

About the Authors

Miron Ya. Amusia

The Hebrew University
Racah Institute of Physics
Jerusalem, Israel
amusia@vms.huji.ac.il



Chapter B.23

Dr. Miron Amusia is a Professor of Physics at the Hebrew University of Jerusalem, Israel, and Principal Scientist of the Ioffe Physical-Technical Institute, St-Petersburg, Russia. He is author and co-author of more than 400 referred papers and 9 books. His research is in many-body theory of atoms, nuclei, molecules, clusters, and condensed matter, but primarily in atomic physics. He is Fellow of American Physical Society and a member of several professional societies and editorial boards. He received the Humboldt research award and is a member of the Russian Academy of Natural Sciences.

Nils Andersen

University of Copenhagen
Niels Bohr Institute
Copenhagen, Denmark
noa@fys.ku.dk



Chapter D.46

Nils Andersen is Professor of Physics at the Niels Bohr Institute of the University of Copenhagen. His main activities include experimental and theoretical studies of atomic collisions involving optically prepared states. Recent research interests include cold and ultracold collisions.

Thomas Bartsch

Georgia Institute of Technology
School of Physics
Atlanta, GA, USA
bartsch@cns.physics.gatech.edu



Chapter B.15

Thomas Bartsch received his PhD from the University of Stuttgart, Germany, in 2002. He is currently a postdoctoral fellow at the Georgia Institute of Technology. His research is centred on applications of nonlinear dynamics to atomic and molecular physics.

Klaus Bartschat

Drake University
Department of Physics and Astronomy
Des Moines, IA, USA
klaus.bartschat@drake.edu

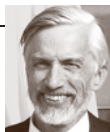


Chapter A.7

Dr. Bartschat is the Ellis & Nelle Levitt distinguished Professor of Physics at the Department of Physics and Astronomy at Drake University. His research in theoretical and computational atomic physics focuses on combining the general theory of measurement with highly accurate numerical calculations. He is a fellow of the American Physical Society and has published 2 books, 30 book chapters, 10 review articles, and more than 200 papers on electron and photon collisions with atoms and ions.

William E. Baylis

University of Windsor
Department of Physics
Windsor, ON, Canada
baylis@uwindsor.ca



Chapters 1, B.12

Professor Baylis earned degrees in physics from Duke (B.Sc.), the University of Illinois (M.Sc.), and the Technical University of Munich (D.Sc.). He has authored two books, edited or co-edited four more, contributed 28 chapters to other volumes, and published over a hundred journal articles. His publications are in theoretical physics and emphasize atomic and molecular structure, atomic collisions, and interactions with radiation. His most recent work concerns relativistic dynamics, the photon position operator and wave function, and applications of Clifford algebra, especially to the quantum - classical interface. He is a fellow of the American Physical Society, past chair of the Divisions of Atomic and Molecular Physics and of Theoretical Physics of the Canadian Association of Physicists, a member of the international editorial boards of the Springer Series of Atomic, Optical, and Plasma Physics and of the journal *Advances in Applied Clifford Algebras*. He is currently a University Professor at the University of Windsor.

**Anand K. Bhatia**

NASA Goddard Space Flight Center
Laboratory for Astronomy & Solar Physics
Greenbelt, MD, USA
anand.k.bhatia@nasa.gov

Chapter B.25

Dr. Bhatia received his Ph.D. in theoretical physics from the University of Maryland in 1963. Since then he has been at Goddard Space Flight Center. He has published a large number of papers in refereed journals on various topics in atomic and astrophysics: scattering of electrons and positrons from atoms, muonic fusion, polarizabilities of two-electron systems, Lamb shift, Rydberg states, excitation of ions etc. He is a Fellow of the American Physical Society.

