

Curriculum Vitae Nancy Jeanne Brown

Education

- 1964 B.S., Chemistry, Virginia Polytechnic Institute, Blacksburg, Virginia
1969 M.S., Molecular Physics, University of Maryland, College Park, Maryland
1971 Ph.D., Chemical Physics, Department of Chemistry and Institute for Molecular Physics,
University of Maryland, College Park, MD

Professional Experience

- Present:** Senior Scientist, Lawrence Berkeley Laboratory, University of California
Department Head Atmospheric Sciences Department Environmental Energy
Technologies Division, Lawrence Berkeley National Laboratory
Affiliate Faculty, Energy and Resources Group, University of California, Berkeley 1983
to present.
- 1991-1997 Head, Environmental Research Program within the Energy and Environment Division,
and Group Leader, Combustion Research Group at Lawrence Berkeley Laboratory
- 1998-2002 Research Engineer, Department of Civil and Environmental Engineering, University of
California, Berkeley
- 1993 Lecturer, College of Natural Resources, University of California, Berkeley
- 1989 Professor Inviteé, Université Pierre et Marie Curie, Paris VI
- 1989-2002 Governor's Appointee, Scientific Advisory Committee, State of California Acid
Deposition Program
- 1982-1994 Member, Board of Directors, The Combustion Institute
- 1983-2004 Affiliate Faculty, Energy and Resources Group, University of California, Berkeley
- 1981-2002 Visiting Research Scientist, Combustion Research Facility, Sandia National Laboratory,
Livermore, California
- 1976-1984 Staff Scientist, Lawrence Berkeley Laboratory, University of California, Berkeley
- 1977 Lecturer, Department of Mechanical Engineering, University of California, Berkeley
- 1975-1976 Assistant Research Engineer, Department of Mechanical Engineering, University of
California, Berkeley
- 1973-1975 Lecturer, Department of Chemistry, University of California, Berkeley
- 1973 Visiting Scholar, Department of Mechanical Engineering, University of California,
Berkeley
- 1972-1973 Adjunct Assistant Professor, Department of Chemistry, University of Maryland
- 1971-1973 Post-doctoral Fellow, Johns Hopkins University, Applied Physics Laboratory
- 1964-1965 Research Chemist, Goddard Space Flight Center, Greenbelt, MD

Societies and Awards

James Lewis Howe Award for Undergraduate Chemistry
National Science Foundation Fellowship for Undergraduate Research
Phi Kappa Phi
American Men and Women of Science
American Chemical Society
American Physical Society
American Geophysical Union
The Combustion Institute
Association for Women in Science, Inc.
Visiting Professor of Combustion Chemistry at Université Pierre et Marie Curie (Paris, VI)
Who's Who of American Women
International Society for Theoretical Chemical Physics
Air and Waste Management Association

Committees

Professional Service Committees

Member, Board of Directors, The Combustion Institute, 1982-1994
Nominating Committee for Combustion Institute Board of Directors, 1989-1994
Program Committee, The Combustion Institute, 1979-present
Executive Board, Western States Section of The Combustion Institute, 1983-1996
Chair, Western States Section of The Combustion Institute, 1987-1989
Vice-Chair, Western States Section of The Combustion Institute, 1985-1987
Organizing Committee, International Colloquium on Dynamics of Explosions and Reactive Systems, 1983-1985
Theoretical Chemistry Combustion Working Group, 1980-1985
Member, Program Advisory Committee for 20th Symposium (International) on Combustion and Colloquium Chair, The Combustion Institute, 1983-1984
Program Chair, Western States Section of The Combustion Institute, 1981-1983
Colloquium Chair, 18th International Symposium on Combustion, 1979-1980

National and State Advisory Committees

Reviewer for Federal Public Land Management Act Research Program, 2004-present
Search Committee, EPA 2003
Peer Review Committee for the National Exposure Research Laboratory (NERL) AQ Res. Prog. 2004-2005
DOE/OBER Advisory Committee for the Atmospheric Chemistry Program 2003-present
Committee on Ozone-Forming Potential of Reformulated Gasoline, Board on Atmospheric Sciences and Climate, National Research Council, 1997-1999
Executive Committee and Chemistry Leader for DOE's Combustion Simulation and Modeling Initiative for the Strategic Simulation Initiative 1998-1999
University of California Executive Committee on Toxic Substances Research and Teaching Program, 1996-1998

National and State Advisory Committees (cont.)

Chair, Scientific Advisory Committee, EPA Center (at MIT, Caltech, and NJIT) for Airborne Toxics, 1993-2002

Scientific Advisory Committee, State of California, Acid Deposition Program, 1989-2002

DOE/OHER Multilaboratory Global Change Committee, 1993-1998

Member EPA Environmental Engineering Panel, 1985-present

Member, Advisory Committee - National Science Foundation, Directorate of Engineering, 1989-1992

Advisory Committee, State of California Energy Resources Conservation and Development Commission, 1975-1977

University of California, Berkeley, Committees

Search Committee, Department of Earth and Planetary Science, 2006-present

Thesis Committee for Ling Jin, 2006-present

Thesis Committee for James D. Fine, 2001-2004

Search Committee, Energy and Resources Group, 1996

Executive Committee, Energy and Resources Group, 1996-1999

Committee on Atmospheric Sciences, 1995

Search Committee, Civil Engineering Department, 1991

Search Committee, Mechanical Engineering Department, 1995-1996

Member, Interdisciplinary Committee for Fire Safety Engineering Science, College of Engineering, 1988-present

Curriculum Committee, Energy and Resources Group, 1985-1988

Admissions Committee, Energy and Resources Group, 1983-1985

Lawrence Berkeley Laboratory Committees

Member, Laboratory Compensation Committee, 1997-1999

Laboratory Communication Task Force, 1994-present

Laboratory Task Force on Biotechnology, 1995-1997

Combustion Planning Group, 1991-1995

Strategic Planning - New Initiatives Group, 1993-1994

Critical Environmental Technologies Planning Group, 1993-1997

Chair, Study Group for Staff Development, 1989-1990

Chair, Equal Opportunity Employment Council, 1986-1992

Member, Laboratory Professional Staff Committee, 1987-1992, 1997-2001

Member, Director's Oversight Committee, 1987-1992

Lawrence Berkeley Laboratory Formal Grievance Panel, 1983-present

Member, Equal Employment Opportunity Council, 1984-1986

Space Committee, 1978

Environmental Energy Technologies Division Committees (EETD)

Chair, Professional Staff Committee, EETD, 1997-2002
Division Council, 1992-present
Professional Staff Committee, EETD, 1985-1997, 1997-present
20th Anniversary Committee, 1993-1994
CABET Executive Committee, 1992-1997
Advisory Committee, Environmental Research Program, 1985-1992
Oversight Committee for Scientific Burden, 1985-1987
Area Coordinator for Atmospheric Initiative, 1984-1987
Committee for Re-organization, 1984-1985
Chair of the Committee for the Craig Hollowell Memorial Lecture Series, 1982-1984
Space Committee, 1978-1979

Service as a Referee

Chemical Physics
Combustion and Flame
International Journal Chemical Kinetics
Journal of Computational Chemistry
Combustion Institute
American Institute of Aeronautics and Astronautics
Physics of Fluids
Department of Energy, Basic Energy Sciences
Department of Energy, Small Business Incentive Research
Combustion Science and Technology
Journal of Physical Chemistry
Journal of Chemical Physics
National Science Foundation
University-wide Energy Research Group
Department of the Army
Environmental Protection Agency
Cottrel Foundation
Fire and Materials
Environmental Science and Technology

Principal Investigator

National Bureau of Standards, Polymer Combustion and Flame Chemistry, 1978-1979
State of California, Air Resources Board, Secondary Pollutants from Ammonia Injection NOx Control Processes, 1978-1981
Department of Energy, BES, Combustion Chemistry, 1978-present
Department of Energy, OHER, Combustion Diagnostics, 1979-1984
Department of Energy, Morgantown Energy Technology Center, Staged Combustion, 1980-1981
Department of Energy, FE, Coal Hydrology, oversight of close-out of project during the summer 1981
Department of Energy, FE, Oil Shale, interim Principal Investigator, 1981
Department of Energy, CRE, Combustion Studies/Space Heaters, 1983-1985

Principal Investigator (cont.)

