



MG 572 - Ron Steer fonds

Dates: 1959-2015 (inclusive); 1978-2010 (predominant).

Extent: 6.04 m of textual material, 87 photographs, 402 negatives, 496 slides, 1 CD, 1 VHS tape.

Biography: Ron Steer received his B.Sc. (1963), Ph.D. (1968) and D.Sc. (1995) degrees from the University of Saskatchewan. From 1968-1969 he did postdoctoral research with Jim Pitts, Jr. at the University of California, Riverside, where he first became interested in the chemistry and relaxation dynamics of electronically excited molecules. He returned to the University of Saskatchewan in 1969 as assistant professor of chemistry. He was promoted to full professor in 1978, served a term as department head from 2002 to 2005, and served as the elected representative of the faculty on the University of Saskatchewan's Board of Governors from 2001 to 2004. He has taught at all levels, from introductory general chemistry, through introductory and advanced undergraduate physical chemistry, to graduate courses in laser chemistry and physics and excited state chemistry. Steer received the Master Teacher award in 1996; was awarded the title of distinguished professor by the University in 2011; and received the John C. Polanyi award (from Canadian Society for Chemistry) in 2013.

Scope and content: This fonds contains materials relating to Steer's education at the University of Saskatchewan and his career: including his research and publications; teaching material; and various presentations and addresses.

Arrangement: It has been organized into 8 series:

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Restrictions: Some material is restricted: please consult with the archivist.

Donated to the University Archives by Ron Steer in 2016.

This accrual brings together accessions 2016-057; 2016-069; 2016-082.

Guide prepared by Cheryl Avery, February 2017

Series 1: University Education

1.1 Undergraduate Classes

1. Biology Drawings. – 1959-1960.
2. Chemistry 102 B – General Chemistry. – [ca. 1960-1961].
Professor McCallum.
3. Chemistry 102 – Lab Manual. - 1959
4. Chemistry 102 – Study Notes.
5. Chemistry 213. – [ca. 1961-1962].
6. Chemistry 213 [and 217]. – 1961-1962.
7. Chemistry 241B – Physical Chemistry – Lab Manual. – 1963-1964.
Includes copy of final exam.
8. Chemistry 249 – [Physical Chemistry]. – [ca. 1961-1962].
9. Chemistry 249 – [Physical Chemistry] – Lab. – 1961-1968.
10. Chemistry 249 – [Physical Chemistry] – Problems and Exams. – 1961-1962.
11. Chemistry 259 – [Organic Chemistry]. – [ca. 1961-1962].
12. Chemistry 259 – [Organic Chemistry] – Lab Reports. – 1961-1962.

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13. Chemistry 259 – [Organic Chemistry] – Problems. – 1961-1962.
14. Chemistry 339. – 1963-1964.
Professor Banerjee.
15. Chemistry 349. – [ca. 1962-1963].
16. Chemistry 349 – Lab.
17. Chemistry 349 – Problems. – 1961-1963, 1968.
Includes chem 339 exam; notes; etc.
18. Chemistry 359 – [ca. 1962-1963]. – 2 folders.
19. Chemistry 359 - Lab Notebooks. – [ca. 1963].

20. Chemistry 408c. – 1963-1964.
Professors Roberts, Abramovitch, and Banerjee.

21. Chemistry 408c – Lab Notebook. – 1963-1964.

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22. Chemistry 440a – Introduction to Quantum Chemistry. – 1963-1964.

23. Chemistry 440a – Problems and Exams. – 1963.

24. Chemistry 459a – [Spectroscopy]. – 1963.
Professor Abramovitch.

25. Geology 101 / 202 / 207 – Lab Manual.

26. Geology 207.

27. Geology 207 – Exams. – 1961-1962.

28. Mathematics 157 – Problems and Notes.

29. Mathematics 157 – Solved Problems. – 2 folders.

30. Mathematics 227. – [ca. 1961-1962].

31. Mathematics 227 – Assignments. – 1961-1962.

32. Mathematics 227 – Notes. – [ca. 1961-1962].
Professor Carman Miller.

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33. Mathematics 237b. – 1962.

34. Mathematics 237B – Exams. – 1963.

35. Mathematics 237b – Notes.

36. Mathematics 260A. – 1962-1963.

37. Physics 102. – 1960-1961.
Study notes, assignments.

38. Physics 102 – Lab Notebook. – 1960-1961.

39. Physics 102 & 111 – Lab Manual.

40. Physics 217 – [Electricity and Magnetism]. – 1963-1964.
41. Physics 217 – Exams and Problems.
42. Physics 217 – Lab Manual. – 1962.
43. Physics 217 – Lab Notebook. – 1963-1964.
44. Physics 351. – 1963-1964.
45. Physics 351 – Exams and Problems. – 1963-1964.

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46. Physics 351 – Lab Manual. – 1960.
47. Physics 351 – Lab Notebook. – 1963-1964.
48. [Notes and Assignments]. – 1962-1966.
Includes “A survey of the Literature Concerning Pulse Radiolysis” (1964); “The Application of Diffusion Kinetics to Some Problems in Radiation Chemistry and Biology” (Physics 856 seminar); summer project final report (1962); “Radiation Chemistry of Nitrates” (1963); notes from Chem 848 seminar (1966).

1.2 Graduate Classes

1. Chemistry 840a – Photochemistry.
2. Chemistry 840a – Photochemistry. – 1965-1966.
Includes some handouts from Chem 449B.
3. Chemistry 841b – Electron Spin Resonance and Nuclear Magnetic Resonance Spectroscopy. – 1965.
4. Chemistry 842b – Thermodynamics. – 1965.
Professor Knight.
5. Chemistry 842b – Thermodynamics – Problem Sets. – 1965.
6. Chemistry 843b – Mass Spectrometry (Audit). – 1967.
7. Chemistry 844A – Symmetry and Group Theory in Chemistry. – 1967.
8. Chemistry 845b – Chemical Kinetics. – 1963-1964.
Audited. Professor Roberts.
9. Chemistry 846b – Statistical Mechanics. – 1964-1965. – 2 folders.
10. Chemistry 847a – Nuclear Chemistry. – 1965-1966.

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11. Chemistry 847b. – 1964, 1966.
Exams.
12. Chemistry 848b – Quantum Mechanics. – 1966.
13. Chemistry 849b – Radiation Chemistry. – 1965.
14. Chemistry 855b – Organic Reaction Mechanisms. – 1968.
Professor C.C. Lee.
15. Physics 841a – Spectroscopy. – 1965.
Professor AV Jones.
16. Physics 856a – Physics of Radiology. – 1965.
Professor Cormack.
17. Physics 856a – [Physics of Radiology] – Assignments. – 1965-1966.
18. Hammond's Lectures. – 13-17 October 1966.
George Hammond (CalTech); part of the Edward Herbert Boomer Memorial Lectures,
University of Alberta.
19. Summary of Dissertation. – 1968.
Thesis defense pamphlet.

Series 2: University of Saskatchewan - General

1. Centres of Excellence in Molecular and Interfacial Dynamics. – nd, 1993.
Includes "Working Together with Industry;" program of sessions and speakers at
Scientific Session, 406 June 1993.
2. Centres of Excellence in Molecular and Interfacial Dynamics – Annual Reports. – 1990-1993. –
RESTRICTED. – 2 folders.
3. Centres of Excellence in Molecular and Interfacial Dynamics – Phase II Application. – 1993. –
RESTRICTED.

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4. Faculty Association. – 1983-1984.
Newsletters, minutes of general meetings, etc.

