 145-154.

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.