State of California, Nitrous Oxide Combustion Chemistry, 1987-1988

Co-PI, Defense Nuclear Agency, Global Effects, 1987-1990

Co-PI, Department of Energy, Indoor Atmospheric Chemistry: Interactions of Radon with Other Gaseous Pollutants, 1988-1989

CIEE, Sensitivity Analysis of RAPRENO_x, 1990-1991

CIEE, Energy Efficient Burners, etc., 1992-1995

LDRD, SELECT Program, 1993-present

DOE/OHER, Ecological Systems and Climate Change, 1995-present

LDRD, High Performance Computing and Combustion Modeling, 1996-1998

Sandia National Laboratories, High Performance Computing in Combustion Chemistry, 1996-1997

Department of Energy, FE, Identifying Crucial Air Quality Research Issues for Oil and Gas Exploration and Recovery, 1998-1999

Department of Energy, FE, An Assessment of the Air Quality Impacts of Oil and Gas Exploration in Southwest Wyoming, 1998-1999

Department of Energy, FE, An Assessment of the Air Quality Impacts of Oil and Gas Exploration in the West, 1999-present

Department of Energy, FE, A Predictive Model of Indoor Concentrations of Outdoor PM-2.5 in Homes, 1999-present

Department of Energy, FE, Secondary Organic Aerosols, 2002-present

Department of Energy, FE, A Predictive Model for Indoor Concentrations of Outdoor VOCs, 2002-present

Department of Energy, FE, Quantifying and Reducing Air Quality Modeling Uncertainties, 2000-2003

Department of Interior, An Ammonia Emission Inventory for Wyoming, 2002

PUBLICATIONS

ARCHIVAL PUBLICATIONS

- Jackson, W.M. J. Faris and N.J. Buccos. Vacuum-Ultraviolet Photolysis of Ethane Films. J. Chem. Phys. **45**, 4145, 1966.
- Brown, N.J. and R.J. Munn. Molecular Dynamics: The Dissociation of H₂ by He. J. Chem. Phys. **56**, 1983, 1972.
- Brown, N.J. and R.J. Munn. Collision Integrals for Isotopic Hydrogen Molecules. J. Chem. Phys. **56**, 2761, 1972.
- Brown, N.J. and R.J. Munn. Inert Gas Potentials for Mixed Interactions. J. Chem. Phys. **57**, 2216, 1972.
- Monchick, L., N.J. Brown and R.J. Munn. Viscosity of Ortho and Para Hydrogen Mixtures. Mol. Phys. **25**, 249, 1973.
- Brown, N.J. Classical Dynamics: The Study of Vibrational and Rotational Excitation in Li⁺, H₂. J. Chem. Phys. **60**, 2958, 1974.
- Brown, N.J., R.M. Fristrom and R.F. Sawyer. A Simple Pre-mixed Flame Model Including an Application to H₂ + Air Flames. Combustion and Flame **23**, 269, 1974.
- Brown, N.J. and D.M. Silver. Reactive and Inelastic Scattering of H₂ + D₂ Using a London-Type Potential Energy Surface. J. Chem. Phys. **65**, 311, 1976.
- Brown, N.J. and R.M. Fristrom. A Two-Zone Model of Flame Propagation Applied to H₂/Air and HCl Inhibited Flames. Fire and Materials **2**, 17, 1978.
- Brown, N.J., K.H. Eberius, R.M. Fristrom, K.H. Hoyermann and H.G. Wager. Low Pressure Hydrogen/Oxygen Flame Studies. Combustion and Flame, **33**, 151, 1978.
- Brown, N.J. and D.M. Silver. Reactive and Inelastic Scattering of H₂ + D₂ Using a Repulsive Model Potential Energy Surface. J. Chem. Phys. **68**, 3607, 1978. LBL Report No. 9539.
- Brown, N.J. and D.M. Silver. Comparison of Reactive and Inelastic Scattering of H₂ + D₂ Using Four Semiempirical Potential Energy Surfaces. J. Chem. Phys. **72**, 3869, 1980. LBL Report No. 8847.
- Silver, D.M. and N.J. Brown. Valence Bond Model Potential Energy Surfaces for H₄. J. Chem. Phys. **72**, 3859, 1980. Also LBL Report No. 8846.
- Brown, N.J. and R.F. Sawyer. Combustion Sources of Nitrogen Compounds. California Air Environment, **7**, 5, 1980. LBL Report No. 9543.
- Pitz, W.J., R.F. Sawyer and N.J. Brown. The Structure of a Poly(ethylene) Opposed Flow Diffusion Flame. Proceedings of the Combustion Institute **18**, pp 1871-79 The Combustion Institute, 1981. LBL Report No. 10784.
- Brown, N.J. and R.W. Schefer. A Computational Study of Physical and Chemical Inhibition in a Perfectly Stirred Reactor. Fire and Materials, **5**, 14, 1981. LBL Report No. 10941.

ARCHIVAL PUBLICATIONS (cont.)

- Lucas, D. and N.J. Brown. Characterization of the Selective Reduction of NO by NH₃. Combustion and Flame, 47, 219, 1982. LBL Report No. 13649.
- Miller, J.A. and N.J. Brown. The Dynamics of Unimolecular Dissociation of HO₂: Phase Space Sampling, Microcanonical Rate Coefficients and Rotational Effects. J. Phys. Chem. 86, 772. Invited Paper for special commemorative issue dedicated to Professor Bauer, 1982. LBL Report No. 13242.
- Cuellar, E. and N.J. Brown. Detection of S₂ by Magnetic Tuning of the Cr(I) Atomic Emission Line. J. Phys. Chem. 86, 1966. LBL Report No. 13249.
- Lucas, D. and N.J. Brown. The Influence of Thiophene on the Selective Reduction of NO by NH₃. Combustion and Flame, 49, 283, 1983. LBL Report No. 13647.
- Lucas, D., N.J. Brown and A.S. Newton. The Measurement of Ammonia in Lean Combustion Exhausts. Combustion Science and Technology, 29, 309, 1982. Also LBL Report No. 13648.
- Schefer, R.W. and N.J. Brown. A Comparative Study of HCl and HBr Combustion Inhibition. Combustion Science and Technology, 29, 113, 1982. LBL Report No. 13765.
- Brown, N.J., R.W. Schefer and F. Robben. High Temperature Oxidation of H₂ on a Platinum Catalyst. Combustion and Flame, 51, 263, 1983. LBL Report No. 13744.
- Cuellar, E. and N.J. Brown. The Measurement of NO in Methane/Air Flames by Tunable Atomic Line Molecular Spectroscopy. AIAA, Progress in Astronautics and Aeronautics, 95, 750, 1984. LBL Report No. 16468.
- Hodgson, A.T., M.J. Pollard and N.J. Brown. Mercury Emissions from a Modified In-situ Oil Shale Retort. Atmospheric Environment 18, 247, 1984. LBL Report No. 16027.
- Brown, N.J. and J.A. Miller. Collisional Energy transfer in the Low Pressure Limit Unimolecular Dissociation of HO₂. J. Chem. Phys., 80, 5568, 1984.
- Lucas, D. R. Peterson, N.J. Brown and A.K. Oppenheim. Molecular Beam Mass Spectrometer Sampling of Flash Ignited Combustion. Proceedings of the Combustion Institute 20, 1205, 1984. LBL Report No. 17222.
- Lucas, D., M.D. Morrow and N.J. Brown. Measurement of Sulfur Dioxide in the Post-Combustion Environment. Proceedings of the Combustion Institute 20, 1313, 1984. LBL Report No. 17274.
- Lucas, D. and N.J. Brown. Optical Measurements of SO₂ in Combustion Environments. Analytical Spectroscopy 19, 361, 1984. W.S. Lyon, ed. Elsevier, Amsterdam. LBL Report No. 16741.
- Rashed, O. and N.J. Brown. A Molecular Dynamics Study of the Reaction, H₂ + OH⁻ → H₂O + H. J. Chem. Phys. 82, 5506, 1985. LBL Report No. 18531.
- Lionel, T., R.J. Martin and N.J. Brown. A Comparative Study of Combustion in Unvented Kerosene Heaters. Environmental Science and Technology 20, 78, 1986. LBL Report No. 18535.