Series 3: Grants

3.1 - General

1. Killam Program. – 1987-1988. – **RESTRICTED.**
Laser and Supersonic Jet Studies of Molecular Electronic Energy Pooling.
2. NSERC – Strategic Projects Grants. – 2009-2011. – 2 folders. – **RESTRICTED.**
“Improving the efficiency and longevity of sensitized solar photovoltaic cells using non-coherent photo upconversion,” and “Essential equipment for temporal characterization of transients in solar power upconversion systems.”
3. Saskatchewan Structural Sciences Center – Application and Follow up. – 1998-1999. – **RESTRICTED.**
Canada Foundation for Innovation.
4. Western Economic Diversification Proposal. – 2010. – **RESTRICTED.**
Solar Photovoltaic Research Centre.

3.2 Grants and Manuscripts – Reviewed

1. Alberta Ingenuity Fund. – 2007. – textual records, 1 CD. – **RESTRICTED.**
2. Grants - Adjudicated. – **RESTRICTED.**
3. Manuscript Reviews. – **RESTRICTED.**

Series 4: Talks and Addresses

1. Atlantic Tour. – 2000.
Overheads, notes for talks given at the University of Loughborough and Kyoto.
“Structure and Relaxation Dynamics of Highly Excited Valence States of Polyatomic Molecules,” and “Structures and Relaxation Dynamics of Anomalously Fluorescent Molecules.”
2. Chem 300 Lecture.
Chemical Research and the Scientific Paper.
3. [Chemistry] Department Seminar – 11 January 1983 – PS Dynamics.
Overheads; some notes.
4. [Chemistry] Department Seminar – 25 November 1997.
“Dressing the Bare Molecule: Studies of Van der Waals Complexes and Clusters.”
University of Saskatchewan. Overheads, notes.
5. [Chemistry] Department Seminar – 8 January 2002.

“Highly Excited Valence States of Polyatomic Molecules: From Spectroscopic Curiosity to Photonics Applications.” University of Saskatchewan. Overheads, notes. Includes copy of “Photophysics of collision-free thiophosgene: Confirmation of the role of the promoting mode in radiationless transitions” (Moule and Lim).

6. CIC [Chemical Institute of Canada].
“Electronic Energy Pooling in Molecules by Excited State Annihilation.”
7. CIC / CSC Atlantic Tour. – November 1999.
Correspondence.
8. CIC Symposium. – 1999.
“Control of the Photophysical Properties of Polyatomic Molecules by Substitution and Solvation: the Second Excited Single State of Azulene.” Overheads, notes.
9. Ciset Meeting. – 2001.
Correspondence, minutes from the Advisory Committee on Genetic Experimentation and Biotechnology (ACOGEB).
10. CSC [Canadian Society for Chemistry] Conference. – 1996-2015. – 67folders.
Each folder may include proposals, abstracts, and other materials (usually administrative) associated with the conferences.
Folder 1: St. John’s., 1996.
Folder 2: Windsor, 1997.
Folder 2: includes minutes. Montreal, 2001
Folder 3: Halifax, 2006

Folder 4: Winnipeg, 2007.
Folder 5: Calgary, 2013.
Folder 6: Ottawa, 2015.
11. [CSC] - Proton Transfer Talk. – 1997, 1998, 2000.
“Spectroscopy and Photophysics of Tropolone in Solution and in its Van Der Waals Complexes and Clusters,” given at the Canadian Society for Chemistry (CSC) Conference in Windsor; “Structures and Dynamics of Excited Tropolone: Radiationless Decay, Intramolecular Proton Transfer and the Effects of Solvation,” given at the Great Lakes Photochemistry Symposium in London, Ontario and the following year at the CSC conference in Whistler BC; “The Effects of Solvation on Proton Transfer Reactions: the Medium is the Message” and “A Systematic Study of the Spectroscopy and Photophysics of Tropolone in Clusters and in Condensed Media,” given at the Canadian Society for Chemistry (CSC) Conference at the University of Calgary. Includes overheads, offprints.
12. [CSC] – Western Canada Undergraduate Chemistry Conference. – 1997.
Administrative material, together with notes: “Faster, Colder, Higher Resolution: Olympian Goals of Chemical Physics,” for conference in Winnipeg.
13. [77th CSCCE] – Talk in Winnipeg. – 1994.

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Includes overheads and notes for two (related) talks: "Structures and laser-Induced S_2 - S_0 Fluorescence Spectra of Van der Waals Complexes of Azulene, Xanthione and Related Compounds" [believed to be the talk as given]; and S_2 - S_0 Laser-Induced Fluorescence Spectroscopy of Azulene and its Van der Waals Complexes in a Supersonic Jet."

14. Dynamics Workshop – VCVR. – 1992.

Includes offprints, "Time resolution limits for two-color pump/probe spectroscopy" (Alavi and Waldeck); "Pump-Probe Measurements of the S_1 Decay of Azulene and Derivatives in Polar and Nonpolar Solvent" (Wagner, Szymanski, Steer); and "Radiationless Decay of the S_2 States of Azulene and Related Compounds: Solvent Dependence and the Energy Gap Law" (Wagner, Tittelbach-Helmrich and Steer)" overheads (including 1988-89 CEMAID proposal); notes. See also below, Talk in VCVR.

15. Great Lakes Photochemistry Symposium. – 1997.

Correspondence and abstract.

16. H_2CO H_2CS Calc[ulations?] Grein / Hachey. – 1995.

Overheads, notes; includes copy of "The Spectroscopy of H_2CS ..." by MRJ Hachey and F. Green. Also included is a pamphlet on the International Meeting of Physical Chemistry conference; and materials related to classes and associated library forms at the University of Saskatchewan.

17. Holy Cross High School Science Festival. – 1989, 1995. – 2 folders.

Folder 1 (1989): "Lasers." Program; copy of The Spectrum; correspondence; overheads; notes for "The Light Fantastic..."

Folder 2 (1995): "Lights, lasers and the Frontiers of Science" Program, correspondence, notes. See also below, Separate Schools Science Festival.

18. IAPS [International Association of Physics Students?] Talk. – 1992.

"Quenching of the S_2 States of Thiones in Solution: Correlations with the Properties of 1:1 Van Der Waals Molecules." Overheads and notes.

19. ICP [International Conference on Photochemistry] – London. – 1995. – 2 folders.

"Evidence of a solvent-mediated barrier to radiationless decay in the B (1A_1) state of thiophosgene in solution." Also includes abstract for " S_2 - S_0 Spectroscopy of Azulene and Related Compounds and their Van Der Waals Complexes in a Supersonic Jet;" program; correspondence.

20. ICP [International Conference on Photochemistry] – Nara, Japan. – 2003.

Related e-mail, abstract for "Energy Transfer Involving Higher Electronic States: A New Direction for Molecular Logic Gates."

21. XXII Informal Conference on Photochemistry. – 1996.

University of Minnesota. Promotional material only.

22. 4th International Conference on Solar Energy Storage & Applied Photochemistry. – 1995-1997.

Cairo. Includes promotional materials; program; correspondence; a copy of Steer's offprint "Electronic Energy-Pooling Processes in Polyatomic Molecules;" his presentation was titled "Electronic Energy Pooling via Highly Excited Electronic States."