**Hans Bichsel**

University of Washington
Center for Experimental Nuclear Physics
and Astrophysics (CENPA)
Seattle, WA, USA
bichsel@npl.washington.edu

Chapter G.91

Professor Hans Bichsel has worked on the interactions of fast charged particles with matter for over 50 years. Some of his measurements are the most accurate of their type. At present he is studying the methods of particle identification for the time projection chambers at STAR and ALICE. Earlier he worked in nuclear physics and developed neutron radiation therapy in Seattle.

John M. Brown

University of Oxford
Physical and Theoretical Chemistry
Laboratory
Oxford, England
john.m.brown@chem.ox.ac.uk



Chapter C.41

Professor Brown obtained his Ph.D. degree from the University of Cambridge in 1966. Before moving to Oxford in 1983, he was a Lecturer in the Department of Chemistry at Southampton University. He is a high-resolution, gas-phase spectroscopist with a special interest in free radical species. In addition to experimental studies at all wavelengths from microwave to the ultraviolet, he is interested in the development of theoretical models to describe the experimental results.

**Henry Buijs**

ABB Bomem Inc.
Québec, Canada
henry.l.buijs@ca.abb.com

Chapter C.40

Henry Buijs founded ABB Bomem Inc. in 1973 to bring to market state of the art Fourier Transform spectrometers. He received his Ph.D. from the University of British Columbia. He has interest in spectroscopic measurement in the atmosphere for Ozone chemistry, meteorological sounding and climate change assessment. ABB Bomem Inc. is leader in FT spectrometers for satellite based sensors and industrial process monitoring solutions.

**Philip Burke**

The Queen's University of Belfast
Department of Applied Mathematics and
Theoretical Physics
Belfast, Northern Ireland, UK
p.burke@qub.ac.uk

Chapter D.47

Phil Burke is Emeritus Professor of Mathematical Physics at the Queen's University of Belfast, having been Professor at Queen's from 1967 until 1998. His research interests are the theory of atomic, molecular, and optical physics and their applications. He was awarded the Guthrie Medal and Prize in 1994 and the David Bates Prize in 2000. He is a Fellow of the Royal Society.

Denise Caldwell

National Science Foundation
Physics Division
Arlington, VA, USA
dcaldwel@nsf.gov



Chapter E.61

Dr. Caldwell is the Program Director for the Atomic, Molecular, Optical, and Plasma Physics program at the National Science Foundation. She was awarded her Ph.D. by Columbia University in 1976. She then held a postdoc at the University of Bielefeld and a junior faculty position at Yale University. In 1985 she joined the faculty at the University of Central Florida, where she maintained a research program on atomic photoionization using synchrotron radiation. In 1998 she left full-time academia to become a permanent staff member of the NSF. She is a Fellow of the American Physical Society.

Mark M. Cassar

University of Windsor
Department of Physics
Windsor, ON, Canada
cassar@uwindsor.ca



Chapter B.13

Mark M. Cassar received his Ph.D. from the University of Windsor, Canada in 2003. His research focuses on high-precision theoretical calculations for the energy level structure of three-body atomic and molecular systems.

Kelly Chance

Harvard-Smithsonian Center for
Astrophysics
Cambridge, MA, USA
kchance@cfa.harvard.edu

Chapter G.85

Dr. Chance heads the Atomic and Molecular Physics Division of the Harvard-Smithsonian Center for Astrophysics. His current research applies molecular spectroscopy, structure and dynamics to studies of planetary atmospheres, with emphasis on satellite-based measurements of Earth's ozone layer composition and lower atmospheric pollution. Recent accomplishments include global measurements of tropospheric ozone, volatile organic compounds, and nitrogen oxides.

Raymond Y. Chiao

366 Leconte Hall
U.C. Berkeley
Berkeley, CA, USA
chiao@physics.berkeley.edu

Chapter F.80

Professor Chiao was awarded his Ph.D. by MIT in 1965. He has been Professor of Physics at Berkeley since 1977. His research interests are: Nonlinear and quantum optics; low temperature physics as applied to astrophysics; the relationship between general relativity and macroscopic quantum matter. He is writing a book with J. C. Garrison on Quantum Optics.