ARCHIVAL PUBLICATIONS (cont.)

Miller, J.A., C. Parrish and N.J. Brown. A Statistical Theoretical Investigation of the Thermal Rate Coefficient and Branching Ratio for the Reaction $O + HCN \rightarrow$ Products. J. Phys. Chem. **90**, 3339, 1986.

Brown, N.J. and O. Rashed. Intra- and Intermolecular Energy Transfer in $H_2 + OH$ Collisions. J. Chem. Phys. **85**, 4348, 1986. LBL Report No. 21392.

Lucas, D., D. Dunn-Rankin, K. Hom, and N.J. Brown. Ignition by Excimer Laser Photolysis of Ozone. Combustion and Flame **69**, pp 171-184, 1987. LBL Report No. 20871.

Martin, R.J. and N.J. Brown. The Importance of Thermodynamics to the Modeling of Nitrogen Combustion Chemistry. Combustion and Flame, **74**, pp 365-376, 1989.

Brown, N.J., R.L. Dod, F.W. Mowrer, T. Novakov, and R.B. Williamson. Smoke Emission Factors from Medium Scale Fires: Part 1. Aerosol Science and Technology, **10** pp 2-19, 1989. LBL Report No. 24912.

Dod, R.L., N.J. Brown, F.W. Mowrer, T. Novakov and R.B. Williamson. Smoke Emission Factors from Medium Scale Fires: Part 2. Aerosol Science and Technology, **10**, pp 20-27, 1989. LBL Report No. 24893.

Judson, R.S., H. Rabitz and N.J. Brown. A Classical Functional Sensitivity Analysis of Coplanar Inelastic Scattering for $H_2 + H_2$ and its Isotopic Analogues. J. Phys. Chem., **93**, pp 2400-2411, 1989.

Fleischmann, C.M., R.L. Dod, N.J. Brown, T. Novakov, R.B. Williamson and F. Mowrer. The Use of Medium Scale Experiments to Determine Smoke Characteristics, Characterization and Toxicity of Smoke, ASTM Special Technical Publication, No. 1082, (ed. H. K. Hasegawa), pp 147-164, American Society for Testing and Materials, Philadelphia, 1990.

Martin, R.J. and N.J. Brown. Nitrous Oxide Formation and Destruction in Lean Premixed Combustion, Combustion and Flame, **80**, pp 238-255, 1990. LBL Report No. 27127.

Martin, R. J. and Brown, N. J. Analysis and Modeling Studies of Nitrous Oxide Chemistry in Lean Premixed Combustion, Combustion and Flame **82**, pp 312-333, 1990. LBL Report No. 27128.

Brown, N.J. and M. Longuemare. Calculation of Rotational Energy Transfer Rates for HD ($v=1$) in Collisions with Thermal HD. Journal of Chemical Physics **93**, pp 2413-2417, 1990. LBL Report No. 28697.

N.J. Brown. Rate Coefficient Calculations for Combustion Modeling. Progress in Astronautics and Aeronautics **135**, pp 37-57, 1991. LBL Report No. 27129.

Chang, J., N.J. Brown, M.D. D'Mello, R.E. Wyatt, and H. Rabitz. Quantum Functional Sensitivity Analysis for the Collinear $H + H_2$ Reaction Rate Coefficient. J. Chem. Phys. **96**, pp 3523-3530, 1992. LBL Report No. 31387.

Chang, J., N.J. Brown and H. Rabitz. Construction of Classical Sensitivity Maps for Rotationally Inelastic Collisions of H_2 with HD. J. Phys. Chem. **96**, pp 6890-6903, 1992. LBL Report No. 31750.

ARCHIVAL PUBLICATIONS (cont.)

Chang, J., N.J. Brown, M.D. D'Mello, R.E. Wyatt and H. Rabitz. Quantum Functional Sensitivity Analysis within the Log-derivative Kohn Variational Method for Reactive Scattering. J. Chem. Phys. **97**, pp 6226-6239, 1992. LBL Report No. 32372.

Chang, J., N.J. Brown, M.D. D'Mello, R.E. Wyatt, and H. Rabitz. Predicting Observables on Different Potential Energy Surfaces using Feature Sensitivity Analysis: Application to the Collinear H + H₂ Exchange Reaction. J. Chem. Phys. **97**, pp 6240-6248, 1992. LBL Report No. 32373.

Chang, J. and N.J. Brown. Quantum Functional Sensitivity Analysis for the 3-D (J=O) H + H₂ Reaction. Int. J. Quantum Chem **27**, pp 567-585, 1993. LBL Report No. 33866.

Chang, J. and N.J. Brown. Comparison of the Quantum Dynamics and Sensitivity Analysis for Different Isotopomers of the H + H₂ Reaction. J. Chem. Phys. **103**, pp 4097-4128, 1995. LBL Report No. 36856.

Chang, J. and N.J. Brown. Quantum Functional Sensitivity Analysis of the D+H₂ Reaction Rate Coefficient via the Separable Rotation Approximation. J. Chem. Phys. **100**, pp 17740-17755, 1996. LBL Report No. 38875.

Chang, J. and N.J. Brown. Sensitivity of the Product Vibrational Distribution of the F+H₂ Reaction to the T5A Potential Energy Surface. Chemical Physics Letters, **254**, pp 147-157, 1996. LBL Report No. 38277.

Gentile, A.C., D.A. Evensky, J.L. Durant, N.J. Brown and M.L. Koszykowski. Convergence and Path Cancellation in Quantum Monte Carlo Real Time Path Integration. J. Chem. Phys. **105**, pp 7613-7616, 1996.

Vuilleumier, L., R.A. Harley and N.J. Brown. First-and Second-Order Sensitivity Analysis of a Photochemically Reactive System (a Green's Function Approach). Environmental Science and Technology **31**, pp 1206-1217, 1997.

Brown, N.J., G. Li, and M.L. Koszykowski. Mechanism Reduction Via Principal Component Analysis. International Journal Chemical Kinetics **29**, pp 393-414, 1997.

Brown, N.J., K.L. Revzan and M. Frenklach. Detailed Kinetic Modeling of Soot Formation in Ethylene/Air Mixtures Reacting in Ethylene/Air Mixtures Reacting in a Perfectly Stirred Reactor. Proceedings o the Combustion Institute **27**, The Combustion Institute, Pittsburgh, pp 1573-1580, 1998. LBNL Report No. 41161.

Frenklach, M., N.W. Moriarty and N.J. Brown. "Hydrogen Migration in Polyaromatic Growth," Proceedings o the Combustion Institute **27**, The Combustion Institute, Pittsburgh, pp 1655-1661, 1998. LBNL Report No. 41162.

Lazarides, A.A., H. Rabitz, J. Chang and N.J. Brown. Identifying Collective Dynamical Observables Bearing on Local Features of Potential Surfaces. J. Chem. Phys. **109**, pp 2065-2070, 1998. LBNL Report No. 43757.

ARCHIVAL PUBLICATIONS (cont.)

Tonse, S.R., N.L. Moriarty, N.J. Brown and M. Frenklach. PRISM: Piecewise Reusable Implementation of Solution Mapping. An Economical Strategy for Chemical Kinetics. Invited paper for a special issue on Combustion Chemistry to commemorate the 70th birthday of Professor Assa Lifshitz. Israel Journal of Chemistry **39**, pp 97-106, 1999. LBNL Report No. 42576.

