

Themes in Weininger's Research as Revealed in a Representative Selection of His Publications

A. Education in chemistry

S. Weininger, *Contemporary Organic Chemistry*, Holt, Rinehart and Winston, 1972

S. Weininger, F. Stermitz, *Organic Chemistry*, Academic Press, 1984

S. Weininger, F. Stermitz, *Química Orgánica*, Editorial Reverté, 1988

H. Beall, J. Trimbur, S. J. Weininger, "Mastery, Insight, and the Teaching of Chemistry," *J. Sci. Ed. Tech.* **1994**, 3, 99-105.

B. Chemical Research

S. J. Weininger, V.T. Mai, and E.R. Thornton, "Mass Spectral Mechanisms. Homoallylic Participation in Fragmentation of Butadiene-Maleic Anhydride Adduct," *J. Am. Chem. Soc.* **1964**, 86, 3732-35.

S. J. Weininger and E.R. Thornton, "Probable Formation of Cyclobutadiene-type Cations in the Mass Spectral Decomposition of Pyridazines and Tetrazines," *J. Am. Chem. Soc.* **1967**, 89, 2050-54.

A.A. Kutz and S. J. Weininger, "Mass Spectra of Saturated and Unsaturated Derivatives of Thiacyclohexane and 4-Thiacyclohexanone," *J. Org. Chem.* **1968**, 33, 4070-75.

J.A. Kaufman and S. J. Weininger, "Photolysis of Diethyl Diazomalonate in the Presence of Thiobenzophenone," *J. Chem. Soc., Chem. Commun.* **1969**, 953-54.

W.R. Moser, C.J. Papile, D.A. Brannon, R.A. Duwell and S. J. Weininger, "The Mechanism of Phosphine-Modified Rhodium-Catalyzed Hydroformylation Studied by CIR-FTIR," *J Mol. Catal.* **1987**, 41, 271-92.

W.R. Moser, C.S. Papile and S.J. Weininger, "Mechanism of Deactivation in Phosphine-Modified Rhodium-Catalyzed Hydroformylation: A CIR-FTIR Study," *J Mol. Catal.*, **1987**, 41, 293-302.

B. Thibeault, E.M. Stickles, S.J. Weininger and D. Remy, "Unsaturated Polyoxalates: Synthesis and Mass Spectral Study of Their Thermal Behavior," *J Poly. Sci. A* **1990**, 28, 1361-76.

Z. Wang, W.G. McGimpsey and S. J. Weininger, "Photochemistry From the T2 State of Anthracene," *J Phys. Chem.* **1993**, 97, 374-78.

Yijin Ren et al., "Intramolecular Energy Transfer from Upper Triplet States in Rigidly-Linked Bichromophoric Molecules," *J. Am. Chem. Soc.* **1995**, 117, 4367-73.

L. Chen et al., "Hole Transfer Equilibrium in Rigidly Linked Bichromophoric Molecules," *J. Phys. Chem. A* **1999**, 103, 9167-73.

Z. Tan et al., "Intramolecular Singlet-Singlet and Triplet-Triplet Energy Transfer in Adamantyl-Linked Trichromophores," *J. Phys. Chem. A* **1999**, 103, 7612-20.

C. History of Chemistry

"'What's in a Name?' From Designation to Denunciation - The Nonclassical Cation Controversy," *Bull. Hist. Chem.*, **2000**, 25, 123-31.

" Acid and Base" and "Osmosis," in *The Oxford Companion to the History of Modern Science*," Ed. J. L. Heilbron, Oxford U P, 2003, 6-8, 609-10.

"Controversy in Chemistry: What Counts as Evidence? - Two Studies in Molecular Structure," *Angew. Chem. Intern. Ed.*, **2004**, 43, 2612-19 (w. J. Labinger).

