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Curriculum Vita

Thomas Nicola Rescigno

PERSONAL

Home Address:	3661 Bernal Avenue, Pleasanton, California 94566
Home Phone:	(925) 846-4007
Birthdate:	September 10, 1947
Birthplace:	New York City, New York

EDUCATION

1965-1969	Columbia College, New York, New York B.A. June 1969 (Chemical Physics), graduated summa cum laude
1969-1973	Harvard University, Cambridge, Massachusetts M.A. June 1971 (Chemistry) Ph.D., November 1973 (Chemical Physics) Research Director: William P. Reinhardt Thesis subject: The Fredholm Method in Electron-Atom Scattering

PROFESSIONAL EXPERIENCE

June 2001 - Present	Senior Scientist, Chemical Sciences Lawrence Berkeley National Laboratory Berkeley, California 94720
Jan 2000 - June 2001	Staff Scientist, Computing Sciences Directorate Lawrence Berkeley National Laboratory Berkeley, California 94720
May 1986 - Oct 2002	Senior Scientist, Physics Directorate Lawrence Livermore National Laboratory, University of California Livermore, California 94550
May 1996 - Dec 1999	Participating Guest and Co-Principal Investigator Computing Sciences Directorate Lawrence Berkeley National Laboratory Berkeley, California 94720
Summer 1994	Lecturer, Summer School in Theoretical Atomic and Molecular

Physics	
Summer 1993	University of New Mexico Los Alamos, New Mexico 87545
Summer 1991 Summer 1987	Visiting Scientist, Los Alamos National Laboratory Los Alamos, New Mexico 87545 Los Alamos, New Mexico 87545
May 1985 - May 1986	Leader, Theoretical Atomic and Molecular Physics Group Physics Department, Lawrence Livermore National Laboratory University of California, Livermore, California 94550
October 1981 - May 1985	Leader, Atomic and Molecular Theory Group Chemistry and Materials Science Department Lawrence Livermore National Laboratory, University of California Livermore, California 94550
June 1979 - October 1981	Leader, Theoretical Atomic and Molecular Physics Group Laser Program, Lawrence Livermore National Laboratory University of California, Livermore, California 94550
October 1975 - June 1979	Staff Physicist, Theoretical Atomic and Molecular Physics Group Lawrence Livermore National Laboratory, University of California Livermore, California 94550
October 1973 - September 1975	Research Fellow in Chemistry, California Institute of Technology Pasadena, California 91125 Research Director: Professor Vincent McKoy
June 1969 - September 1969	National Science Foundation Trainee, Brookhaven National Laboratory, Upton, New York Research Director: Dr. Norman Sutin
May 1969 - September 1968	National Science Foundation Trainee, Columbia University New York, New York Research Director: Professor George Flynn

AWARDS AND HONORS

March 2009	Outstanding Referee, American Physical Society
October 1988	Fellow, American Physical Society
April 1975	National Science Foundation Energy Fellowship
June 1971	Harvard Teaching Fellow Award
1969 - 1972	National Science Foundation Predoctoral Fellow
June 1969	American Institute of Chemists Medal

PROFESSIONAL ACTIVITIES

Research fields: low and intermediate energy electron-atom and electron-molecule collisions, photoionization of atoms and molecules, analyticity and resonance phenomena, atomic and molecular structure, many-body theory, numerical methods, kinetic modeling

Publications:

209 papers in refereed journals
5 review articles
16 chapters in books
1 book

Presentations:

49 invited talks at national and international meetings
26 invited lectures at universities and research institutions
134 technical presentations at scientific meetings

Leadership:

American Physical Society:

Division of Atomic, Molecular and Optical Physics

Member, Executive Committee (2003-2004, 1996-2000)
Member, Nominating Committee (2003-2004)
Member, Fellowship Committee (2001-2002)
Local Chair, Annual Meeting (1990)

Topical Group on Few-Body Physics
Member, Nominating Committee (2006)
Chair (2003)
Vice-Chair(2002)
Vice-Chair Elect (2001)

Allis Prize Committee
Chair (2001)
Vice-Chair (1999)

Gaseous Electronics Conference
Member, Executive Committee, (2003-2004, 1998-2000)