Moriarty, N.W., N.J. Brown and M. Frenklach. Hydrogen Migration in the Phenylethene-2-yl Radical. J. Phys. Chem. **103**, pp 7127-7135, 1999. LBNL Report No. 43163.

A co-author of the National Research Council Report of the Committee on Ozone-Forming Potential of Reformulated Gasoline, National Academy Press. Committee members: W.L. Chameides, C.A. Amann, R. Atkinson, N.J. Brown, J.G. Calvert, F.C. Fehsenfeld, J.P. Longwell, M.J., Molina, S.T. Rao, A.G. Russell, S.L. Saricks, 1999.

Vuilleumier, L., R.A. Harley, and N.J. Brown, J.R. Slusser, D. Kolinski and D.S. Bigelow. Variability in Solar Ultraviolet Irradiance during the Southern California, Ozone Study (SCOS97), Atmospheric Environment **35**, pp. 1111-1122, 1999. LBNL Report No. 43614.

Bell, J.B., N.J. Brown, M.S. Day, M. Frenklach, J.F. Grcar, R.M. Propp and S.R. Tonse, Scaling and Efficiency of PRISM in Adaptive Simulations of Turbulent Premixed Flames. Proceedings of the Combustion Institute **28**, pp. 107-113, 1999. LBNL Report No. 44732.

Bell, J.B., N.J. Brown, M.S. Day, M. Frenklach, J.F. Grcar and S.R. Tonse. The Dependence of Chemistry on the Inlet Equivalence Ratio in Vortex-Flame Interactions. Proceedings of the Combustion Institute **28**, pp. 1933-1939, 1999. LBNL Report No. 44730.

Vuilleumier, L., J.T. Bamer, R.A. Harley and N.J. Brown. Evaluation of Nitrogen Dioxide Photolysis Rates in an Urban Area Using Data from the Southern California Ozone Study. Atmospheric Environment **35**, pp. 6525-6537, 2001. LBNL Report No. 47726.

Fischer, M.L., D. Littlejohn, M.M. Lunden and N.J. Brown. Automated Measurements of Ammonia and Nitric Acid in Indoor and Outdoor Air. Environmental Science and Technology **37**, pp 2114-2119, 2002. LBNL Report No. 51385.

Tonse, S.R., N.W. Moriarty, M. Frenklach and N.J. Brown. Computational Economy Improvements in PRISM. International Journal of Chemical Kinetics **35**, pp 438-452 2003. LBNL Report No. 48858.

Lunden, M.M., T.L. Thatcher, S.V. Hering and N.J. Brown. The Use of Time- and Chemically-Resolved Particulate Data to Characterize the Infiltration of Outdoor PM-2.5 into a Residence in the San Joaquin Valley. Environmental Science and Technology **37**, pp 4724-4732, 2003. LBNL Report No. 52221.

Thatcher, T.L., M.M. Lunden, K.L. Revzan, R.G. Sextro, and N.J. Brown. A Concentration Rebound Method for Measuring Particle Penetration and Deposition in the Indoor Environment. Aerosol Science and Technology **37**, pp 847-864, 2003. LBNL Report No. 51631.

Fine, J.D., L. Vuilleumier, S. Reynolds, P. Roth, and N.J. Brown. Evaluating Uncertainties in Regional Photochemical Air Quality Modeling. Invited paper Annual Review of Energy and Resources **28**, pp 59-106, 2003. LBNL Report No. 52222.

ARCHIVAL PUBLICATIONS (cont.)

Tonse, S.R. and N.J. Brown. Dimensionality Estimate of the Manifold in Chemical Composition Space for a Turbulent Premixed H₂+air Flame. International Journal of Chemical Kinetics **36**, pp 326-336, 2004. LBNL Report No. 52058.

Lunden, M.M., K.L. Revzan, M.L. Fischer, T.L. Thatcher, D. Littlejohn, S.V. Hering, and N.J. Brown. The Transformation of Outdoor Ammonium Nitrate Aerosols in the Indoor Environment. Atmospheric Environment **37**, pp 5633-5644, 2003. LBNL Report No. 52795.

Singer, B.C., K.L. Revzan, T. Hotchi, A.T. Hodgson, and N.J. Brown. Sorption of Organic Gases in a Furnished Room. Atmospheric Environment **38**, pp 2483-2494, 2004. LBNL Report No. 53943.

Brown, N. J. and K.L. Revzan. Comparative Sensitivity Analysis of Transport Properties and Reaction Rate Coefficients. International Journal of Chemical Kinetics, **37**, pp 538-553, 2005. LBNL Report No. 55671

Lunden, M.M., D.R. Black, M. McKay, K.L. Revzan, A.H. Goldstein, and N.J. Brown. Characteristics of Fine Particle Growth Events Observed Above a Forested Ecosystem in the Sierra Nevada Mountains of California. Aerosol Science and Technology **40**, pp 373-388, 2005. LBNL Report No. 58135.

McMeeking, G.R., S.M. Kreidenweis, M. Lunden, J. Carrillo, C.M. Carrico, T. Lee, P. Herckes, G. Engling, D.E. Day, J. Hand, N. Brown, W.C. Malm, and J.L. Collett, Jr. Smoke-impacted Regional Haze in California during the Summer of 2002. Agricultural and Forest Meteorology **137**, pp 25-42, 2006.

Singer, B.C., A.T. Hodgson, T. Hotchi, K.Y. Ming, R.G. Sextro, E.E. Wood and N.J. Brown. Sorption of Organic Gases in Residential Rooms. In Press. Invited paper to appear in a special issue of Atmospheric Environment, 2006. LBNL Report No. 59303.

Hering, S.V., M.M. Lunden, M.L. Fischer, T.W. Kirchstetter, T.L. Thatcher and N.J. Brown. Using Regional Data and Building Leakage to Assess Indoor Concentrations of Particles of Outdoor Origin. Aerosol Science and Technology **41**, pp 639-654, 2007. LBNL Report No. 60878.

Tonse, S.R., M.S. Day, and N.J. Brown. Dynamic Reduction of a CH₄/Air Chemical Mechanism Appropriate for Investigating Vortex Flame Interactions. International Journal of Chemical Kinetics **39**, pp 204-220, 2007. LBNL Report No. 59750.

Lunden, M.M., T.W. Kirchstetter, T.L. Thatcher, S.V. Hering and N.J. Brown. Factors Affecting the Indoor Concentration of Carbonaceous Aerosols of Outdoor Origin. In press Atmospheric Environment, 2008. LBNL Report No. 60877.

Jin, L., Tonse, S.R., Cohan, D.S., Mao, X., Harley, R.A., Brown, N.J., Sensitivity Analysis of ozone formation and transport for a Central California Air Pollution Episode. In press Environmental Science and Technology, 2008.

Tonse, S.R., Brown, N.J. Jin, L., Harley, R.A., A process Analysis Based Study of the Ozone Weekend Effect. Accepted for publication in Atmospheric Environment, 2008.

THESES

Brown, N.J. The Role of Angular Dependent Potentials in the Scattering of Light Diatomic Molecules. M.S. Thesis, University of Maryland, 1969.

Brown, N.J. Energy Exchange in H₂ and He Collisions. Ph.D. Thesis, University of Maryland, 1971.

BOOK CHAPTERS

Brown, N.J. Halogen Kinetics Pertinent to Flame Inhibition: A Review. ACS Symposium Series 16, Halogenated Fire Suppressants, Richard G. Gann, Editor, 341, 1975.

Schefer, R.W., N.J. Brown and R.F. Sawyer. The Effect of Halogens on the Blowout Characteristics of an Opposed Jet Stabilized Flame. ACS Symposium Series 16, Halogenated Fire Suppressants, Richard G. Gann, Editor, 208, 1975.

Brown, N.J., E. Cuellar and D. Lucas. Measurement of Nitrogenous and Sulfurous Emissions. Advanced Techniques in Synthetic Fuels Analysis, Technical Information Center, U.S. Department of Energy, Washington, D.C., 1983. LBL Report No. 143663.