23. International Laser Science Conference – Poster.
"The Dynamics of Electronically Excited Thiophosgene in Solution." In Minneapolis. Notes, graphs. Includes abstract (proposal) for the Canadian Chemical Conference.
24. Math-Physics Group. – 25 September 2009.
University of Saskatchewan.
25. Misc[ellaneous] O.H.s [Overheads].
Overhead of Murphy's Law.
26. MUCS Seminar. – 1996.
University of Melbourne Chemical Society.
27. Pacifichem Invitational Talk. – 1985-1986, December 1989.
Includes offprints, "Three Exponential Fluorescence Decay of Horse Liver Alcohol Dehydrogenase Revealed by Iodide Quenching;" "Fluorescence Lifetime Quenching and Anisotropy Studies of Ribonuclease T1;" abstract for "Thione Photochemistry and Photophysics: Explorations of Highly Excited Electronic States," submitted to the International Chemical Congress of Pacific Basin Societies; notes.
28. Pacifichem – 1995.
International Chemical Congress of Pacific Basin Societies. Includes program, correspondence, abstract for poster presentation, "Proton Tunneling in Tropolone and Related Compounds and their Van Der Waals Complexes."
29. Phys Chem Sem[inar]. – October 1996.
Overhead and notes for "Excited State Dynamics: Azulene Revisited."
30. Physics Department Seminar. – 12 September 1996.
"The Dynamics of Polyatomic Molecules Excited Under Isolated Conditions and in Solution." University of Saskatchewan. Includes promotional material, overheads and notes.
31. Poland – Seminar – Small Thiocarb.
Overheads, notes.
32. Posters – [CEMAID] and CSC. – nd.
Copies of diagrams, overheads, etc.
33. RISE Conference. – 1999. – **RESTRICTED.**
Reactive Intermediate Student Exchange Conference, University of Alberta.
Correspondence, minutes, abstracts.
34. RISE Workshop. – 1998.

Correspondence, promotional material; minutes.

35. Sabbatical – 2005 – Talk. – 2004-2005.

“Photophysical Processes in Short-lived Highly Excited Valence States of Polyatomic Molecules,” given at various locations (Kyoto, Otago, Canterbury, Melbourne, Nanyang); together with “Intermolecular photoprocesses in short-lived electronic excited states: Is prior assembly required?” given at the CSC in London, Ontario, in 2004. Notes, overheads.

36. Seminar. – nd.

Notes, overheads, graphs.

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37. Seminar [McMaster, York]. – 1988.

Notes, overheads.

38. Seminar – Guelph. – 1998.

“Photophysics and Spectroscopy of Upper Excited Electronic States of Polyatomic Molecules.”

39. Separate Schools Science Festival. – 1982.

“The Light Fantastic – From Sunlight to Lasers.” Notes, program, correspondence. See also above, Holy Cross High School Science Festival.

40. Singlet Oxygen Seminar. – 1969-1972.

Notes; illustrations. Includes related offprints.

41. Symposium on Chemical Physics. – 2001.

Program, overheads, notes. Symposium held at the University of Waterloo.

42. Symposium on Physical Organic Photochem. – 1994-1995.

Poznań, Poland. Correspondence, program, material from Elsevier, etc.

43. Talk at UBC (CEMAID). – nd, 1990.

[“Why is SSA observed so Infrequently?”]. Includes material relating to a poster presented at the XIIIth IUPAC Symposium on Photochemistry in Coventry, UK. Notes, correspondence, graphs.

44. Talk in Edmonton.

Overheads for “How to Study Highly Excited States;” “Photophysical, Photochemical and Spectroscopic Studies of Aromatic Thiones: From Van Der Waals Complexes to Bulk Solutions;” includes “The Ultrafast, the Ultracold and the Ultraweak” (see below, Talk in VCVR).

45. Talk in Guelph. – 1995.

“Solvent mediation of a barrier to photodissociation. Evidence from the radiationless relaxation of the S₂ state of thiophosgene.” Canadian Society for Chemistry Conference.

46. Talk in VCVR – Student Conference. – nd.
“The Ultrafast, the Ultracold and the Ultraweak.” Single overhead. See also above, Talk in Edmonton. See also above, Dynamics Workshop.
47. Talk in Victoria.
Includes a copy of the paper, “Photophysics and Intramolecular Photochemistry of Adamantanethione, Thiocamphore and Thiofenchone Excited to their Second Excited Singlet States: Evidence for Subpicosecond Photoprocesses” (Falk and Steer); abstract for “Ultrafast Dynamics of the Second Excited Singlet States of some Bicyclic and Tricyclic Thiones” (Falk and Steer); overheads and notes.
48. Tanaka Symp[osium]. – 1997.
Symposium in honour of Ikuzo Tanaka: “New Aspects of Photochemistry and Reaction Dynamics.” Steer spoke on “Studies of the Photophysics of Molecules with Long-Lived Second Excited States.” Correspondence, administrative materials, etc.
49. Terenin Memorial International Symposium on Photochemistry and Photophysics of Molecules and Ions. – 1995-1996.
Correspondence and promotional material. Steer was invited to attend, but was unable to do so. Symposium held in St. Petersburg.
50. “Thiocarbonyls.”
[Energy Pooling?].
51. Thione S₂ Photophysics / Photochemistry Seminar.
Overheads, notes, graphs.
52. “Tryptophanyl Fluorescence in RNA_{SE} – T1 and LADH.”
Overheads.
53. “Upper Singlet State Dynamics and Triplet-Triplet Annihilation in Metalloporphyrins.” – 2008.
Promotional material for lecture given at the University of Melbourne.
54. Van Cleave Lectures. – October 1994.
At the University of Regina. Two lectures: “Faster, Colder, Higher Resolution: Achievements in the Photochemistry and Photophysics Olympics;” and “Anomalously Fluorescent Molecules: Probes of Excited State Dynamics in Condensed Media.”
Correspondence, promotional material, notes.
55. Visit to Edmonton. – 1995-1996.
Correspondence, overheads, and notes. “Lessons in Excited State Chemistry: You Learn the Most When You Break the Rules.”
56. Western Spectroscopy Association Conference. – 1996.
Program with abstracts. Steer was not a speaker at this conference [and there is no evidence he attended].

Series 5: Teaching

1. Air Pollution Labs.
 2. Chem 102 – Lecture Notes.
 3. Chem 111 – Treatment of Experimental Numerical Data. – 1995.
Correspondence.
 4. Chem 111.3 – Case Studies. – 1995.
Drafts.
 5. Chem 206. – 1979-1981.
 6. Chem 206 – Examinations and Miscellaneous. – 1977-1981.
 7. Chem 206 – Handouts.
See also below, environmental chemistry.
 8. Chem 213 – Lecture Notes. – 2 folders.
 9. Chem 231A. – 1972-1974.
- Box 10**
10. Chem 213A/B
 11. Chem 213A – Lab Manual.
 12. Chem 214B. – 1972-1973.
 13. Chem 219A – Lab Manual. – 1974.
First edition.
 14. Chem 219B. – 1978-1979. – 2 folders.
Lecture notes.
 15. Chem 219B – Problem Assignment Solutions. – 1978-1989
 16. Chem 243.3. – 1997-2000. – 4 folders.
Course outline, exams, assignments; [lecture] notes. Also includes some reference articles: “The Principle of Uncertainty;” “Aspects of Molecular Modeling;” “Mathematical Recreations: Repealing the Law of Averages;” etc.
 17. Chem 243.3 – Lab. – 1997-1998.
Includes information on HyperCube / HyperChem
 18. Chem 247 Sections 1 and 2. – 1985-1986. – 2 folders.