Physical Review A
Member, Editorial Board, (1995-2001)

National Science Foundation:

AMO Theory Review Panel (2002)

ITR Review Panel (2000)

Review Panel, Institute for Theoretical Atomic and Molecular Physics, Harvard University (1993)

National Research Council Panelist (1989-92)

Department of Energy:

AMO Physics Review Panel, Oak Ridge National Laboratory, (2007)

International Conference on Photonic, Electronic and Atomic Colisions:

Satellite Symposium on Electron- Molecule Collisions and Swarms (Organizing Committee (2003-2005, 1995-1999), Local Chair (1995))

Journal Review: Physical Review A, Physical Review Letters, Journal of Chemical Physics, Journal of Physical Chemistry, Journal of Physics B, Zeitschrift für Physik D

Proposal Review: National Science Foundation
Department of Energy
Petroleum Research Council
Engineering and Physical Sciences Research Council (UK)

PROFESSIONAL AND HONORARY SOCIETIES

American Physical Society
Phi Beta Kappa
Phi Lambda Upsilon

PUBLICATIONS

Thomas Nicola Rescigno

1. Laser Induced Vibrational Fluorescence in Sulphur Hexafluoride (with J. T. Knudton, R. D. Bates, Jr., G. W. Flynn, and M. Ronn), *Bull. Amer. Phys. Soc*. **14**, 65 (1969).

2. Application of the Fredholm Method to Elastic Scattering from Coulomb Admixtures (with W. P. Reinhardt). *Bull. Amer. Phys. Soc*. **16**, 1412 (1971).

3. Extraction of Accurate Scattering Information from Apparently Divergent Fredholm Series: The Centrifugal Barrier (with W. P. Reinhardt), J. *Phys. B* **4**, l279 (l97l).

4. Computation of Elastic Scattering Phase Shifts via Analytic Continuation of Fredholm Determinants Constructed Using an L2 Basis (with W. P. Reinhardt and D. W. Oxtoby), *Phys. Rev. Lett*. **28**, 40l (l972).

5. On Extraction of Scattering Information from Fredholm Determinants Calculated in an L2 Basis: A Chebyschev Discretization of the Continuum (with E. J. Heller and W. P. Reinhardt), *Phys. Rev. A* **8**, 2946 (l973).

6. Calculation of Substituted Fredholm Determinants Using Complex Basis Functions (with W. P. Reinhardt), *Phys. Rev. A* **8**, 2828 (l973).

7. Singlet e-H Scattering at Intermediate Energies (with W. P. Reinhardt), *Phys. Rev. A* **l0**, 158 (l974).

8. Calculation of Helium Photoionization in the Random Phase Approximation Using Square-Integrable Basis Functions (with C. W. McCurdy and V. McKoy), *Phys. Rev. A* **9**, 2409 (l974).

9. A Discrete Basis Set Approach to Nonspherical Scattering (with C. W. McCurdy and V. McKoy), *Phys. Rev. A* **l0**, 40l (l974).

l0. A Discrete Basis Set Approach to Nonspherical Scattering II. (with C. W. McCurdy and V. McKoy), *Phys. Rev. A* **l0**, 2240 (l974).

ll. Photoionization Cross Sections for H2 in the Random Phase Approximation with a Square-Integrable Basis (with P. H. S. Martin, V. McKoy and W. H. Henneker), *Chem. Phys. Lett*. **29**, 496 (l974).

12. A Relationship Between the Many-Body Theory of Inelastic Scattering and the Distorted Wave Approximation (with C. W. McCurdy and V. McKoy), *J. Phys. B*

7, 2396 (l974).

l3. Low-Energy Elastic e- -H_2 Cross Sections Using Discrete Basis Functions (with C. W. McCurdy and V. McKoy), *Phys. Rev. A* **ll**, 825 (1975).

l4. A Many-Body Treatment of Feshbach Theory Applied to Electron-Atom and Electron-Molecule Collisions (with C. W. McCurdy and V. McKoy), *Phys. Rev. A* **l2**, 406 (l975).

l5. A Rigorous Method for Computing Atomic and Molecular Photoionization Cross Sections from a Basis Set Expansion (with V. McKoy), *Phys. Rev. A* **l2**, 522 (l975).