Gentile, A.C., D.A. Evensky, J.L. Durant, N.J. Brown and M.L. Koszykowski. Reaction Dynamics and Quantum Monte Carlo Solution of Real Time Path Integrals. Modeling of Chemical Reactive Systems, Heidelberg, Germany, J. Warnatz, F Behrendt, eds. Univ. of Heidelberg, 1997.

CONFERENCE PAPERS

Matthews, R.D., O.I. Smith, N.J. Brown, and R.F. Sawyer. Measurements of Low Molecular Weight Nitrogen Compounds in Flame Systems. Western States Section, The Combustion Institute, Paper No. 75-16, 1975.

Schefer, R.W., R.K. Cheng, F.A. Robben, and N.J. Brown. Catalyzed Combustion of H₂/Air Mixtures on a Heated Platinum Plate. Western States Section, The Combustion Institute, Paper No. 78-33, 1978. LBL Report No. 7801.

Brown, N.J. and R.W. Schefer. A Computational Study of Physical and Chemical Flame Inhibition. Western States Section, The Combustion Institute, Paper No. 78-43, 1978. LBL Report No. 6899.

Eitzen, T.S., N.J. Brown, A.S. Newton, A.K. Gordon and K.S. Basden. Characterization of NO_x Removal Through Ammonia Addition. Western States Section, The Combustion Institute, Paper No. 79-22, 1979. LBL Report No. 8849.

Pitz, W.J., R.F. Sawyer and N.J. Brown. (1979). Flame Structure Measurements of Polymer Diffusion Flames. Western States Section, The Combustion Institute, Paper No. 79-47, 1979. LBL Report No. 9567.

Cuellar, E. and N.J. Brown. Combustion Diagnostics by Tunable Atomic Line Molecular Spectroscopy, Proceedings First Specialists Meeting (International) of the Combustion Institute, 545, 1981. LBL Report No. 12127.

CONFERENCE PAPERS (cont.)

Lucas, D. and N.J. Brown. The Reduction of NO by NH₃ Addition. Western States Section of the Combustion Institute, Paper No. WSS/CI 81-26, 1981. LBL Report No. 12215.

Lucas, D. and N.J. Brown. The Influence of Fuel Sulfur on the Selective Reduction of NO by NH₃. Western States Section, The Combustion Institute, Paper No. 81-41, 1981. LBL Report No. 12128.

Cuellar, E. and N.J. Brown. A Comparative Study of NO Measurement in Methane/Air Flames. Western States Section of the Combustion Institute, Paper No. WSS/CI 82-65, 1982. LBL Report No. 15062.

Pollard, M.J., A.T. Hodgson and N.J. Brown. Measurement of Mercury Emissions from a Modified In-situ Oil Shale Retort. EPA Proceedings: National Symposium on Recent Advances in Pollutant Monitoring of Ambient Air and Stationary Sources. EPA-600-9-84-001 EMSL, 1983. LBL Report No. 16246.

Brown, N.J. and J.A. Miller. Collisional Energy Transfer In the Low Pressure Limit Unimolecular Dissociation of HO₃ Western States Section of the Combustion Institute, Paper No. WSS/CI 83-63, 1983. LBL Report No. 16790.

Lucas, D. and N.J. Brown. Optical Measurement of SO₂ in Combustion Environments. Proceedings of the 26th ORNL-DOE Conference on Analytical Chemistry in Energy Technology, 1983. LBL Report No. 16741.

Lucas, D., R. Peterson, R., N.J. Brown, F.C. Hurlbut and A.K. Oppenheim. Molecular Beam Sampling in Transient Combustion. Second Symposium on Energy Engineering Sciences. Argonne National Laboratory. CONF.8404123, 1984. LBL Report No. 17487.

Lionel, T., R.J. Martin, and N.J. Brown. A Comparative Study of Combustion in Unvented Space Heating Devices. Paper No. 84-57, The Western States Section/The Combustion Institute, 1984. LBL Report No. 18535.

Rashed, O. and N.J. Brown. A Molecular Dynamics Study of the Reaction, H₂+ OH -- H₂O + H. Paper No. 84-93. The Western States Section/The Combustion Institute, 1984. LBL Report No. 18531.

Brown, N.J. Chemistry and Detection of Combustion-Generated Air Pollutants. Invited Paper. Combustion Research Workshop, Faculty of Engineering, Cairo, University, 1985.

Rashed, O. and N.J. Brown. Energy Transfer in Non-Reactive and Reactive H₂ + OH Collisions. Paper No. 1-3B. The Western States Section/The Combustion Institute, 1985. LBL Report No. 19458.

Miller, J.A., C. Parrish, and N.J. Brown. A Statistical-theoretical Investigation of the Thermal Rate Coefficient and Branching ratio for the Reaction O + HCN → Production. Paper 85-33. The Western States Section/The Combustion Institute, 1985.

Lucas, D., D. Dunn-Rankin, K. Hom, and N.J. Brown. Ignition by Excimer Laser Photolysis of Ozone. Western States Section of the Combustion Institute, Paper No. WSS/CI 86-36, 1986.

CONFERENCE PAPERS (cont.)

Martin, R.J. and N.J. Brown. Formation and Destruction of Nitrous Oxide in Lean, Premixed Combustion. Western States Section of the Combustion Institute, Paper No. WSS/CI 87-1. Joint Western States and Japanese Sections (of the Combustion Institute) Meeting in November 1987 at Honolulu, Hawaii, 1987.

Brown, N.J., R.L. Dod, F.W. Mowrer, T. Novakov, and R.B. Williamson. Smoke Emission Factors from Medium Scale Fires: Part 1 Presented at the Third International Conference on Carbonaceous Particles in the Atmosphere, October 5- 8, 1987, Lawrence Berkeley Laboratory, University of California, Berkeley, CA. LBNL Report No. 24912.

Dod, R.L., N.J. Brown, F.W. Mowrer, T. Novakov and R.B. Williamson. Smoke Emission Factors from Medium Scale Fires: Part 2. Presented at the Third International Conference on Carbonaceous Particles in the Atmosphere, October 5- 8, 1987, Lawrence Berkeley Laboratory, University of California, Berkeley, CA. LBNL Report No. 24893.

Martin, R.J., D. Lucas and N.J. Brown. Nitrogen Species Measurement in a Flash Ignited Combustion System. Extended Abstract for the Joint Meeting of the Canadian Combustion Section and the Western States Section of the Combustion Institute and also poster session at the Twenty-third Symposium (International) on Combustion, 1990. LBL Report No. 28735.

Brown, N.J. and J. Garay. The Reduction of NO_x by HNCO. Western States Section/The Combustion Institute Paper 92-95, 1992. LBL Report No. 32950.

Armstrong, R.C., J.F. Macfarlane, M.L. Koszykowski, R.E. Cline, J.Y. Chen and N.J. Brown. The Advanced Combustion Modeling Environment. National Meeting of the American Chemical Society, Washington, D.C., 1992.

Brown, N.J. and J. Garay. Production of N₂ from the Reduction of NO_x by HNCO. Proceedings of the 5th International Workshop on Nitrous Oxide Emissions (Tsukuba), p. 183, 1993.

Macfarlane, J.F., R.C. Armstrong, R.E. Cline, F. Dai, J.Y. Chen, N.J. Brown and M.L. Koszykowski. Application of Parallel Object-Oriented Environment and Toolkit (POET) to Combustion Problems. Hawaii International Conference on System Sciences, 1993.

Koszykowski, M.L., R.C. Armstrong, F. Dai, J.Y. Chen and N.J. Brown. Full Chemistry in Turbulent Combustion Dynamics. Fifth International Conference on Numerical Combustion, Germany, (Stuttgart, TECFLAM), p. 11, 1993.

Chang, J. and N.J. Brown. Quantum Functional Sensitivity Analysis for the H + H₂ Reaction. Abstract, 14th Conference on the Dynamics of Molecular Collisions, Helen, Georgia, June 6-11, 1993.