James S. Cohen

Los Alamos National Laboratory
Atomic and Optical Theory
Los Alamos, NM, USA
cohen@lanl.gov



Chapter G.90

Dr. Cohen is Group Leader of the Atomic and Optical Theory Group in the Theoretical Division of Los Alamos National Laboratory and a Fellow of the American Physical Society. He received a Ph.D. in Physics from Rice University in 1973. His general area of research is theoretical atomic and molecular physics, with special interest in exotic muonic and antiprotonic species.

Bernd Crasemann

University of Oregon
Department of Physics
Eugene, OR, USA
berndc@uoregon.edu

Chapter E.62

Bernd Crasemann is Professor Emeritus of Physics in the University of Oregon and Editor of Physical Review, Atomic, Molecular, and Optical Physics since 1993. He received his early education in Chile and a Ph.D. from the University of California at Berkeley. His work is in experimental and theoretical atomic inner-shell physics, particularly as explored with synchrotron radiation.

David R. Crosley

SRI International
Molecular Physics Laboratory
Menlo Park, CA, USA
david.crosley@sri.com

Chapter G.88

For most of his career, David R. Crosley has developed and used laser-induced fluorescence to study small free radicals. This research includes fundamental spectroscopic and energy transfer studies, as well as applications to combustion, atmospheric chemistry, and environmental monitoring. Notable among these are studies of OH, NH, and CH. He is a Fellow of the APS and AAAS.

Derrick Crothers

Queen's University Belfast
Department of Applied Mathematics and
Theoretical Physics
Belfast, Northern Ireland, UK
d.crothers@qub.ac.uk



Chapter D.52

Derrick Crothers is Professor of Theoretical Physics (Personal chair). He researches in atomic, molecular, optical, and condensed matter physics. Topics include heavy-particle collisions, threshold phenomena, dielectrics and ferromagnetics. He was awarded an Honorary Professorship in Physics by St Petersburg State University in 2003.

Lorenzo J. Curtis

University of Toledo
Department of Physics and Astronomy
Toledo, OH, USA
ljc@physics.utoledo.edu



Chapter B.17

Lorenzo J. Curtis is a Distinguished University Professor of Physics at the University of Toledo. He received his Ph.D. from the University of Michigan in 1963 and was awarded the degree Philosophiae Doctorem Honoris Causa by the University of Lund in 1999. His research involves time-resolved atomic spectroscopy and the structure of highly ionized atoms. He is the author of over 200 scientific articles and a textbook on atomic structure. He is an editor of *Physica Scripta* and a Member of the Editorial Board of *Physical Review A*.

Gordon W. F. Drake

University of Windsor
Department of Physics
Windsor, ON, Canada
gdrake@uwindsor.ca



Chapters 1, B.11

Dr. Gordon W.F. Drake is a Professor of Physics and Department Head at the University of Windsor, Canada. He received his Ph.D. degree from York University in Toronto. His research on high precision calculations and QED theory for helium and other few-body atomic systems has resulted in over 150 refereed journal articles, and numerous other review articles and book chapters. He is a Fellow of the American Physical Society and the Royal Society of Canada, and has been awarded numerous prizes and distinctions for his research. He is currently the Editor of the *Canadian Journal of Physics*, and an Associate Editor for *Physical Review A*, as well as Editor of the current volume, and Co-Editor-in-Chief of the Springer Series on Atomic, Optical, and Plasma Physics. He has served as President of the Canadian Association of Physicists, and as Chair of the Division of Atomic, Molecular, and Optical Physics of the American Physical Society.