l6. Photoabsorption Cross Sections of Two Electron Atoms by the Coordinate Rotation Method: Application to H- and Several States of He (with C. W. McCurdy and V. McKoy), *J. Chem. Phys*. **64**, 477 (l976).

l7. The Equations of Motion Method: An Approach to the Dynamical Properties of Atoms and Molecules (with C. W. McCurdy, V. McKoy, and D. L. Yeager) in "Modern Theoretical Chemistry," edited by H. F. Schaefer, III (Plenum Press, New York, l977).

l8. Ab Initio Cross Sections for the Excitation of the $b^3\Sigma_u$ State of H_2 by Electron Impact in the Distorted Wave Approximation (with C. W. McCurdy, V. McKoy and C. F. Bender), *Phys. Rev. A* **l3**, 2l6 (l976).

l9. The Low-Energy Electron Impact Excitation of the Hydrogen Molecule (with C. W. McCurdy, V. McKoy, and C. F. Bender), *Phys. Rev. A* **l3**, 2l6 (l976).

20. A Simple Method for Evaluating Low-Energy Electron-Molecule Scattering Cross Sections Using Discrete Basis Functions (with C. W. McCurdy and V. McKoy), *J. Phys. B* **9**, 69l (l976).

2l. Cross Sections for the Elastic Scattering of Low-Energy Electrons by Molecular Fluorine: An Approximate Theoretical Treatment Using Discrete Basis Functions (with C. F. Bender, C. W. McCurdy, and V. McKoy), *J. Phys. B* **9**, 2l4l (l976).

22. The Stability of the F_2^- Ion: A Model for Dissociative Attachment (with C. F. Bender), *J. Phys. B* **9**, L329 (l976).

23. A Discrete Basis Set Approach to the Minimum-Variance Method in Electron-Scattering (with D. A. Levin and V. McKoy), *Phys. Rev. A* **16**, l57 (l977).

24. Theoretical Modeling of the KrF Fluorescence Spectrum (with N. W. Winter), Proceedings of the Third Summer Colloquium on Electronic Transition Lasers, edited by L. E. Wilson, S. N. Suchard, and J. I. Steinfeld, (MIT Press, Cambridge,

Massachusetts, l977).

25. The Equations of Motion Method for F_2: Transition Energies, Oscillator Strengths and Born Cross Sections (with C. F. Bender and B. V. McKoy), *Chem. Phys. Lett*. **45**, 307 (l977).

26. The Photoionization of N_2: An Application of Moment Theory to the Results of a Discrete Basis Set Calculation (with C. F. Bender, V. McKoy, and P. W. Langhoff), *J. Chem. Phys*. **68**, 970 (l978).

27. Orthogonality Constraints in Electron Scattering by Open-Shell Systems: Comments on a Paper by Riley and Truhlar, *J. Chem. Phys*. **66**, 5255 (l977).

28. Potential Energy Curves and Predicted Fluorescence for NeF (with N. W. Winter and C. F. Bender), *J. Chem. Phys*. **67**, 3l22 (l977).

29. Comments on the Existence of Low Energy d-Wave Shape Resonances in Electron Fluorine Atom Scattering (with A. U. Hazi and N. W. Winter), *Phys. Rev. A* **l6**, 2488 (l977).

30. A Theoretical Study of the Photoionization of Metastable Neon (with A. U. Hazi), *Phys. Rev. A* **l6**, 2376 (l977).

3l. Study of the Photodetachment Cross Section of F- (with C. F. Bender and V. McKoy), *Phys. Rev. A* **l7**, 645 (l978).

32. K-Shell Photoionization in Molecular Nitrogen (with P. W. Langhoff), *Chem. Phys. Lett*. **5l**, 65 (l977).

33. Calculation of the Photoionization Cross Section of the $^1\Sigma_u$ Excimer State of Ar_2 (with A. U. Hazi and A. E. Orel), *J. Chem. Phys*. **68**, 5283 (l978).

34. Extensions of the Complex Coordinate Method to the Study of Resonances in Many-Electron Systems (with C. W. McCurdy and A. E. Orel) *Phys. Rev. A* **l7**, l93l (l978).