Koszykowski, M.L., R. Cline, R.C. Armstrong, J. Macfarlane and N.J. Brown. Massively Parallel Computing for Chemical Processing. Proc. COMMP Workshop, Tokyo, Japan, 1993.

Koszykowski, M.L., J. Macfarlane, R.C. Armstrong, J.Y. Chen and N.J. Brown. Achieving Full Chemistry in Combustion Models Using POET. High Performance Computing Symposium—Grand Challenge Applications, Arlington, Virginia, 1993.

CONFERENCE PAPERS (cont.)

Evensky, D.A., J. Chang, A.C. Gentile, U. Schnupf, N.J. Brown, J.L. Durant and M.L. Koszykowski. Quantum Monte Carlo Evaluation of Chemical Reaction Rate Coefficients. Second Electronic Conference on Computational Chemistry, <http://www.mephisto.ca.sandia.gov>, 1995.

Li, G., J. Garay, N.J. Brown and M.L. Koszykowski. Mechanism Reduction via Principal Component Analysis. Proc. Central States/Western States/Mexican National Section of The Combustion Institute and American Flame Research Committee Joint Spring Meeting, San Antonio, Texas; April 23-26, 1995.

Li, G. and N.J. Brown. Analysis of the Second Stage Burning of a Methane-Air Bunsen Flame with a Boundary Layer Approximation. Proc. Central States/Western States/Mexican National Sections of The Combustion Institute and American Flame Research Committee Joint Spring Meeting, San Antonio, Texas; April 23-26, 1995.

Chang, J. and N.J. Brown. New Results and Recent Developments in Quantum Functional Sensitivity Analysis. 1995 Conference on the Dynamics of Molecular Collisions, Abstract and Poster Session, Asilomar, Ca, July 1995.

Gentile, A.C., D.A. Evensky, J. Chang, U. Schnupf, J.L. Durant, N.J. Brown and M.L. Koszykowski, Quantum Monte Carlo Evaluation of Chemical Reaction Rate Coefficients. Abstract and Poster Session, ACS Meeting, New Orleans, 1996.

Armstrong, R., P. Wyckoff, C. Yam, M. Bui-Pham and N.J. Brown. Frame-Based Components for Generalized Particle Methods. Symposium on High Performance Distributed Computing, Portland, Oregon, 1998.

Lunden, M., J. Fine, B. Singer, N.J. Brown, P. Roth and S. Reynolds. Issues Concerned with Modeling Visibility. Paper for presentation at the GRI Air Toxics Conference, San Antonio, TX, May 1999. LBNL Report No. 43562.

Lunden, M.M., T.L. Thatcher, D. Littlejohn, M.L. Fischer, T.W. Kirchstetter, K.L. Revzan, R.G. Sextro, N.J. Brown, M.R. Stolzenburg and S.V. Hering. Time-Resolved Determination of Indoor-Outdoor Concentration Relationships for PM_{2.5} Nitrate, Sulfate and Carbon. Proceedings of the Sixth International Aerosol Conference, 2002. LBNL Report No. 50161.

Fischer, M.L., M.M. Lunden, T.L. Thatcher, R.G. Sextro and N.J. Brown, "Predicting Indoor PM_{2.5} of Outdoor Origin: Testing a Transient Size-Resolved Model Using Intensive Measurements from a Residence" Proceedings of the 9th International Conference on Indoor Air Quality and Climate (Indoor Air 2002). LBNL Report No. 49615.

Hering, S.V., M.M. Lunden, T.W. Kirchstetter, T.L. Thatcher, K.L. Revzan, R.G. Sextro, N.J. Brown, J. Watson and J. Chow. Indoor, Outdoor and Regional Profiles of PM_{2.5} Sulfate, Nitrate and Carbon. Proceedings of the 9th International Conference on Indoor Air Quality and Climate (Indoor Air 2002). LBNL Report No. 49980.

Lunden, M.M., T.L. Thatcher, D. Littlejohn, M.L. Fischer, S.V. Hering, R.G. Sextro, and N.J. Brown. The Transformation of Outdoor Ammonium Nitrate Aerosols in the Indoor Environment. Proceedings of the 9th International Conference on Indoor Air Quality and Climate (Indoor Air 2002). LBNL Report No. 50158.

CONFERENCE PAPERS (cont.)

Thatcher, T.L., M.M. Lunden, R.G. Sextro, S. Hering and N.J. Brown. The Effect of Penetration Factor, Deposition, and Environmental Factors on the Indoor Concentration of PM_{2.5} Sulfate, Nitrate, and Carbon. Proceedings of the 9th International Conference on Indoor Air Quality and Climate (Indoor Air 2002). LBNL Report No. 50160.

Singer, B.C., A.T. Hodgson, T. Hotchi, K.Y. Ming, R.G. Sextro, E.E. Wood and N.J. Brown. Sorption of organic gases in residential bedrooms and bathrooms (LBNL-56787). Proceedings of Indoor Air 2005, The 10th International Conference on Indoor Air Quality and Climate, Beijing, China, International Academy of Indoor Air Sciences, 2005.

Jin, L.; Brown, N. J.; Tonse, S.; Harley, R.A.; Bao; Michelson, S.A.; Wilzak, J. "Diagnostic and Mechanistic Evaluation of MM5-CMAQV4.6 for the Summer 2000 Central California Ozone Study." Presented at the 6th Annual CMAS Conference, Chapel Hill, NC, October 2007.

TECHNICAL REPORTS

Koszykowski, M.L., R.E. Armstrong, R.E. Cline Jr., J.F. Macfarlane, J.Y. Chen and N.J. Brown. ACME-the Advanced Combustion Modeling Environment. Computing at the Leading Edge: Research in the Energy Sciences, UCRL-TB-111084, U.S. Government Printing Office 1993-785-007; pp 61-69, 1993.

Sawyer, R.F., N.J. Brown, R.D. Matthews., M.C. Branch and S.M. Banna. The Formation of Nitrogen Oxides from Fuel Nitrogen. Electric Power Research Institute Report No. EPRI-223-1, National Technical Information Service Report No. PB-252-462/7WP, 1976.

Brown, N.J., R.F. Sawyer and T.S. Eitzen. Characterization Studies of the Selective Reduction of NO by NH₃. Final Contract Report to the State of California Air Resources Board, 1979. LBL Report No. 10254.

Brown, N.J., R.F. Sawyer and D. Lucas. Characterization of the Selective Reduction of NO by NH₃. Report submitted to the State of California Air Resources Board. 1981. LBL Report No. 12549.

Hodgson, A.T., M.J. Pollard, G.J. Harris, D.C. Girvin, J.P. Fox and N.J. Brown. Mercury Mass Distribution During Laboratory and Simulated In-Situ Oil Shale Retorting. 1982. LBL Report No. 12908.

Lucas, D., D. Dunn-Ranking, K. Hom and N.J. Brown. Photochemical Ignition of O₃/O₂/CH₄ Mixtures. 1985. LBL Report No. 19862.

Brown, N.J. Statistical and Dynamical Calculations of the H₂+OH --> H₂O Rate Coefficient. 1992. LBL Report No. 31388.

Quinby-Hunt, M.S. and N.J. Brown. Lawrence Berkeley Laboratory Interests, Approaches, and Capabilities in Ecological Research on the Consequences of Climate and Atmospheric Change. 1994. LBL-ID-2064.

TECHNICAL REPORTS (cont.)

Lunden, M., J. Fine, B. Singer, N. Brown, S. Reynolds and P. Roth. An Assessment of the Air Quality Modeling Efforts in Southwest Wyoming. Draft Interim Report prepared for Office of Product-Line, DOE, June 1999. LBNL Report No. 44544.

Lunden, M., J. Fine, B. Singer, N. Brown, S. Reynolds, P. Roth, C. Reuter and J. Haskell. Summary of Assessment of the Air Quality Modeling Efforts in Southwest Wyoming. Final Report prepared for Office of Natural Gas and Petroleum Technology, DOE and Gas Research Institute, Nov. 1999. LBNL Report No. 45458.