Folder 1: Overheads, problem labs, and exams – Box 10

Folder 2: Assignments – Box 11

Box 11

19. Chem 247 – Lectures. – 1985-1986. – 2 folders.
 20. Chem 306. – 1988-1989. – 2 folders.
Includes course outline, exams, assignments; overheads and notes; reference articles, “Global Climatic Change;” “Chlorofluorocarbons and the Depletion of Stratospheric Ozone;” “Urban Air Pollution: State of the Science;” diagrams of atmospheric sulfur cycles; “Changes in Stratospheric Ozone;” “Antarctic Ozone Hole: Complex Picture Emerges;” etc.
 21. Chem 306 – Reference Material. – nd, [ca. 1974-1987] – 2 folders.
Includes numerous articles on the ozone hole; the Royal Society Conference on Acid Rain; origin of the chemical elements; interstellar molecules; star dust; conversion processes, including oil and gas from coal, or the Brazilian use of ethyl alcohol; the energy crisis; the flow of energy in an industrial society; “how the Swedes live well while consuming less energy;” nuclear waste; efficient use of energy; desalination; water; drought; solar energy; hydrogen; biomass fuels; the modern sulphuric acid process; etc.
 22. Chem 342.3. – 1997-2007. – 7 folders.
Course outline, exams, assignments. Includes “Energy States of Molecules.” Material from 2008 relates only to SEEQ Online.
 23. Chem 342 – Assignments / Exams. – 2001-2003.
 24. Chem 342 – Labs.
 25. Chem 342 – XAS of CO. – 2006.
Materials and correspondence relating to an experiment using the CLS beam, “Vibronic Features in the X-ray Absorption Spectra of Carbon Monoxide” and “Vibronic Structure in the X-ray Absorption Spectra of Simple Gas Molecules.”
 26. Chem 342.3 – Lab Manuals. – [1998]; revised 2001.
Includes drafts.
 27. Chem 342.3 – Magnetic Resonance Material.
Assignments with answers; notes; overheads.
 28. Chem 342.3 – Replacement Procedure for Experiment 7: Raman Spectra.
 29. Chem 343.3 – Lab Development. – 1997.
- Box 12**
30. [Chem 342.3] – Vib-Rot Spec[rum of] Ha.
Overheads and notes.

31. Chem 349B. – 1979-1980.
Reserve list and course outline.
32. Chem 349.3. – 1982-1983.
33. Chem 349.3. – 1987-1988.
34. Chem 349.3. – 1993-1994, 1996-1998. – 2 folders.
35. Chem 349.3 – Handouts, Exams, Etc. – [ca. 1978-1987].
36. Chem 349.3 – Notes. – 1987-1989.
37. Chem 349B – Prob[lem] Assign[ments]. – nd, 1980.
38. Chem 408A. – 1963, 1974-1975, 1980-1984. – 6 folders.
Folder 3 includes class evaluations;
Folder 4 includes an exam from 1963; Chem 838A problem.
39. Chem 408C – Electrochemical Methods. – 1970-1971.
Notes, handouts, etc. Includes copies of “Controlled Potential Electrolysis” (Kennedy, Adamo); “A Coulometric Titration Experiment” (Beilby, Landowski)
40. Chem 446A. – 1975-1979. – 3 folders.

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41. Chem 447.3 – T2 – 1995-1996.
Statistical Mechanics and Chemical Kinetics. Notes, overheads, assignments, exams, etc.
42. Chem 449B. – 1971-1984. – 4 folders.
Notes, assignments, exams.
Folder 1: 1971-1972.
Folder 2: 1980-1981.
Folder 3: 1981-1982.
Folder 4: 1983-1984.
43. Chem 480. – 1983-1984, 1985-1986.
Regulations and guidelines for student assessments. File also includes [unrelated?] notes, and copies of offprints: “Visible Multiphoton Dissociation of Gallium Trimethyl: Time-Resolved Multiphoton Ionization of Gallium Atoms” (Mitchell and Hackett); “Pulsed visible laser photolysis of $B(C_2H_5)_3$, $Al_2(CH_3)_6$, $Ga(CH_3)_3$, and $In(CH_3)_3$: Multiphoton ionization spectra of Al, Ga, and In atoms” (Mitchell and Hackett); “Polythium Organic Chemistry: A Research Area of Emerging Significance” (Lagow and Gurak); and “Time-Resolved LIF Detection of Silylene in the IR MPD of Ethylsilane” (Rayner, Steer, Hackett, Wilson and John).
44. Chem 480C. – 1976-1977, 1983-1984. – 2 folders.

45. Chem 834.3 – Laser Chemistry and Physics. – 1986-1988.
Includes application for approval; course outline.
46. Chem 838. – 1971-1999, 2004-2005.
Notes, overheads, copies of earlier exams, etc.
47. Chem 838.3 – T1. – 2004-2005. – 2 folders.
Notes; some overheads.
48. Chem 840B – Atmospheric Chemistry and Photochemical Air Pollution. – 1970-1972.
Includes lecture notes; handouts; proposal for offering course; exams; etc.
49. [Chem 841B] - NMR [Nuclear Magnetic Resonance]. – 1971-1972.
50. Chem 845B – Advanced Kinetics. – 1977-1978.
51. Curricula / Lab Manuals / Exams Etc. – Other Universities. – nd, 1973-1978.
Includes undergraduate chemistry guide, exams from the University of Southampton, lab manuals from the University of Edinburgh; problems and notes from Oxford; and the chemistry 249 manual (1978) from the University of Saskatchewan. Note that within that manual, there is also a handout on “Introduction to the Use of Computers.”

Box 14

52. Env[ironmental] Chem[istry] Overheads.
53. Environmental Chemistry – Proposed Class. – 1976.
54. Laser Lecture – One Hour Introductory – [Chem] 319A.
Notes, handouts. Includes notes for Chem 408.
55. Laser – Mode Structure.
Overheads.
56. Lasers – General.
Overheads.
57. Man and Biosphere – Energy Lecture. – 26 February 1974.
Overheads; reference material, including “The Energy Plantation,” “The Energy Cycle of the Earth,” “Magnetic Containment Fusion,” “Nuclear Energy Reserves and Long-Term Requirements,” etc.; notes; etc.
58. Pollution, Population and World Energy Resources – Seminar.
Handouts.
59. Resource Materials for Environmental Chemistry.
60. Unitel Program. – 1 videocassette.

Series 6: [Reference Material] – Offprints and Works by Others

6.1 Offprints

This series primarily contains offprints by others, many with attached notes. Some were in titled file folders; the remaining offprints were together but unfolded, and have simply been identified here as “Untitled.”

1. HNO₃ & HNO₂ Vapor. – nd.
2. Hg photosensitization.
3. UV – Vis Chemilumin [with] Dioxetanes.
4. IR Chemiluminescence.
5. S Atoms [Sulfur atoms].
6. O-Atom Reactions. – 2 folders.
7. Oxygen Perturbation.
8. S CPDS – Liq Phase Photochem etc.
9. Sulfur DPDS – Data Structures, etc.
10. Nitrenes.
11. S-CPDS Gas Phase Photochem. – 2 folders.
12. Untitled. – 7 folders.

Folder 1: Box 15
Folders 2-7: Box 16

Box 15

Box 16

Box 17

6.2 Other

1. Directory of Canadian Physicists. – nd.
2. Laboratory Experiments in Radiation Biology. – 1972.

3. Theses. – 1973-1977. – 2 folders.

Folder 1: D. Capitano, Absorption and Emission Properties of Aromatic Ketones and Thioketones: Xanthone, Thioxanthone, Xanthione and Thioxanthione (PhD, Northeastern, 1973); K. Kalyansundarm, Physical Studies on the Dynamical Structures of Micellar Assemblies (PhD, Notre Dame, 1977).

Folder 2: T. Nemzek, Single Photo Counting and the Measurement of Transient Effects in Diffusion-Controlled Fluorescence Quenching (PhD, U Minn, 1975).