35. Theoretical Studies Involving Candidate Group VIA Laser Systems (with C. F. Bender, A. U. Hazi, A. E. Orel, and N. W. Winter), Proceedings of the Topical Meeting on Inertial Confinement Fusion, San Diego, California, Optical Society of America (l977).

36. Photoabsorption in Formaldehyde: Intensities and Assignments in the Discrete and Continuous Spectral Intervals (with A. E. Orel, V. McKoy and P. W. Langhoff), *J. Chem. Phys*. **69**, 4689 (l978).

37. Extension of the Method of Complex Coordinates to Molecular Resonances (with

C. W. McCurdy), *Phys. Rev. Lett.* **4l**, l364 (l978).

38. Theoretical Study of the 400 eV Core-Valence Excited States of N_2 (with A. E. Orel), *J. Chem. Phys.* **70**, 3390 (l979).

39. Cross Sections for Excitation of the $B^3\Pi g$, $C^3\Pi u$, and $E^3\Sigma g$ States of N_2 by Low-Energy Electron Impact in the Distorted-Wave Approximation (with A. W. Fliflet and V. McKoy), *J. Phys. B* **l2**, 328l (l979).

40. Electron and Photon-Molecule Collisions (co-edited with V. McKoy and B. Schneider), Plenum Press, New York, 1979.

4l. Potential Energy Curves for Diatomic Zinc and Cadmium (with C. F. Bender, H. F. Schaefer, and A. E. Orel), *J. Chem. Phys*. **7l**, ll22 (l979).

42. Basis Set Calculation of Siegert Eigenvalues: Partial Resonance Widths (with C. W. McCurdy), *Phys. Rev. A* **20**, 2346 (l979).

43. Photoexcitation and Ionization in Molecular Fluorine: Stieltjes-Tchebycheff Calculations in the Static-Exchange Approximation (with A. E. Orel, B. V. McKoy and P. W. Langhoff), *J. Chem. Phys.* **72**, l265 (l980).

44. Theoretical Study of the De-excitation of KrF and XeF Excimers by Low-Energy Electrons (with A. U. Hazi and A. E. Orel), *Appl. Phys. Lett.* **35**, 477 (l979).

45. On Π-Shell Photoionization in Molecular Nitrogen (with A. Gerwer, B. V. McKoy and P. W. Langhoff), *Chem. Phys. Lett.* **66**, ll6 (l979).

46. Dissociation of F_2 by Electron Impact Excitation of the Lowest $3?_u$ Electronic State (with A. W. Fliflet and V. McKoy), *Phys. Rev. A* **2l**, 788 (l980).

47. The Schwinger Variational Principle for Electron-Molecule Scattering: Applications to Electron-H_2 Scattering (with D. K. Watson, R. R. Lucchese and V. McKoy), *Phys. Rev. A* **2l**, 738 (l980).

48. Complex Basis Function Calculations of Resolvent Matrix Elements: Molecular Photoionization (with C. W. McCurdy), *Phys. Rev. A* **2l**, l499 (l980).

49. Theoretical Studies of Inner-Valence-Shell Photoionization in N_2 and CO (with P. W. Langhoff, S. R. Langhoff, J. Schirmer, L. S. Cederbaum , W. Domcke and W. Von Niessen), *Chem. Phys.* **58**, 71 (1981).

50. Applicability of Self-Consistent Field Techniques Based on the Complex Coordinate Method to Metastable Electronic States (with C. W. McCurdy, E. R. Davidson and J. G. Lauderdale), J. *Chem. Phys.* **73**, 3268 (l980).

5l. Theoretical Studies of Partial-Channel Photoionization Cross Sections in Diatomic and Polyatomic Molecules (with P. W. Langhoff, N. Padial, G. Csanak and V. McKoy), *Journal de Chimie Physique* **77,** 589 (l980).

52. Generalization of the Separable Approximation to Scattering in the Presence of Long-Range Forces, (with A. E. Orel), *Phys. Rev. A* **23**, ll34 (l98l).

53. Application of the Complex Coordinate SCF Technique to a Molecular Shape Resonance: The $^2\Pi_g$ State of N_2, (with A. E. Orel and C. W. McCurdy), *J. of Chem. Phys.* **73**, 6347 (l980).