Vuilleumier, L., N.J. Brown, R.A. Harley and S.D. Reynolds. Review and Improvement of Methods for Estimating Rates of Photolysis in Photochemical Models. Vol. I. Final Report prepared for California Air Resources Board and the California Environmental Protection Agency, Dec. 2000. LBNL Report No. 45869.

Vuilleumier, L., N.J. Brown, R.A. Harley and S.D. Reynolds. Review and Improvements of Methods for Estimating Rates of Photolysis in Photochemical Models. Vol. II: User's Guide for TUVAQM Radiative Transfer and Photolysis Module. Final Report prepared for California Air Resources Board and the California Environmental Protection Agency, Dec. 2000. LBNL Report No. 45929.

Singer, B.C., K.L. Revzan, A.T. Hodgson and N.J. Brown. A Predictive Model for Determining Indoor Concentrations of Outdoor Volatile Organic Compound Air Toxics. Interim project report submitted to U.S. Department of Energy National Petroleum Technology Office, Tulsa, OK, Sept. 2002. LBNL Report No. 52313.

Lunden, M., D. Black and N. Brown. "Characterizing the Formation of Secondary Organic Aerosols" Interim Report submitted to DOE, Feb. 2004. LBNL Report No. 54446.

Kirchstetter, T.W., C.M. Maser and N.J. Brown. Ammonia Emission Inventory for the State of Wyoming. Final report prepared for Bureau of Land Management, Department of Interior, 2004. LBNL Report No. 54219.

Brown, N.J., S.R. Tonse and R.A. Harley. A Seasonal Perspective on Regional Air quality in Central California – Modeling Protocol. Final Report prepared for San Joaquin Valleywide Air Pollution Study Agency, California Air Resources Board, California Energy Commission and The U.S. Dept. of Energy, Aug. 2006. LBNL Report No. 62438.

Harley, R.A., N.J. Brown, S.R. Tonse and L. Jin. A Seasonal Perspective on Regional Air Quality in Central California – Phase 1. Final Report prepared for San Joaquin Valleywide Air Pollution Study Agency and the California Air Resources Board, Dec. 2006. LBNL Report No. 62438(1).

Parallel Efficiency Analysis and Performance Improvement of CMAQ V4.5 on a Beowulf Linux Cluster. Shaheen R. Tonse and Nancy J. Brown, Lawrence Berkeley National Laboratory. Report prepared for California Energy Commission. LBNL Report No. 62896.

RECENT ABSTRACTS

Brown, N.J. and J. Garay. Production of N₂O from the Reduction of NO_x by HNCO. Extended Abstract for 5th International N₂O Workshop, Tsukuba, Japan, 1992.

Gentile, A.C., D.A. Evensky, J.L. Durant, N.J. Brown and M.J. Koszykowski. Rate Coefficient Evaluation using Real Time Path Integration. Abstract and presentation to the 3rd International Conference on Chemically Reactive Systems, Heidleberg, Germany, July 1996.

Gentile, A.C., D.A. Evensky, J.L. Durant, N.J. Brown and M.L. Koszykowski. Rate Coefficient Evaluation using Real Time Path Integration. Abstract and Poster Session, 26th International Symposium on Combustion, Naples, Italy, July 1996.

Vuilleumier, L. and N.J. Brown. Second-Order Sensitivity Analysis as a Tool for Building Chemical Mechanisms. Abstract and Poster Session, The Twenty-Seventh International Symposium on Combustion, August 1998.

Hewson, J.C., M. Frenklach and N.J. Brown. Detailed Kinetic Modeling of Polycyclic Aromatic Hydrocarbons in Ethene Diffusion Flames. Abstract and Poster Session, The Twenty-Seventh International Symposium on Combustion, August 1998.

Moriarty, N.W., N.J. Brown and M. Frenklach. AB Initio Studies of Hydrogen Migration in Aromatic Hydrocarbons. Abstract and Poster Session, The Twenty-Seventh International Symposium on Combustion, August 1998.

Tonse, S.R., N.W. Moriarty, N.J. Brown and M. Frenklach. Simulation of Reactive Flow with Detailed Chemical Kinetics, Using a Dynamic Lookup Table in Chemical-Composition Space. Abstract and Poster Session. The Twenty-Seventh International Symposium on Combustion, August 1998.

Moriarty, N.W., M. Frenklach, and N.J. Brown. Hydrogen Transfer Channel of Acetylene Addition to Phenyl. Abstract and Poster Session, American Chemical Society Annual Meeting, Dallas, Texas, March 1998.

Moriarty, N.W., N.J. Brown and M. Frenklach. Hydrogen Migration in the Ethenyl-Benzene Radical. Extended abstract for the First Joint Meeting of the US Sections of the Combustion Institute March 1999. LBNL Report No. 43838.

Tonse, S.R., N.W. Moriarty, N.J. Brown, and M. Frenklach. PRISM: Piecewise Reusable Implementation of Solution Mapping. An Economical Strategy for Chemical Kinetics. Extended abstract for the First Joint Meeting of the US Sections of the Combustion Institute. March 1999. LBNL Report No. 43787.

Bell, J.B., N.J. Brown, M.S. Day, M. Frenklach, J.F. Grcar and S.R. Tonse. Suitability of Reduced Mechanism for Turbulent Combustion. Abstract and presentation at 28th Intl Symposium on Combustion, Edinburgh, Scotland, July-Aug. 2000.

Thatcher, T., M. Lunden, M. Fischer, J. Fine, T. Kirchstetter, S. Hering, R. Sextro and N. Brown. A concentration rebound method for measuring particle penetration into a residence. Abstract and presentation at the American Association for Aerosol Research Conference, St. Louis, MO, Nov. 2000.

RECENT ABSTRACTS (cont.)

Lunden, M., M. Fischer, J. Fine, T. Thatcher, T. Kirchstetter, S. Hering, R. Sextro and N. Brown. A Predictive Model of Indoor Concentrations of Outdoor PM-2.5 in Homes. Abstract and presentation at the American Association for Aerosol Research Conference, St. Louis, MO, Nov. 2000.

Tonse, S.R. and N.J. Brown. Emulation of chemical kinetic ODE system by 22-dimensional response surfaces in CH₄ combustion. Abstract and presentation at the Annual Meeting of the Division of Fluid Dynamics, American Physical Society, Washington, DC, Nov. 2000.

Vuilleumier, L., J.T. Bamer, S.D. Reynolds, R.A. Harley and N.J. Brown. Measurements and Modeling of Solar Ultraviolet Radiation and Photolysis Rates during SCOS97-NARSTO. Abstract for the SCOS97-NARSTO Data Analysis Conference, South Coast Air Quality Management District, Diamond Bar, CA, Feb. 13-15, 2001.

Vuilleumier, L. and N.J. Brown. The Green's Function Method for First- and Second-Order Sensitivity. Abstract and presentation for the Sixth SIAM Conference on Mathematical and Computational Issues in the Geosciences, Boulder, CO, June 11-14, 2001.

Black, D., M. Lunden, N. Brown, A. Goldstein and G. Schade. Biogenic Secondary Organic Aerosol Formation Above a Western Pine Forest. Abstract and presentation at the American Association for Aerosol Research Conference, Portland, OR, Oct. 2001.

Fischer, M., D. Littlejohn, M. Lunden, T. Thatcher, L. Gundel, R. Dod, R. Sextro and N. Brown. An Instrument for Automated Simultaneous Measurements for Ammonia and Nitric Acid in Indoor and Outdoor Air. Abstract and presentation at the American Association for Aerosol Research Conference, Portland, OR, Oct. 2001.

Hering, S., M. Lunden, T. Kirchstetter, T. Thatcher, K. Revzan, R. Sextro, N. Brown and J. Chow. Indoor, Outdoor and Regional Profiles of PM_{2.5} Sulfate, Nitrate, and Carbon. Abstract and presentation at the American Association for Aerosol Research Conference, Portland, OR, Oct. 2001.

