

## List of Publications

of Peter Senn

### Papers

1. F.W. Birss and P. Senn, *Configuration Interaction Wavefunctions for  $^3S$  Excited States of Helium*, J. Chem. Phys. **63**, 1276(1975).
2. P. Senn, *The Differential Equations of the One-Electron Two-Center Problem*, M. Sc. Thesis, 1978, University of Alberta, Edmonton, Alberta, Canada T6G 2E1.
3. P.R. Keller, J.W. Taylor, F.A. Grimm, P. Senn, T.A. Carlson, and M.O. Krause, *Angle-Resolved Photoelectron Measurements on the 2p Orbitals of Si in  $SiF_4$  and  $Si(CH_3)_4$  in the Gas Phase*, Chem. Phys. **74**, 247(1983).
4. P. Senn, *The Effects of Nuclear Motion in Photoelectron Spectra of Diatomic Molecules*, Ph. D. Diss., University of Tennessee, Knoxville, Tenn. 37916. Available from Univ. Microfilms Int., Order No. DA 8316391.
5. P. Senn, *The Placement of the Outer Sphere in Muffin Tin  $X\alpha$  Calculations*, Comput. Chem. **9**, 121(1985).
6. P. Senn, P. Quadrelli, K. Dressler, and G. Herzberg, *Spectroscopic Identification of the Lowest Rotation-Vibration Levels of the  $(2p\sigma)^2F^1\Sigma_g^+$  State of the  $H_2$  Molecule*, J. Chem. Phys. **83**, 962(1985).
7. P. Senn, P. Quadrelli, K. Dressler, and L. Wolniewicz, *New Identifications of Highly Excited States of the  $H_2$  Molecule Accessible by Multiphoton Spectroscopy*, in *Laser Spectroscopy VII*, Eds. T.W. Häntschi and Y.R. Shen, Springer Series in Optical Sciences, Vol. 49 (Springer, Berlin, Heidelberg, 1985), pp. 153-154.
8. P. Senn, P. Quadrelli, K. Dressler, and G. Herzberg, *Spectroscopic Identification of the Lowest Rotation-Vibration Levels of the  $(2p\sigma)^2F^1\Sigma_g^+$  State of the  $D_2$  Molecule*, J. Chem. Phys. **85**, 2384(1986).

9. P. Senn and F.A. Grimm, *Semiempirical Potential Curves of  $N_2^+$  and  $CO^+$  Computed with the MS- $X\alpha$  Theory*, J. Molec. Struct. (Theochem) **150**, 215(1987).
10. P. Senn, *The Modified Pöschl-Teller Oscillator*, J. Chem. Educ. **63**, 75(1986).
11. P. Senn, *Computer Graphics with Lines of Variable Thickness*, Comput. Chem. **10**, 219(1986).
12. P. Senn and K. Dressler, *Tunneling in the Double-Minimum  $EF\ ^1\Sigma_g^+$  State of Molecular Hydrogen*, J. Chem. Phys. **87**, 1205(1987).
13. P. Senn and K. Dressler, *New Spectroscopic Term Values for the  $EF\ ^1\Sigma_g^+$  State of  $H_2$* , J. Molec. Struct. **142**, 123(1986).
14. P. Senn, *A Note on the Efficient and Accurate Computation of the Phase Functions  $\phi$  and  $\chi$  in Semiclassical Approximations*, J. Comp. Chem. **8**, 965(1987).
15. P. Senn and K. Dressler, *Spectroscopic Identification of Rovibronic Levels Lying Above the Potential Barrier of the  $EF\ ^1\Sigma_g^+$  Double-Minimum State of the  $H_2$  Molecule*, J. Chem. Phys. **87**, 6908(1987).
16. P. Senn, *Praxisnahe Analysis: Ein einfaches mathematisches Modell für Wärmeaustauscher im stationären Zustand*, Physik u. Didaktik **16**, 27(1988).
17. P. Senn, *The Computation of the Distance Matrix and the Wiener Index for Graphs of Arbitrary Complexity with Weighted Vertices and Edges*, Comput. Chem. **12**, 219(1988).
18. P. Senn, *Threshold Anomalies in One-Dimensional Scattering*, Am. J. Phys. **56**, 916(1988).
19. P. Senn, *Comment on the Use of Semiclassical Approximations in Problems Involving Double-Minimum Potentials*, J. Chem. Phys. **89**, 5350(1988).
20. P. Senn, P. Quadrelli, and K. Dressler, *The  $B\ ^1\Sigma_u^+$ ,  $B'\ ^1\Sigma_u^+$ ,  $C\ ^1\Pi_u$  and  $D\ ^1\Pi_u$  States of Hydrogen. Ab Initio Calculation of Rovibronic Coupling in  $H_2$ , HD, and  $D_2$* , J. Chem. Phys. **89**, 7401(1988).