54. Cross Sections for Resonant Vibrational Excitation of N_2 by Electron Impact, (with A. U. Hazi and M. Kurila), *Phys. Rev. A.* **23**, l089 (l98l).

55. Recent Developments in Complex Scaling, Electron - Atom and Electron - Molecule Collisions, edited by J. Hinze (Plenum, New York, l98l).

56. Schwinger Variational Calculations for Electron Scattering by Polar Molecules, (with D. K. Watson, R. Lucchese and V. McKoy), *J. Phys. B.* **14**, 1875 (l98l).

57. Ab Initio Study of Dissociative Attachment of Low-Energy Electrons to F_2, (with A. U. Hazi and A. E. Orel), *Phys. Rev. Letts*. **46**, 9l8 (l98l).

58. A Separable Approximation for Exchange Interactions in Electron-Molecule Scattering, (with A. E. Orel), *Phys. Rev. A* **24**, 1267 (l98l).

59. Theoretical Studies of Photoionization in Diatomic and Polyatomic Molecules, (with P. W. Langhoff, N. Padial, C. Csanak, and V. McKoy), *Int. J. Quant. Chem*. **l4**, 285 (l980).

60. Theoretical Studies of Photoexcitation and Ionization in H_2O, (with G. Diercksen, W. Kraemer, V. McKoy, C. F. Bender, S. R. Langhoff and P. W. Langhoff), J. *Chem. Phys.* **76**, 1043 (1982).

61. Separable Approximation for Exchange Interactions in Electron-Molecule Scattering: Numerical Stabilization Procedures, (with A. E. Orel), *Phys. Rev. A* **25**, 2402 (1982).

62. Ab Initio Study of Vibrational Excitation of HF by Low Energy Electrons, (with A. E. Orel, A. U. Hazi and B. V. McKoy), *Phys. Rev. A* **26**, 690 (1982).

63. Hole Localization in Molecular Inner Shell Excitation Processes, (with A. E. Orel), in "Wavefunctions and Mechanisms from Electron Scattering Processes," edited by F. Gianturco and G. Stefani, (Springer Verlag, 1984).

64. Studies of Threshold Vibrational Excitation in Electron-Polar Molecule

Collisions, in "Electron-Molecule Collisions and Photoionization Processes," edited by V. McKoy, H. Suzuki, K. Takayanagi and S. Trajmar, (Verlag Chemie: 1983).

65. Locally Complex Distortions of the Energy Spectrum and the Calculation of Scattering Amplitudes and Photoionization Cross Sections, (with C. W. McCurdy), *Phys. Rev. A* **31**, 624 (1984).

66. Atomic Photoionization by the Complex Basis Expansion Method: Application to Ground State and Metastable Mg, *Phys. Rev. A* **31**, 607 (1984).

67. Extension of Time-Independent Wave Operator Methods to the Calculation of the Two-Body Coulomb Amplitude (with B. Johnson, W. P. Reinhardt and C. W. McCurdy), *Phys. Rev A* **32**, 1998 (1985).

68. A Note on the Normalization of Resonance Wavefunctions and the Calculation of Resonance Widths (with C. W. McCurdy), *Phys. Rev. A* **34**, 1882 (1986).

69. A Rigorous Finite Basis Set Approach to the Calculation of the Angular Dependence of Photoionization (with C. W. McCurdy) *Phys. Rev. A* **35**, 657 (1987).

70. Complex Basis Function Treatment of Photoionization in the Random Phase Approximation (with S. Yabushita and C. W. McCurdy), *Phys. Rev. A* **36**, 3146 (1987).

71. On the Interrelation Between Variational Methods for Scattering Amplitudes and Generalized R-Matrix Theory (with C. W. McCurdy and B. Schneider), *Phys. Rev. A* **36**, 2061 (1987).

72. Multichannel Electron-Atom Scattering Calculations Using Local Complex Distortions of the Energy Spectrum (with C. W. McCurdy), *Chem. Phys. Letts*. **140**, 232 (1987).

73. On the Disappearance of Continuum Exchange Integrals From Algebraic Variational Calculations of Electron Scattering (with B. Schneider) *Phys. Rev. A* **37**, 1044 (1988).