Lunden, M., T. Thatcher, D. Littlejohn, M. Fischer, S. Hering, R. Sextro and N. Brown. The Transformation of Outdoor Ammonium Nitrate Aerosols in the Indoor Environment. Abstract and presentation at the American Association for Aerosol Research Conference, Portland, OR, Oct. 2001.

Thatcher, T., M. Lunden, K. Revzan, R. Sextro and N. Brown. Experimental Investigation of the Effect of Changes in House Environment on the Indoor Concentration of Particles of Outdoor Origin within a Residence. Abstract and presentation at the American Association for Aerosol Research Conference, Portland, OR, Oct. 2001.

Vuilleumier, L., J.T. Bamer, R.A. Harley, N.J. and Brown. Aerosol Effects on Solar UV Radiation and Photolysis Rates during the 1997 Southern California Ozone Study. Abstract and presentation for the 20th Annual Conference of the American Association for Aerosol Research, Portland, OR, Oct. 2001.

Fischer, Marc. L., Melissa M. Lunden, Tracy L. Thatcher, David Littlejohn, Thomas W. Kirchstetter, Susanne V. Hering, Richard G. Sextro, and Nancy J. Brown. Building a Predictive Model of Indoor Concentrations of Outdoor PM-2.5 for a Residential Research House in Clovis, California. Abstract and presentation the annual meeting of the American Association for Aerosol Research, Charlotte, NC, Oct. 2002. LBNL Report No. 51001.

RECENT ABSTRACTS (cont.)

Lunden, Melissa M., Marc L. Fischer, Tracy L. Thatcher, David Littlejohn, Thomas W. Kirchstetter, Susanne V. Hering, Richard G. Sextro, and Nancy J. Brown. Investigations of the Sensitivity of a Predicted Model of Indoor Concentrations of Outdoor PM-2.5 to Changes in House Operation and Environmental Parameters. Abstract and presentation at the PM2003 Symposium, Pittsburgh, PA, March 2003. LBNL Report No. 53049.

Lunden, Melissa M., Tracy L. Thatcher, Marc L. Fischer, Tom W. Kirchstetter, Kenneth L. Revzan, Richard G. Sextro, Nancy J. Brown, Mark R. Stolzenburg, Susanne V. Hering. Indoor Concentrations of Outdoor PM-2.5 in Homes: Insights from Real-time Measurements. Abstract and presentation at the PM2003 Symposium, Pittsburgh, PA., March 2003. LBNL Report No. 53051.

Lunden, Melissa M., Douglas R. Black, Nancy J. Brown, Gunnar W. Schade, and Allen H. Goldstein. Fine Particle Formation and Processing in a California Pine Forest. Abstract and presentation at the Second Berkeley Atmospheric Science Symposium, U.C. Berkeley, Dec. 2002. LBNL Report No. 53052.

Lunden, Melissa M., Douglas R. Black, Nancy J. Brown, Gunnar W. Schade, and Allen H. Goldstein. Biogenic Secondary Organic Aerosol Formation above a Western Pine Forest. Abstract and presentation at the annual meeting of the American Association for Aerosol Research, Charlotte, N.C., Oct. 2002. LBNL Report No. 51000.

Lunden, M.M., D.R. Black, N.J. Brown, A. Lee, G.W. Schade, A.H. Goldstein. Relationships Among Biogenic Emissions, Anthropogenic Pollutants, and Aerosol formation in a California Pine Forest. Abstract and talk presentation September 1-4, 2004, 8th International Conference on Carbonaceous Particles in the Atmosphere. Vienna, Austria. LBNL Report No. 58475.

Tonse, S., T. Berhane, R. Bornstein, N.J. Brown and R. Van Buskirk. Air Quality Impacts of Distributed Electricity Generation. Abstract and poster given at Berkeley Atmospheric Sciences Center Symp., Oct 2004. LBNL Report No. 58478.

Brown, N. J., D. Liu, M.M. Lunden and S.R. Tonse. Visibility, Aerosol Concentrations, and Relative Humidity. Poster and abstract A51E-0832, American Geophysical Union Annual Meeting, San Francisco, December 2004.

Lunden, M.M., D.R. Black, N.J. Brown, A. Lee, G.W. Schade, M. McKay, A.H. Goldstein. Aerosol Growth Observed in a Sierra Nevada Pine Forest and its Relationship to Biogenic Volatile Organic Compounds and Anthropogenic Pollutants. Poster and abstract A41A-008, American Geophysical Union Annual Meeting, San Francisco, December 2004.

Lunden, M.M., D.R. Black, N.J. Brown, G. McMeeking, S. Kreidenweis, C. Carrico, T. Lee, J. Carillo, J. Collett, D. Day, J. Hand and M. Malm. The Influence of Forest Fires in the Western U.S. on Pollutant Concentrations in California During the Summer of 2002. Abstract American Association of Aerosol Research Annual Meeting, Atlanta Georgia, 2004.

Lunden, M.M., T. Kirchstetter, T. Thatcher, N. Brown and S. Hering. The Transport and Fate of Outdoor Carbonaceous Aerosols in the Indoor Environment. Abstract American Association of Aerosol Research Annual Meeting, Atlanta Georgia, 2004.

RECENT ABSTRACTS (cont.)

Tonse, S.R., M.S. Day and N.J. Brown. PRISM: Dynamical Dimensional Reduction Applied to CH₄ Flame Simulations. Abstract and poster IF4-03, 30th International Symposium on Combustion, July 2004, Chicago, Illinois. LBNL Report No. 58477. Brown, N. J., D. Liu, M.M. Lunden and S.R. Tonse. Visibility, Aerosol Concentrations, and Relative Humidity. Abstract and Poster A51E-0832, American Geophysical Union Annual Meeting, San Francisco, December 2004. LBNL Report No. 58486.

Brown, N.J. and K.L. Revzan. Transport Property Importance in Combustion Modeling. Abstract and poster IF2-16 and abstract book, 30th International Symposium on Combustion, July 2005, Chicago, Illinois. LBNL Report No. 58476

Lunden, Melissa M., Nancy J. Brown, DeLing Liu, and Shaheen Tonse. "Analysis of the Effects of Chemical Composition and Humidity on Visibility using Highly Time Resolved Aerosol Data." Abstract and poster presented at the American Geophysical Union Annual Fall Meeting, San Francisco, CA, December 2005. LBNL Report No. 60871.

Tonse, S.R., N.J. Brown, R.A. Harley, A. Steiner. "Process Analysis Study of Weekend-Weekday Differences of Ozone Calculated with the CMAQ Air Quality Model." Abstract and Presentation A34A-06, American Geophysical Union Annual Meeting, San Francisco, December 2005. LBNL Report No. 60832.

Jin, L., S. Tonse, N.J. Brown, A.L. Steiner, R. Harley, J.M. Wilczak, J. Bao and S.A. Michelson. A Seasonal Modeling Study of Air Quality in Central California. Poster A11B-0863, American Geophysical Union Annual Meeting, San Francisco, December 2005. LBNL Report No. 60858.

Jin, L., C. Agnoux, J.W. Bao, N.J. Brown, R. Harley, .X.L. Mao, S.A. Michelson, S. Tonse, and J. Wilczak. Diagnostic and Mechanistic Evaluations of MM5-CMAQ for the Summer 2000 Central California Ozone Study. Abstract and poster presented at the 2006 AGU Fall Meeting, San Francisco, CA, December 2006. LBNL Report No. 62435.

Brown, N., L. Jin, S. Tonse, and R. Harley. Ozone Sensitivity to Emissions and Changes of Limiting Reagents. Abstract and poster presented at the 2006 AGU Fall Meeting, San Francisco, CA, December 2006. LBNL Report No. 62436.

Mao, X., L. Jin, C. Agnoux, S. Tonse and N. Brown. Using MODIS Surface Albedo and TOMS Data for Improving the Description of Air Quality Model. Abstract and poster presented at the 2006 AGU Fall Meeting, San Francisco, CA, December 2006. LBNL Report No. 62437.