Series 7: Research

7.1 Research - General

This subseries generally contains lab notes; various drawings; etc.

1. BIS – (1,3-Trifluoromethyl) benzene + pyrrole – Quenching Results.
2. Sulfone Solution Phase Results.
3. Designs. – nd, 1969.
4. Drawings – Equipment, Etc.
5. Research Reports, Proposals. – 1969.
6. Some Procedures for Preparation and Purification for Various Compounds Used in the 1978 Summer.
L. Paul.
7. Andrzej's Work.
8. CL2CS – [Lab Notebook]. – 1980.
9. H2CS – [Lab Notebook]. – 1980.
10. D. Clouthier Book 1.
11. D. Clouthier Book 2. – 1976.
12. D. Clouthier Expt. Book 4.
13. D. Clouthier Expt. Book 5. – 1977.
14. D. Clouthier Expt. Book 7.
15. D. Clouthier Expt. Book 8.
16. RAO Results.
17. RPS – Tables.

18. Spectra: Thiocarbonyls and Kerone analogues – Troy WS Turner. – Summer 1990.
19. Styrene – Results. – [ca. 1976].
See also Publications – Drafts and Correspondence – “Styrene Papers.”
20. Papers and Results. – 1971-1976.
Includes various offprints by others, with notes and data from Steer.
21. Lamp & Housing, etc. – Designs. – nd, 1974. - textual records, 12 photographs.

Box 18

22. Miscellaneous Results – Lifetimes for Equipment Checks, etc. – Biphenyl.
23. P-difluorbenzene + CF₃H etc. Vib'l Relaxtion Results.
24. Gas Phase Styrene System Results.
25. R. Steer # 1. – 1984-1985.
Notes on equipment; various designs; charts and graphs; research notes.
26. ClFCS – Dennis Clouthier Reports, Data, Etc. – 1976.
27. Andrea Dyck – Spectroscopic Studies of Fluorescence Probes for Industrial and Environmental Use. - 1 May – 31 Aug 1995. – 11 folders.
Folder 1: Quinine Sulfate – P-1a; May 1995; pp. 11-14; 19-40
Folder 2: Rhodamine 590 Chloride (6 G); P-1b; 3 May 1995; p. 15-17
Folder 3: Coumarin 460; P-2a; 30 may 1995; pp. 69 →
Folder 4: Coumarin 500 (20% dioxane, 80% HxO = solvent); P-2b; 1 June 1995; p. 81.
Folder 5: Rhodamine 6G (590) Perchlorate; P-2c; 16 May 1995; pp. 43-52
Folder 6: Stilbene 420 (10⁻⁵M); P-2d; 31 May 1995; pp. 75→
Folder 7: Sodium Fluorescein (Uranine); P-2e; 24 May 1995, 12 June 1995; pp. 53-56; 97
101
Folder 8: Sea Water Recipes; P-2f; 25 may 1995.
Folder 9: Toxicology; P-2g; June-July 1995.
Folder 10: Bear Fur; P-2h; 26 Aug 1995
Folder 11: Report and notebook
28. Overlays.
29. S. Levine – Reports Etc. + M. Waslen Lit.
30. Lit Survey, AM's stuff, Outlines. – 1992.
31. Oversize Material. – See O/S H12.

Includes "A. Bruno's Work;" Spectra: series of photographic images mounted on Bristol board, together with 11 unmounted images and 75 negatives; "Thioketenes" – charts; "Danger, Caution" signs.

7.2 Publications

These were kept in roughly chronological order by Steer; that organization has been retained.

Folder 1: 1960s.

Folder 2: 1970s.

Box 19

Folder3: 1980-1983

Folder 4: 1984-1989

Folder 5: bound copy of the Journal of Photochemistry & Photobiology; dedicated to Professor Paul de Mayo.

Folder 6: 1990-1994

Folder 7: 1995-1999

Folder 8: 2000-2007

Folder 9: 2008-2014

7.3 Publications – Drafts and Correspondence

1. Cl_2 CSI G.S. Equil. – nd, 1992.
Notes and drafts of "Thiophosgene Monomer – Dimer Equilibria in Perfluoroalkane Solutions: Spectroscopic and Photophysical Implications of Self-Association in the Ground State" (Maciejewski, Szymanski, Steer).
2. $ClCS$ B→X Em. Spectrosc. – 1979.
Notes, correspondence and drafts of "Second Excited Singlet State Emission Spectroscopy of Thiocarbonyls. II. Thiocarbonyl Chlorofluoride" (Hackett, Clouthier, Knight, Steer).
3. Kapur, Steer, Mezey – Thiourea (Pt. III).
Notes, correspondence and drafts of "Ab initio SCF MO Calculations of the Potential Surfaces of Thiocarbonyls. III. Ground State and First Excited Triplet State of Thiourea, $(NH_2)_2CS$."
4. Sehgal, Steer, Sutherland & Verrall, JCP. – 1978.
Correspondence regarding "Sonoluminescence of argon saturated alkali metal salt solutions as a probe of acoustic cavitation."
5. Kapur, Steer & Mezey, J. Chem. Phys. II. – 1978.
Regarding "Ab initio SCF MO calculations of the potential surfaces of thiocarbonyls. II. H_2CS , $HFCS$, $ClFCS$ and Cl_2CS ."
6. Chem. Phys. Letters. DJC, ARK, RPS, PAH, Cl_2CS – 1978-1979.
Regarding "Photophysics of the B^1A_1 State of Thiosposgene" (Clouthier, Knight, Steer, Hackett).

Box 20

7. Clouthier, Knight, & Steer, Chem. Phys. Lett. C_2CS . – 1978.
Regarding “Second Excited Singlet State Fluorescence of C_2CS .”
8. Steer, Swords, & Phillips, Chem Phys, V’B’L Relax’N. – nd, 1977.
Regarding “Vibrational relaxation in first electronically excited singlet state of fluorobenzenes.”
9. Mezey, Steer & Kapur, J. Chem. Phys., ab initio...I. F_2CS . – 1978.
Regarding “*Ab initio* SCF MO calculations of the potential surfaces of thiocarbonyls. I. x^1A_1 and a^3A_2 electronic and $a^3A_2(b_1)$ vibrational states of F_2CS .”
10. Rayner, Steer, Hackett, Wilson & John, Time-Resolved... . – 1985.
Regarding “Time-resolved LIF detection of silylene in the IR MPD of ethylsilane.”
11. Falk, Knight, Maciejewski & Steer, Adamantanethione S2 JACS. – 1984.
“Concerning the Lifetime of the Second Excited Singlet State of Adamantanethione.”
12. Thione S_2 - S_1 Energy Gap Law – Maciejewski, Amiri, Verrall & Steer. – 1983-1984.
“Radiationless Decay of the Second Excited Singlet States of Aromatic Thiones: Experimental Verification of the Energy Gap Law.”
13. Nitroso DPD S_2 Non Fluor – Condirston, Knight, & Steer. – 1980.
“Do aromatic C-nitroso compounds fluoresce from their second excited singlet states?”
14. O-O-P by G-Matrix – Kapur, Mezey & Steer. – 1979-1980.
“Calculation of the Out-of-Plane Bending Coordinates of Tetraatomic Molecules by the G-Matrix Method.”
15. $CFCS$ S_2 Laser Photophysics. – 1979.
“Laser Excitation Study of the Second Excited Singlet State Photophysics of $CFCS$.”
16. CCS $B \leftarrow X$ Abs Paper. – 1979.
“The $B(^1A') \leftarrow X(^1A')$ Spectrum of CCS ” (Clouthier, Knight, Steer, Judge, Moule).
17. Sinha, Abou-Zied, Ludwiczak, Maciejewski, Steer – CPL HC/PF Solvations of Az/XT. – 1994.
“Origins of the Differences in Solvation by Alkanes and Perfluoroalkanes: Evidence from the $S_2 - S_0$ Spectra of Jet-Cooled van der Waals Complexes of Xanthione and Azulene.”
18. CCS Theory, F. Grein Next Paper. – 1992.
“The Structure and vertical Excitation Energies of the Chlorothioformyl Radical, CCS : Implications for the Photofragmentation of Thiophosgene” (hachey, Grein, Steer).
19. Azulene S_2 Decay: Rough Draft and Notes – RPS copy. – 1992.
“Radiationless Decay of the S_2 States of Azulene and Related Compounds: Solvent Dependence and the Energy Gap Law” (Wagner, Tittelback-Helmrich, Steer).
20. Electro optic XT & PT Paper – Sinha, Abour-Zied & Steer. – 1992.