Joseph H. Eberly

University of Rochester
Department of Physics and Astronomy
and Institute of Optics
Rochester, NY, USA
eberly@pas.rochester.edu



Chapter F.73

Joseph H. Eberly is Andrew Carnegie Professor of Physics and Professor of Optics at the University of Rochester. He earned his Ph.D. from Stanford University. He held the APS Chair of the Division of Laser Science from 1996–97 and was Divisional Councilor from 2003–2005. Eberly is OSA Vice President and its President in 2007. He is Foreign Member of the Academy of Science of Poland and received numerous awards such as the Charles Hard Townes Award in 1994, the Smoluchowski Medal in 1987, and the Humboldt Preis in 1984. He has published more than 300 research and review papers and several books in the areas of quantum optics, cavity QED and photon–atom interactions, evolution of coherence and quantum entanglement, high-field atomic physics, and nonlinear propagation of short optical pulses.

Guy T. Emery

Bowdoin College
Department of Physics
Brunswick, ME, USA
gemery@bowdoin.edu



Chapter B.16

Guy Emery was on the Brookhaven National Laboratory Staff, and taught physics at Indiana University and later Bowdoin College (Brunswick, ME). He was a visiting scientist at the Universities of Groningen and Osaka. His research has been in nuclear structure and reactions, the intersections of nuclear physics with atomic physics and particle physics, and in the history of physics.

Volker Engel

Universität Würzburg
Institut für Physikalische Chemie
Würzburg, Germany
voen@phys-chemie.uni-wuerzburg.de



Chapter C.35

Volker Engel studied Physics at the University of Göttingen and worked as a post-doctoral associate at the University of California, Santa Barbara. After his Habilitation in Physics (1993, University of Freiburg) he was appointed Professor in 1994 at the University of Würzburg. His research interests are in the time-dependent quantum theory of atomic and molecular dynamics in laser fields.

**James M. Farrar**

Chapter E.67

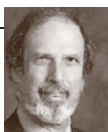
University of Rochester
Department of Chemistry
Rochester, NY, USA
farrar@chem.rochester.edu

James M. Farrar received his Ph.D. degree at the University of Chicago in 1974 working under the direction of Professor Yuan-Tseh Lee. Prior to joining the faculty at the University of Rochester, he was a postdoctoral fellow in the laboratory of Professor Bruce H. Mahan at the University of California at Berkeley. He has had a long-term interest in molecular beam studies of the dynamics of chemical reactions, and his current interests include low energy ion-molecule collisions and electronic spectroscopy of size-selected clusters ions. He is a Fellow of the American Physical Society.

Paul D. Feldman

Chapter G.83

The Johns Hopkins University
Department of Physics and Astronomy
Baltimore, MD, USA
pdf@pha.jhu.edu



Dr. Feldman is Professor of Physics and Astronomy at the Johns Hopkins University where he has been since 1967. He received his Ph.D. in physics from Columbia University in 1964. His recent work has been in space ultraviolet astronomy and spectroscopy with a focus on the study of the atmospheres of comets and planets and of the Earth's upper atmosphere.

**Victor Flambaum**

Chapter B.30

University of New South Wales
Department of Physics
Sydney, Australia
v.flambaum@unsw.edu.au

Dr. Victor Flambaum is a Professor of Physics and holds a Chair of Theoretical Physics. Ph.D., DSc. from the Institute of Nuclear Physics, Novosibirsk, Russia. He has about 200 publications in atomic, nuclear, particle, solid state, statistical physics, and astrophysics including works on violation of fundamental symmetries (parity, time reversal), test of unification theories, temporal and spatial variation of fundamental constants from Big Bang to present, many-body theory and high-precision atomic calculations, as well as statistical theory of finite chaotic Fermi systems and enhancement of weak interactions, high-temperature superconductivity, and conductance quantization.

David R. Flower

Chapter C.36

University of Durham
Department of Physics
Durham, United Kingdom
david.flower@durham.ac.uk



Professor Flower teaches at the University of Durham (UK). He was awarded his Ph.D. by the University of London in 1969. After working at the Observatoire de Paris (Meudon, France) and at the ETH (Zuerich, Switzerland), he joined the Physics Department of the University of Durham in 1978. He has been Professor of Physics since 1994. His research interests are in atomic and molecular physics related to astrophysics. He is currently preparing the second edition of his book on "Molecular Collisions in the Interstellar Medium".