21. P. Senn, *Comment on the Bound States of the Schrödinger Equation with the Potential  $V = A/x^2 + Bx^2$* , Chem. Phys. Lett. **154**, 172(1989).
22. P. Senn, *Comment on "Overlap Revisited"*, Chem Phys. Lett. **166**, 630(1990).
23. P. Senn, *Cluster Analysis for Chemists*, Kem. Ind. **39**, 177(1990).
24. P. Senn, *The Mandelbrot Set for Binary Numbers*, Am. J. Phys. **58**, 1018(1990).
25. P. Senn, *Determination of the Position of an Atom in Space from Three Interatomic Distances*, Comput. Chem. **15**, 93(1991).
26. P. Senn, *An SCF- $X\alpha$ -SW Molecular Orbital Study of the Rydberg States of Carbon Monoxide*, Z. phys. Chemie (Leipzig) **271**, 973(1990).
27. P. Senn, *Numerical Computation of Surface Areas of Molecules*, J. Math. Chem. **6**, 351(1991).
28. P. Senn, *A Two-Step Reaction Scheme with Oscillatory Input of Reactant*, Hung. J. Indust. Chem. (Veszprém) **19**, 143(1991).
29. P. Senn, *Accurate and Efficient Computation of  $\Gamma$ -Functions with Complex Arguments*, Comput. Chem. **15**, 343(1991).
30. P. Senn, *Reform des HTL-Studiums. Notwendigkeit und Chance*, Der Wengianer (Vereinsorgan der Wengia Solothurn) **104**. Jahrgang, März 1992, 2-6.
31. P. Senn, *Time evolutions of quantum mechanical states in a symmetric double-well potential*, Am. J. Phys. **60**, 228(1992).
32. P. Senn, *Das doppelte Federpendel*, Physik u. Didaktik **20**, 114(1992).
33. P. Senn, *A new procedure for measuring leak rates of glove boxes*, Hung. J. Indust. Chem. (Veszprém) **20**, 133(1992).
34. P. Senn, *Determination of the Atomic Sphere Radii for SCF- $X\alpha$ SW Calculations*, Comput. Chem. **16**, 201(1992).

35. P. Senn, *A Simple Quantum Mechanical Model That Illustrates the Jahn-Teller Effect*, J. Chem. Educ. **69**, 819(1992).
36. P. Senn, *An Empirical Relationship Between the Critical Temperature of a Gas and the Heat of Vapourization of its Liquid Phase*, Chimica Acta Turcica **19**, 85(1991).
37. P. Senn, *The Intensities of Infrared Overtones*, Education in Chemistry **30**(1), 22 (1993).
38. P. Senn, *Der Nobelpreis 1992 für Chemie*, Physik u. Didaktik **21**(1),63(1993).
39. P. Senn, *Ist "Antischall" mit dem Energieerhaltungssatz vereinbar?*, Physik u. Didaktik **21**(1), 79(1993).
40. P. Senn, *Über die Erhaltung von Impuls und Energie bei der Photoionisation*, Physik und Didaktik **21**(2), 167(1993).
41. P. Senn, *The Velocity Distribution of Photoelectrons at Threshold Derived from Classical Momentum Conservation*, J. Photoelectron Spectrosc. Relat. Phenom. **63**, 177(1993).
42. P. Senn, *Coincidence Analysis of High-Resolution Molecular Spectra*, Computers Chem. **17**, 389(1993).
43. P. Senn, *Die maximale Reichweite eines Projektils*, Physik und Didaktik **22**(1), 72(1994).
44. W.A. Stahel, A.F. Ruckstuhl, P. Senn and K. Dressler, *Robust Estimation in the Analysis of Complex Molecular Spectra*, J. Am. Statistical Assoc. **89**, 788(1994).
45. P. Senn, *Computation of the Cartesian Coordinates of Buckminsterfullerene*, J. Chem. Educ. **72**, 302(1995).
46. P. Senn, *The Computation of the Base Line in Thermal Analysis*, Chimica Acta Turcica **23**, 135(1995).

47. P. Senn and F.A. Grimm, *Effects of Dynamic Symmetry Breaking on Cross-Sections and Angular Distributions in the Photoionization of Molecular Nitrogen*, Journal of Molecular Structure (Theochem) **342**, 109(1995).
48. P. Senn, *The Computation of RKR Potential Energy Curves of Diatomic Molecules Using Mathematica*, Comput. Chem. **19**, 437(1995).
49. P. Senn, *Shaded Space-Filling Stereoscopic Representations of Molecules as Dotted Surfaces*, Comput. Chem. **20**, 479(1996).