“Ground and Excited State Dipole Moments of Pyranthione and Xanthione by the Electro-Optic Method.”

21. Sinha & Steer – SPL – XT / BPT + N₂/CO. – 1992-1993.

“S+-S+ Fluorescence Excitation Spectroscopy of van der Waals Complexes of Xanthione and Benzopyranthione with N₂ and CO.”

Box 21

22. Judge, Moule, Bruno & Steer – a & x of CH₃CHS. – 1987.

“Thiocarbonyl spectroscopy: methyl torsional vibrations and internal rotational barriers of thioacetaldehyde in its a³A” and X¹A’ states.”

23. Simard / Bruno / Steer – H₂CS / F₂CS / C₂CS. – 1985.

“Potential Energy Surfaces for the Molecular and Free Radical Dissociations of H₂CS, F₂CS / C₂CS: an Ab Initio SCF-MO Study.”

24. S₁ – T₁. – 1990.

“Concerning apparent intersystem crossing efficiencies in molecules with small S₁ – T₁ energy gaps (Szymanski , Maciejewski, Steer).

25. Skalski, Steer, Verrall – JACS. – 2990.

“Photochemistry of N-[9-(2', 3', 5'-Tri-)acetyl-beta-D-ribofuranosyl)-purin-6-yl]pyridinium chloride in Aqueous Solutions; Mechanism of the Formation of Tri-)acetyl-luminarosine.”

26. Photophysical Properties of Pyridinium Salts Derived from Purine Bases.” – 1990.

Skalski, Paszyc, Adamiak, Steer, Verrall.

27. Photophysical Studies of Luminarosine.... 1989.

“Photophysical Studies of Luminarosine – a New, Highly Fluorescent Ribonucleoside having Pteridine-like Betaine as the Aglycone” (Skalski, Paszyc, Adamiak, Steer, Verrall).

28. T₁, T₂ Adthione etc. – Falk & Steer. – 1989-1990.

“Thermally Activated Emission of Adamatanethione, Thiofenchone and Thiocamphor.”

29. Photophysics of l-phenyl-2-butene. – 1977.

Steer and Salisbury.

30. Sehgal, Steer, Sutherland, & Verrall – Sonoluminescence. – 1977.

“Sonoluminescence of Aqueous Solutions.”

31. JCP Full Paper – C₂CS. – 1975.

“A Spectroscopic Study of Fluorescence from the Second Excited Singlet State of Thiophosgene Vapour” (Oka, Knight, Steer).

Box 22

32. T. Oka – Reports, etc. - C₂CS et al. – 1976.

33. Steer & Phillips – Fluor. Decay of Cl_2CS Vapour Excited to S_2 . – 1977.
“Fluorescence decay of thiophogene vapour excited to its second excited singlet state.”
34. [C=S] Review. – 1977, 1982.
“Structure and Decay Dynamics of Electronic Excited States of Thiocarbonyl Compounds.”
35. Falk & Steer – S_2 of Adam-, Thiofench-, Thiocamph- - JACS. – 1989.
“Photophysics and Intramolecular Photochemistry of Adamtanethione, Thiocamphor and Thiofenchone Excited to their Second Excited Singlet States: Evidence for Subpicosecond Photoprocesses.”
36. J. Li – CJC - Cl_2CS E_a in Solvents. – 1994.
“Evidence of a Solvent-Mediated Barrier to Radiationless Decay in the B (1A_1) State of Thiophosgene in Solution.”
37. Cl_2CS III S_2 [Monom]. – 1993.
“Photophysics of UV-Excited Cl_2CS in a Perfluoroalkane Solvent.” Maciejewski, Szymanski, Steer.
38. CPL, Phosph of 4H-Pyran-4-Thione. – 1986-1987.
“The Phosphorescence of 4H-Pyran-4-Thione: large Quantum Yields from Room Temperature Fluid Solutions” (Szymanski, Steer, Maciejewski).
39. D Isotope Effect – XT S_2 Radiationless Decay. – 1986-1987.
“Unusual Deuterium Isotope Effect on the Radiationless Decay of Xanthione S_2 ” (Abrams, Green, Steer, Szymanski).
40. Adamantanethione Rydberg. – 1986-1987.
“Rydberg States in Adamantanethione, Thiofenchone and Thiocamphor” (Falk, Steer).
41. LADH Paper → Biochemistry – Original. – 1984.
“The Quenching and Wavelength Dependence of SADH Fluorescence by Time Resolved Fluorescence Spectroscopy” (James, Demmer, Steer, Verrall).
- Box 23**
42. Simard & Steer Br_2CS . – 1984.
“Vibronic Analysis of the $A(^1A_2) \leftarrow X(^1A_1)$ Spectrum of Br_2CS .”
43. Simard, Hackett, Moule – JMOL Spec. – 1987.
“A-X Laser Excitation Spectroscopy of BrC/CS and Br_2CS at Room Temperature and in Cold Supersonic Jets.” Note: see below, Simard, Hackett & Steer.
44. Bruno, Moule, Steer – $CH_3CHS (CH_3)_2CS$. – 1988.
“Decay Dynamics of the Lowest Triplet and Lowest Excited Singlet State of Thiactaldehyde and Thioacetone.”

45. S₂ Quenching – JACS Full Paper. – 1984.
“Relaxation of the Second Excited Singlet States of Aromatic Thiones: The Role of Specific Solute-Solvent Interactions” (Maciejewski, Demmer, James, Safarzadeh-Amiri, Verrall, Steer).
46. Meath, Tran, Wagner, Steer. – 1993.
“Perturbative Treatments of Pump-Probe Laser-Molecule Interactions with Applications to Azulene and Trimethylazulene.”
47. AZ in Viscous Solvents. – 1993.
“The Effect of Solvent Viscosity on the Population Relaxation Times of the S₁ States of Azulene and Related Compounds” (Tittelback-Helmrich, Wagner, Steer). Includes
“Subpicosecond pump-probe measurements of the electronic relaxation rates of the S₁ states of azulene and related compounds in polar and nonpolar solvents” (Wagner, Szymanski, Steer).
48. Perturbation Treatment... . – 1995.
“Perturbation treatment of pump-probe laser-molecule interactions. An application to the fluorescence from the S₁ state of α-NPO” (Jagatap, Meath, Tittelback-Helmrich, Steer).
49. Cl₂CS Double Resonance [Study]. – 1992-1993.
“Optical-Optical Double Resonance Study of the B(¹A₁) and a(³A₂) States of Thiophosgene” (Simard, MacKenzie, Hackett, Steer).
50. S₁→T₁ II.
“Vibrational Activation and Back Intersystem Crossing in the Relaxation of the Lowest Triplet States of Aromatic Thiones in Solution” (Szymanski, Steer).
51. Thione Triplets. – 1982.
“Decay Dynamics of Aromatic Thione Triplet States in Fluid Solution” (Safarzadeh-Amiri, Verrall, Steer).
- Box 24**
52. Amiri, Condirston, Verrall, Steer – NMTA 10₂. – 1980.
“Oxygen Quenching of the Lowest Triplet State of N-Methylthioacridone.”
53. Cl₂CS B-X JET. – 1990-1991.
“The B-X Laser-induced Fluorescence Excitation Spectrum of Jet-Cooled Cl₂CS: Origin Location and Partial Vibronic Analysis” (Ludwiczak, Latimer, Steer).
54. S₂ Thione Transient Quenching.
“Quenching of the S₂ State of Aromatic Thioketones by Hydrocarbons with Large Contribution of Transient Effect” (Maciejewski, Sikorski, Augustyniak, Fidecka).
55. Chem. Rev. 1992 Article. –