"Controversy in Chemistry: How Do You Prove a Negative? The Cases of Phlogiston and Cold Fusion," *Angew. Chem. Intern. Ed*, **2005**, 44, 1916-22 (w. J. Labinger).

"Textbooks and Tensions that Shaped Physical Organic Chemistry in its Formative Years," *J. Phys. Org. Chem*, **2005**, 18, 555-59.

"Letting the Scientists Back In," in *Positioning the History of Science*, Eds. K. Gavroglu and J. Renn, Springer, Dordrecht, 2007, 173-76.

Bartlett, Paul Doughty, in *New Dictionary of Scientific Biography*, Charles Scribner's Sons, Detroit, 2008, 1, 189-95.

"Chemical Brothers: William and Lawrence Knox, African American Chemists," *Chemical Heritage*, **Summer 2010**, 27-31 (w. L. Gortler).

"Chemistry for the 'Industrial Classes': Laboratory Instruction, Mass Education and Women's Experience in Mid-Western Land-Grant Colleges, 1870-1914," *Bull. Hist. Chem.*, **2013**, 38, 97-108. HIST Best paper award.

"Benzene and Beyond: Pursuing the Core of Aromaticity," *Ann. Sci.*, **2005**, 72, 242-57.

"*Private Philanthropy and Basic Research in Mid-Twentieth Century America: The Hickrill Chemical Research Foundation," *Ambix*, **2017**, 64, 1-29 (w. L. Gortler).

"Delayed Reaction: The Tardy Embrace of Physical Organic Chemistry by the German Chemical Community," *Ambix*, **2018**, 65, 52-75.

D. Philosophy of chemistry

S.J. Weininger, "The Molecular Structure Conundrum: Can Classical Chemistry be Reduced to Quantum Chemistry?" *J Chem. Ed.* **1984**, 61, 939-44.

30. "Sooner Silence Than Confusion: The Tortuous Entry of Entropy into Chemistry," *Hist. Stud. Phys. Biol. Sci.*, **1996**, 27, 90-130 (with Helge Kragh).

"Contemplating the Finger: A Semiotic Perspective on Chemistry," *Hyle*, **1998**, 4, 3-27.

"Butlerov's Vision: The Timeless, the Transient, and the Representation of Molecular Structure," in *Of Minds and Molecules: New Philosophical Perspectives on Chemistry*, Eds. N. Bhushan and S. Rosenfeld, Oxford UP, Oxford, 2000, 143-61.

"Additivity, Affinity and the Reification of the Bond," in *Tools and Modes of Representation in the Laboratory Sciences*, Ed. U. Klein, Kluwer, Dordrecht, 2001, 237-51.

"Reactivity and its Contexts," in *Objects of Chemical Inquiry*, Eds. U. Klein and C. Reinhardt, Science History Pub., Sagamore Beach, MA, 2014, 203-36.

"Paper Tools from the 1780s to the 1960s: Nomenclature, Classification, and Representations," *Ambix*, **2018**, 65, 1-8 (w. M. J. Nye).

E. Interdisciplinary research

"Introduction: The Evolution of Literature and Science as a Discipline," in *Literature and Science as Modes of Expression* (Boston Studies in the Philosophy of Science, 115), Ed. F. W. Amrine, Dordrecht, Kluwer, 1989, xiii-xxv.

" Concept and Context in Contemporary Chemistry," in *Beyond the Two Cultures: Essays in Science, Technology and Literature*, Eds., Joseph W. Slade and Judith Yaross Lee Iowa State University P, Ames, 1990, 39-48.

S. J. Weininger and M. D. Samson, "Light, Vision and Understanding," in *Interdisciplinary Courses and Team Teaching*, Ed., James R. Davis, Oryx Press, 1995.

"Chemistry," "Scientific Textbooks," and "Thermodynamics," in *Encyclopedia of Literature and Science*, Ed., P. Gossin Greenwood, Westport, CT, 2002.

Note: Weininger's numerous presentations have been omitted.