74. The Complex Kohn Variational Method: Application to Low-Energy Electron Molecule Collisions (with B. Schneider) *Phys. Rev. A* **37**, 3749 (1988).

75. An Algebraic Variational Approach to the Calculation of Total Cross Sections for One- and Two-Photon Ionization (with A. E. Orel), *Chem. Phys. Letts*. **146**, 434 (1988).

76. Pseudospectral Techniques in Minimum-Variance Calculations of Electron-

Scattering Cross Sections (with C. W. McCurdy and B. I. Schneider), *Phys. Rev A* **38**, 5921 (1988).

77. Electron-Impact Excitation of the $b^3\Sigma_u$ State of H_2 Using the Complex Kohn Method: R-Dependence of the Cross Section (with B. I. Schneider), *J. Phys B* **21**, L691 (1988).

78. Collisions of Electrons with Polyatomic Molecules: Electron-Methane Scattering by the Complex Kohn Variational Method (with. C. W. McCurdy), *Phys. Rev. A* **39**, 4487 (1989).

79. Accurate Ab Initio Treatment of Low-Energy Electron Collisions with Polyatomic Molecules: Resonant Electron-Formaldehyde Scattering (with. C. W. McCurdy and B. Schneider), *Phys. Rev. Lett.* **63**, 248 (1989).

80. Minimum Variance Approach to Electron Scattering Calculations: Elimination of Anomalies and Monte Carlo Implementation (with. C. W. McCurdy), *Phys. Rev. A* **40**, 1297 (1989).

81. New Theoretical Approaches for Studying Electron Collisions with Small Molecules, in "Non-Equilibrium Processes in Partially Ionized Gases", edited by M. Capitelli (Plenum, New York, 1990).

82. New Developments in the *Ab Initio* Treatment of Low Energy Electron Collisions with Molecules (with B. I. Schneider, C. W. McCurdy and B. H. Lengsfield III), Proceedings of the ICPEAC Satellite Meeting on Electron-Molecule Collisions, Yale University, July, 1989 (Plenum Press, 1990).

83. Variational Expressions for First-Order Properties Involving Continuum Wave Functions (with A. E. Orel), *Phys. Rev. A* **41**, 1695 (1990).

84. Electronic Excitation of Formaldehyde by Low Energy Electrons: A Theoretical Study Using the Complex Kohn Variational Method, T. N. Rescigno, B. H. Lengsfield, III and C. W. McCurdy, *Phys. Rev. A* **41**, 2462(1990).

85. Resonant Vibrational Excitation of H_2CO by Low Energy Electron Impact, (with B. I. Schneider and C. W. McCurdy) *Phys. Rev. A1* **42**, 3132 (1990).

86. Theoretical Study of Electron-Impact Excitation of N_2^+, (with A. E. Orel and B. H. Lengafield) *Phys. Rev. A* **42**, 5292 (1990).

87. Effective Potentials for Time-Dependent Calculations of Multiphoton Processes in Atoms, (with K. C. Kulander) *Comp. Phys. Comm.* **63**, 523 (1991).

88. Electronic Excitation of H_2 by Electron Impact: Close-coupling calculations

using the complex Kohn variational method, (with Steven D. Parker, C. William McCurdy and Byron H. Lengsfield) *Phys. Rev. A*, **43**, 3514 (1991).

89. Continuum Basis Functions in the Complex Kohn Variational Method (with A. E. Orel) *Phys. Rev. A1* **43**, 1625 (1991).

90. Accurate *Ab Initio* Treatment of Low Energy Electron Collisions with Ethylene (with B. I. Schneider and B. H. Lengsfield) *Phys. Rev. Letts.* **66**, 2728 (1991).

91. Dissociative Excitation of HeH^+ by Electron Impact (with A. E. Orel and B. H. Lengsfield) *Phys. Rev. A* **44**, 4328 (1991).

92. *Ab Initio* Study of Low Energy Electron-Methane Scattering (with B. H. Lengsfield and C. W. McCurdy) *Phys. Rev. A* **44**, 4296 (1991).