"The Photophysics, Physical Photochemistry and Related Spectroscopy of the Thiocarbonyls" (Maciejewski, Steer).

56. Electronic E-Pooling Projects – Res. Chem. Intermed. – 1989.
"Electronic Energy-Pooling Processes in Polyatomic Molecules" (Steer).
57. Selective Exit'n. – 1987.
"The Radiationless Decay of Aromatic Thiones in Solution Selectively Excited to Their S_3 , S_2 , S_1 and T_1 States.
58. $T_1 - T_2$ Inversion. – 1987.
" $T_1 - T_2$ Inversion in Aromatic Thiones" (Maciejewski, Szymanski, Steer).
59. Cl_2CS A – B. – 1986-1987.
Correspondence and data from Benoit Simard; RN Dixon ; data; and a copy of "The Optical Double Resonance Spectrum of the B^1A_1 State of Cl_2CS " (Dixon, Western).
60. JCP Azulene S_1 . – 1992.
"Subpicosecond Pump-Probe Measurements of the Electronic Relaxation Rates of the S_1 States of Azulene and Related Compounds in Polar and Nonpolar Solvents" (Wagner, Szymanski, Steer).
61. VdW Complexes... . – 1997.
"Van der Waals Complexes of 2-Chloro-, 2-Methyl- and 1,3-Dimethylazulene with Rare Gases: Microscopic Solvent Shifts, Structures and Binding Energies" (Abou-Zied, Sinha, Steer).
62. H^+ Tunneling Tropolone – N_2 . – 1995.
"Proton Tunneling in the Tropolone- N_2 Van der Waals Complex" (Sinha, Steer). Also includes "An instanton approach to intramolecular hydrogen exchange: Tunneling splittings in malonaldehyde and the hydrogenoxalate anion" (Smedarchina, Siebrand, Zgierski).
- Box 25**
63. $S_1 - T_1$ Thiones Red Edge Effects. – 1992.
"Vibrational Activation in the Radiationless Decay of the S_2 , S_1 , T_1 and T_2 States of Aromatic Thiones in Solution: Red Edge Effects (Szymanski, Steer).
64. Simard, Hackett, & Steer. – 1987.
"A-X Laser Excitation Spectroscopy of $BrClCS$ and Br_2CS at Room Temperature and in Cold Supersonic Jets." Note: see above, Simard, Hackett, Moule – JMOL Spec
65. Br_2CS , $BrClCS$ $a \leftarrow X$. – 1987. – textual records, 20 photographs, 7 negatives.
"Vibrational Analysis of the Low Resolution $a \leftarrow x$ Absorption Spectra of $BrClCS$ and Br_2CS " (Simard, Steer, Judge, Moule).
66. Cl_2CS Paper Ex Emission Spectros. I. – 1979. – textual records, 7 photographs.
"Second Excited Singlet State Emission Spectroscopy of Thiocarbonyls. I. Thiophosgene" (Hackett, Clouthier, Knight).

67. The "Dark" State of Cl_2CS . – 1992.
"A dark, excited electronic state of thiophosgene in the near ultraviolet" (Maciejewski, Szymanski, Steer).
68. Cl_2CS II. – 1993.
"Photophysics of van der Waals dimers of Cl_2CS in perfluoroalkane solvents" (Szymanski, Maciejewski, Steer).
69. Rev. Chem. Intermed. – 1992.
Correspondence regarding an invitation to contribute a paper to a special issue dedicated to Otto Strausz.
70. Cl_2CS in PF. – 1989.
"Dynamics of the Second Excited Singlet State of Thiophosgene in Solution" (Falk, Sveinson, Steer).
71. Bruno, Steer & Mezey – Thioketone – Enethiol Tautomerism.
"The Thioketone-Enethiol Tautomerism of Aliphatic Thiocarbonyls: an *Ab Initio* Study.
72. Condirston, Knight & Steer - Cl_2CS P Effects on Fluor. – 1981.
"Pressure Effects in the A-X laser-Excited Fluorescence Spectrum of Cl_2CS ."
73. TF Paper – AM, MS, RPS. – 1996.
"The photophysics of thioflavone in solution" (Maciejewski, Szymanski, Steer).
- Box 26**
74. D. T-H. – 1994.
"Subpicosecond Vibrational Relaxation of the S1 States of Azulene and Guaiazulene in Solution" (Tittelbach-Helmrich, Wagner, Steer).
75. Rao & Steer – Enethiones. – 1988.
"Photophysics of the Second Excited Singlet States of Cyclic Enethiones." File includes several other (related) offprints. Most may found elsewhere within this fonds; also includes "Photophysics of Thione Triplets in Solution: Factors Controlling the Rates of Radiationless Decay" (Szymanski, Maciejewski, Steer); "Photochemistry and Photophysics of Thione Triples in Fluid Solution" (Maciejewski, Szymanski, Steer).
76. LADH Paper – Amiri, Condirston, Steer & Verrall. – 1981.
"Fluorescence Quenching and Lifetime Studies of a Native and Denatured Horse Liver Alcohol Dehydrogenase."
77. Maciejewski & Steer – JACS. – 1983.
"Photophysics of the Second Excited Singlet States of Xanthione and Related Thiones in Perfluoroalkane Solvents."
78. Photophys – Pyridinium. – 1986-1987.

“Photophysical Properties of Fluorescent N-(Purin-6-YL) Pyridinium Chloride” (Skalski, Steer, Verrall).

79. Big Triplet Paper. – 1987-1988.

“Photochemistry and Photophysics of Thione Triplets in Fluid Solution” (Maciejewski, Szymanski, Steer).

80. [Untitled - Transient Effect]. – 1992-1993.

“Transient Effect in Fluorescence Quenching of S₂-Xanthione by 3,3-Diethylpentane in Perfluoroalkane Solvent: A Steady-state and Dynamic Approach” (Augustyniak, Koput, Maciejewski, Silorski, Steer, Szymanski). Paper presented in poster form at a conference in Poland, 1992.

81. Pulse Shape Mimic Technique. – 1983.

“Excitation Pulse Shape Mimic Technique for Improving Picosecond-Laser-Excited Time-Correlated Single Photon Counting Deconvolutions” (James, Demmer, Verrall, Steer).

82. Bruno, Clouthier, Mezey & Steer – Thione Rydberg & Intravalence Transitions. – 1980.

“Rydberg and Valence – Shell Transitions in the Quartz Ultraviolet Spectra of Aliphatic Thiones.”

83. Collab'n – F. Grein. – 1990-1991.

“The ¹A₁ electronic excited states of H₂CS: an ab initio MED CI study.”