A. Lewis Ford

Chapter D.50

Texas A&M University
Department of Physics
College Station, TX, USA
ford@physics.tamu.edu



Dr. Ford's research interests lie in theoretical atomic and molecular physics: inner-shell excitation, ionization, charge transfer, and electronic properties of diatomic molecules. Professor Ford joined the Texas A&M faculty in 1973. After receiving his B.A. degree from Rice University, he completed his Ph.D. at the University of Texas at Austin in 1972 and did post-doctoral work at Harvard. Professor Ford is a member of the American Physical Society, Division of Electron, Atomic, and Optical Physics.

**Jane L. Fox**

Wright State University
Department of Physics
Dayton, OH, USA
jane.fox@wright.edu

Chapter G.84

Jane Fox received her Ph.D. from Harvard University in Chemical Physics and has held positions at the State University of New York at Stony Brook, and the Harvard/Smithsonian Astrophysical Observatory. She has been elected a Fellow of the American Geophysical Union. Her research has focused on the chemistry, luminosity, heating of the thermospheres/ionospheres of the planets, and their evolution.

**Matthias Freyberger**

Universität Ulm
Abteilung für Quantenphysik
Ulm, Germany
matthias.freyberger@uni-ulm.de

Chapter F.78

Dr. Matthias Freyberger is extraordinary Professor at the Department of Quantum Physics at the University of Ulm, Germany. His research interests are in quantum optics, atom optics, quantum estimation theory, and the foundations of quantum mechanics.

**Thomas F. Gallagher**

University of Virginia
Department of Physics
Charlottesville, VA, USA
tfg@virginia.edu

Chapter B.14

Thomas F. Gallagher received his Ph.D. in physics in 1971 from Harvard University and is now the Jesse W. Beams Professor of Physics at the University of Virginia. His research is focused on the use of Rydberg atoms to realize novel physical systems.

Muriel Gargaud

Observatoire Aquitain des Sciences de
l'Univers
Florac, France
gargaud@obs.u-bordeaux1.fr



Chapter D.51

Muriel Gargaud is an astrophysicist at the "Observatoire Aquitain des Sciences de l'Univers" in Bordeaux, France. She studied for 20 years the physico-chemistry of the interstellar medium, her current research is now astrobiology. Astrobiology is an interdisciplinary research field (astronomy, geology, chemistry, biology) looking for the origins of life, its evolution and its development on Earth but also in and beyond the Solar System. She is the main scientific editor of "Lectures in Astrobiology" by Springer, Heidelberg 2005.

Alan Garscadden

Airforce Research Laboratory
Area B
Wright Patterson Air Force Base, OH,
USA
alan.garscadden@wpafb.af.mil



Chapter G.87

Alan Garscadden received his B.Sc. and Ph.D. from Queen's University, Belfast, Northern Ireland. He is the chief Scientist, Propulsion Directorate, Air Force Research Laboratory, Wright-Patterson AFB, Ohio and Edwards AFB, California. Alan also performs basic and applied research in non-equilibrium plasmas and energized gas flows, lasers, mass spectroscopy measurements, and electron collision cross sections. He is a Fellow of the APS, IEEE, AIAA and of the UK Institute of Physics.

**John Glass**

British Telecommunications
Solution Design
Belfast, Northern Ireland, UK
john.glass@bt.com

Chapter D.52

John Glass earned his Ph.D. on Relativistic Ion-Atom Collisions from The Queen's University of Belfast in 1995. His Ph.D. focussed on distorted wave approximations in electron capture, in particular, the first fully symmetrical CDW solution via the Sommerfeld-Maue approximation. Dr. Glass now works in large-scale Business Support Systems, Solutions Design for British Telecommunications plc.