## **Books**

1. P. Senn, *Gloveboxes*, Keytrace Engineering, Reichenburg, Switzerland, 1997. ISBN 3-906540-00-6.

## **Letters to the Editor**

1. P. Senn, *Transfer of Grades*, J. Chem. Educ. **59**, 585(1982).
2. P. Senn, *On Chemical Bonding*, Am. J. Phys. **54**, 587(1986).
3. P. Senn, *Unbesonnenes über Halbbesinnliches*, Bulletin der Eidgenössischen Technischen Hochschule Zürich, Nr. 206, April, 1987.
4. P. Senn, *The Thesis that Won't Go Away*, Nature **333**, 110(1988).
5. P. Senn, *An Average Maximum Distance*, SIAM Review **31**, 319(1989).
6. P. Senn, *Atomic Orbitals*, J. Chem. Educ. **68**, 710(1991).
7. P. Senn, *Numerical Solutions of the Schrödinger Equation*, Am. J. Phys. **60**, 776 (1992).
8. P. Senn, *Proper Glove Box Etiquette*, J. Chem. Educ. **70**, 519(1993).

## Research Lectures and Presentations

1. P. Senn and W. Stahel, *The Use of Robust Estimation in High-Resolution Spectroscopy. Two Case Studies*, Feb. 13, 1990, Laboratory for Physical Chemistry, ETH Zürich, Switzerland.

## Puzzles

1. Peter Senn, *Kreuzwörtertsel 1 (Physik soll Spass machen)*, Physik u. Didaktik **21**(3), 249(1993).
2. Peter Senn, *Wettbewerb 1994*, ISZ-Info 1994 (Offizielles Bulletin der Ingenieurschule Zürich) Jahrgang 33/Nr. 43, 24(1994).
3. Peter Senn, *Wettbewerb 1995*, ISZ-Info 1995 (Offizielles Bulletin der Ingenieurschule Zürich) Jahrgang 34/Nr. 44, 36(1995).
4. Peter Senn, *Wettbewerb 1996*, ISZ-Info 1996 (Offizielles Bulletin der Ingenieurschule Zürich) Jahrgang 35/Nr. 45, 44(1996).
5. Peter Senn, *Wettbewerb 1997*, ISZ-Info 1997 (Offizielles Bulletin der Ingenieurschule Zürich) Jahrgang 36/Nr. 46, 68(1997).
6. Peter Senn, *Wettbewerb 1998*, HSZ-Info 1998 (Offizielles Bulletin der Hochschule für Technik, Wirtschaft und Verwaltung Zürich) Jahrgang 37/Nr. 47, 68(1998).
7. Peter Senn, *Wettbewerb 1999*, HSZ-Info 1999 (Offizielles Bulletin der Hochschule für Technik, Wirtschaft und Verwaltung Zürich) Jahrgang 38/Nr. 48, 48(1999).
8. Peter Senn, *Wettbewerb 2000*, HSZ-Info 2000 (Offizielles Bulletin der Hochschule für Technik, Wirtschaft und Verwaltung Zürich) Jahrgang 39/Nr. 49, 50(1999).

## Acknowledgments in Published Papers and Theses

1. F.W. Birss and W. Den Hartog, *Rational Orbitals for Two-Electron  $^1\Sigma$  States*, Can. J. Chem. **59**, 1552(1981).
2. R.U. Lemieux, K. Bock, L.T.J. Delbaere, S. Koto, and V.S. Rao, *The Configuration of Oligosaccharides Related to the ABH and Lewis Human Blood Group Determinants*, Can. J. Chem. **58**, 631(1980).
3. Martin Hegelbach, *Inertgasreinigung*, Diplomarbeit am Interkantonalen Technikum Rapperswil, 1992.
4. A.F. Ruckstuhl, W.A. Stahel, and K. Dressler, *Robust Estimation of Term Values in High-Resolution Spectroscopy: Application to the  $e^3\Sigma_u^+ \rightarrow a^3\Sigma_g^+$  Spectrum of  $T_2$* , J. Molec. Spectrosc. **160**, 434(1993).
5. A.F. Ruckstuhl, *Analysis of the  $T_2$  Emission Spectrum by Robust Emission Techniques*, Doctoral Thesis Nr. 11170 at the Swiss Federal Institute of Technology (ETH), 1995.