84. T1 – Self-Quenching – Excimer Formation. – 1990-1991.

“The Photochemistry of Aromatic Thiones in their S₂ and T₁ States: the Role of Triplet Self-Quenching and Excimer Formation” (Kozlowski, Maciejewski, Szymanski, Steer).

85. Cl₂CS B state photodiss. – 1990-1991.

“Quenching and Photodissociation of the B State of Thiophosgene in Solution” (Szymanski, Sveinson, Steer).

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86. Trans Far Soc. – 1991-1992.

“Photochemistry of Aromatic Thiones in their S₂ and T₁ States: Role of Triplet Self-quenching and Excimer Formation” (Kozlowski, Maciejewski, Szymanski, Steer).

87. Dice & Steer – Direct Photol... . – 1975.

“Mechanism of the Direct Photochemical Decomposition of Thietane and its Derivatives in the Vapour Phase, in Solution and in Glassy Matrices.”

88. Accounts of Chem Res Article. – 1975-1988. – 2 folders. – **RESTRICTED.**

“The Photophysics and Intramolecular Photochemistry of Thiones in Solution” (Ramamurthy, Steer). Folder 1 is restricted.

89. Cl₂CS Paper – Chem. Phys. Letters. – 1974.

“Fluorescence from the Second Excited Singlet State of Thiophosgene Vapour” (Levine, Knight, Steer).

90. Szymanski, Maciejewski & Steer – Chem. Phys. F-C Factors. – 1988.
 “Photophysics of Thione Triplets in Solution: Factors Controlling the Rates of Radiationless Decay.”
91. Transient Effect in the Fluorescence Quenching... . – 1991.
 “Transient Effect in the Fluorescence Quenching of Xanthione in Perfluoro-1,3-Dimethylcyclohexane” (Maciejewski, Sikorski, Szymanski, Augustyniak, Steer).
92. Decay Dynamics of $A(^1A_2) \leftarrow X(^1A_1)$ Laser Excited Thioformaldehyde . – 1982-1983.
 “Photophysics of Laser-Excited Thioformaldehyde $A(^1A_2)$ ” (Bruno, Steer).
93. Judge, Moule, Bruno & Steer – Thioacetone and Thioacetaldehyde. – 1983.
 “Thioketone Spectroscopy: An Analysis of the Lower Electronic Transitions in Thioacetone and Thioacetaldehyde.”
94. S_2 Quenching Note. – 1983.
 “Bimolecular quenching of the second excited singlet state of tetramethylindanethione” (Maciejewski, Steer).
95. Solvent – TMIT S_2 – 1983.
 “Effect of Solvent on the Subnanosecond Decay of the Second Excited Singlet State of Tetramethylindanethione” (Maciejewski, Steer).
96. Moule - Collaboration – ClFCS Data. – 1977-1979.
 Includes copies of three papers: “Thioformaldehyde. Rotational Analyses of the $A^1A_2-X^1A_1$ Visible Absorption System” (Judge, King); “The $a^3A_2 \leftarrow A^1A_1$ Absorption Spectrum of Thioformaldehyde: A Vibrational and Rotational Analysis” (Judge, Moule, King); “A Vibronic Analysis of the $B^1A_1 (\pi \pi^*) \leftarrow X^1A_1$ Electronic Transition in Thiophosgene” (Judge, Moule)
97. Kapur, Steer & Mezey – Carbonyl Paper. – 1981.
 “Ab Initio SCF-MO Calculations of Features of the Lowest Triplet State Potential Surfaces of Several Tetraatomic Carbonyl Compounds.”
98. Autocorrelator Paper. – 1984. – textual records, 6 photographs.
 “A Simple, Inexpensive Autocorrelator for Use with CW Mode-Locked Lasers” (Demmer, Leyland, Szymanski, Steer).
- Box 28**
99. Paone, Moule, Bruno & Steer – Vibronic Analyses... . – 1983.
 “Vibronic Analyses of the Rydberg and Lower Intravalence Electronic Transitions in Thioacetone.”
100. S_1 TDF in Arom. Thiones. – 1986.
 “Thermally Activated Delayed S_1 Fluorescence of Aromatic Thiones” (Maciejewski, Szymanski, Steer).

101. Spectral and Photophysical Properties... . – 1984-1986.
“Spectral and Photophysical Properties of 9,10-Diphenylanthracene in Perfluoro-*n*-Hexane: The Influence of Solute-Solvent Interactions” (Maciejewski, Steer).
102. Styrene Papers – Drafts. – 1976.
“Nanoscecond Time-Resolved Spectroscopy of Styrenes Excited in Their A Absorption Bands.”
103. Steer et al C_2CS . – 1979.
“Sequential Two-Photon Absorption and Singlet-Singlet Energy Pooling in Thiophosgene Vapor” (Clouthier, Knight, Steer, Hackett).
104. 2nd Cl_2CS JCP Paper – jottings. – 1976.
“Fluorescence from S_2 Single Vibronic Levels in Thiophosgene Vapour: Quantum Yields and Quenching Effects” (Oka, Knight, Steer).
105. O. A-Z, HKS & RPS. – 1995.
“ S_2 - S_0 Spectroscopy of Azulene and its van der Waals Complexes with Rare Gases” (Abour-Zied, Sinha, Steer).
106. “Vibrational Activation and Back-Interruption Crossing the Radiationless Decay of the Lowest Triplet States of Aromatic Thiones in Solution.” - 1991. - 2 folders.
Marek Szymanski and Steer; [unpublished?].
107. $ClCS$ S_1 - T_1 . – 1992. – 2 folders.
“Photophysics of the S_1 and T_1 States of Thiophosgene in Solution” (Szymanski, Maciejewski, Steer).
Folder 1: Box 28
Folder 2: Box 29

Box 29

7.4 Photographs, Negatives and Slides

1. Styrene System. – 1975-1976. – 25 slides.
2. Thione System (Solution). – 15 slides.
3. Thione S_2 [solution aromatic]. – 23 slides.
4. Alfredo’s Work. – 19 slides.
5. U of S Laser Group. – 1983. – 17 slides.
Images of people; equipment; and the campus.
6. Anil K. Slides (Triplet Geomet.). – 7 slides.

7. Ali – Triplets. – 12 slides.
8. Negatives. – 320 negatives. – 2 folders.
Primarily of charts, graphs, and other illustrative matter used in research papers.
Identified generally by author or topic.
9. Cold Spectra. – 31 photographs.
10. C₂CS, C₂FCS, DJC [Clouthier] Work. – 28 slides.
11. XYCS T₁ & S₀ Calculations. – 16 slides.
12. Lecture 1; Lecture 2. – 8 slides.
Images of the University campus; research group; University of California; Carleton tower, Riverside; etc. The slides within this container do not completely correspond to its label: “Lecture 1 – slides 1-6; Lecture 2 – slides 7-9”
13. LA[D]H D.D. & D.J. Work. – 21 slides.
14. [Unidentified]. – 13 slides.
Equipment and people; research associates / colleagues [possibly Laser Group, although images differ from those identified as such].
15. [¹O₂]. – 31 slides.
Primarily charts and graphs; contains some images of equipment.
16. Unidentified. – 261 slides.
Includes graphs, spectra; text; images of people, U of S campus, etc.

Series 8: People

1. Ali Amiri. – 1978-1989. – **RESTRICTED.**
2. Kalliopi (Peggy) Athanassenas. – 1993. – **RESTRICTED.**
3. J. Buck. – 1990.
4. Alfredo Bruno. – 1978-1994. – **RESTRICTED.**
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