93. Electron-Molecule Close-Coupling with Correlated Target Wave Functions: Application to Impact Dissociation of F_2 (with B. H. Lengsfield) *Phys. Rev. A* **44**, 2913 (1991).

94. *Ab Initio* Calculations on Collisions of Low Energy Electrons with Polyatomic Molecules, in *Electronic and Atomic Collisions, Invited Papers, Proceedings of the XVII International Conference on the Physics of Electronic and Atomic Collisions*, Brisbane, Australia 1991 (Adam Hilger, Bristol, 1992).

95. Electron-Impact Excitation of the T and V States of Ethylene: An *Ab Initio* Study (with. B. I. Schneider) *Phys Rev A* **45**, 2894 (1992).

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97. *Ab Initio* Description of Polarization in Low-Energy Electron Collisions with Polar Molecules: Application to Electron-NH_3 Scattering, (with B. H. Lengsfield, C. W. McCurdy and S. D. Parker), *Phys. Rev. A* **45**, 7800 (1992).

98. A Fixed-Nuclei, *Ab Initio* Treatment of Low-Energy Electron-H_2O Scattering, (with B. H. Lengsfield), *Zeitschrift fur Physique D*, **24**, 117 (1992).

99. Polarization and Correlation Effects in Elastic Electron-Li_2 Scattering, (with T. J. Gil, C. W. McCurdy and B. H. Lengsfield), *Phys. Rev. A*, **47**, 255 (1993).

100. On the Dependence of Electron Impact Excitation Cross Sections on Initiial Vibrational Quantum Number in H_2 and D_2 Molecules, (with R. Celiberto), *Phys. Rev. A*, **47**, 1939 (1993).

101. An *Ab Initio* Treatment of Near-Threshold Vibrational Excitation of H_2 by Electron Inpact: New Perspectives on Discrepancies Between Crossed-Beam and

Swarm Data, (with B. K. Elza and B. H. Lengsfield), *J. Phys. B.* **26**, L567 (1993).

102. The Incorporation of Modern Electronic Structure Techniques in Electron-Molecule Collision Problems: Variational Calculations Using the Complex Kohn Method (with. B. H. Lengsfield and C. W. McCurdy), in "Modern Electronic Structure", edited by David Yarkony (World Scientific Publishing, 1995) p.501.

103. Interchannel Coupling and Ground-State Correlation Effects in the Photoionization of CO (with B. H. Lengsfield and A. E. Orel), *J. Chem Phys.* **99**, 5097 (1993).

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105. *Ab Initio* Complex Kohn Calculations of Dissociative Excitation of Water, (with T. J. Gil, C. W. McCurdy and B. H. Lengsfield), *Phys. Rev. A* **49**, 2642 (1994).

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108. The Complex Kohn Variational Method (with C. W. McCurdy, A. E. Orel and B. H. Lengsfield), in "Computational Methods for Electron-Molecule Collisions", edited by W. M. Huo and F. A. Gianturco (Plenum, 1995) p. 1.

109. Electron Molecule Scattering Above the Ionization Threshold (with C. W. McCurdy), *Phys. Rev. Letts.* **73**, 3524 (1994).

110. The Effects of Open Inelastic Channels in the Resonant Dissociative Recombination of HeH^+ (with A. E. Orel and K. C. Kulander) *Phys. Rev. Letts.* **74**, 4807 (1995).

111. Low-Energy Electron Collision Processes in NF_3, *Phys. Rev. A* **52**, 329 (1995)

112. Effective Potential Methods in Variational Treatments of Electron-Molecule Collisions I. Theoretical Formulation (with C. W. McCurdy), *J. Chem. Phys* **104**, 120 (1996).

113. Effective Potential Methods in Variational Treatments of Electron-Molecule Collisions II. Application to HBr, *J. Chem. Phys* **104**, 125 (1996).

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119. Low-Energy Electron Scattering from CH3Cl (with A. E. Orel, and C. W. McCurdy), *Phys. Rev. A* **56**, 2855 (1997).

120. An Approach to Electron Impact Ionization that Avoids the Three-Body Coulomb Asymptotic Form (with C. W. McCurdy and D. A. Byrum), *Phys. Rev. A* **56**, 1958 (1997).

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