S. Pedro Goldman

Chapter B.13



The University of Western Ontario
Department of Physics & Astronomy
London, ON, Canada
goldman@uwo.ca

Professor Pedro Goldman completed a Ph.D. in Relativistic Atomic Physics at the University of Windsor. His work in atomic physics includes pioneering work on relativistic variational basis sets, relativistic calculations for many-electron atoms and diatomic molecules, accurate calculations for atoms in strong magnetic fields and accurate calculations of QED energy corrections and of the energy levels of Helium. Presently his research is directed to the optimization of the radiation therapy of tumours. He has as well received numerous teaching awards.

Ian P. Grant

Chapter B.22

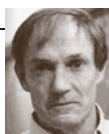
University of Oxford
Mathematical Institute
Oxford, UK
ipg@maths.ox.ac.uk



Ian Grant is Emeritus Professor of Mathematical Physics, University of Oxford and a Fellow of the Royal Society. He graduated from Oxford with a degree in Mathematics and obtained his D. Phil. in Theoretical Physics in 1954. His interest in relativistic electronic structure of atoms arose whilst he was working for the UK Atomic Energy Authority at Aldermaston from 1957 to 1964 and the field has been a major component of his research ever since. He returned to Oxford to a research post in 1964 and was a full-time member of academic staff from 1969 until his retirement in 1998. He is the author of more than 220 research papers, many of them on relativistic quantum theory applied to atomic and molecular structure and processes.

William G. Harter

Chapter C.32



University of Arkansas
Department of Physics
Fayetteville, AR, USA
wharter@uark.edu

Professor Harter's research centers on theory of spectroscopy and what it reveals about quantum phenomena and symmetry principles of structure and dynamics. Current study focuses on how wave mechanics of light relates to matter waves and their relativistic symmetry ranging from intrinsic frames of floppy molecules to manifold dynamics of astrophysical objects. A strong educational effort is being developed to make modern theory more accessible. He is a Fellow of American Physical Society (DAMOP).

Carsten Henkel

Chapter F.77

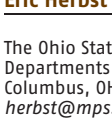


Universität Potsdam
Institut für Physik
Potsdam, Germany
carsten.henkel@quantum.physik.uni-potsdam.de

Carsten Henkel is Docteur en Sciences from the Université Paris-Sud Orsay. He habilitated in 2004 at Potsdam University where he is currently a Privatdozent. His research interests are in atom optics and nano optics. He is involved in several European projects on physical implementations of quantum information processing.

Eric Herbst

Chapter C.37



The Ohio State University
Departments of Physics
Columbus, OH, USA
herbst@mps.ohio-state.edu



Dr. Eric Herbst is Distinguished University Professor of Physics, Astronomy, and Chemistry at The Ohio State University. Herbst is a Fellow of both the American Physical Society and the Royal Society of Chemistry (UK). His specialty is the chemistry of molecules in interstellar clouds, which are large accumulations of gas and dust particles in our Galaxy and others in which star and planetary formation occur.

Robert N. Hill

Chapter A.9

Saint Paul, MN, USA
rnhill@fishnet.com



Professor Robert Nyden Hill received his Ph.D. from Yale University in 1962. In 1964, after postdoctoral fellowships at Princeton and Yale, he joined the faculty of the University of Delaware Physics Department. He retired in 1997, and moved to Saint Paul, Minnesota. He has published papers in relativistic dynamics, statistical mechanics, mathematical physics, and atomic and molecular physics.

**David L. Huestis**

SRI International
Molecular Physics Laboratory
Menlo Park, CA, USA
david.huestis@sri.com

Chapter C.33

David L. Huestis received his Ph.D. in Chemistry from the California Institute of Technology in 1973. He is a Fellow of the American Physical Society. His research activities include a wide range of experimental and theoretical investigations of fundamental kinetic and optical processes involving atoms, small molecules, liquids, and solids. Two major application areas have been chemical kinetics and optical physics of high-power visible and ultraviolet gas lasers and the optical emissions of terrestrial and planetary atmospheres.

**Mitio Inokuti**

Argonne National Laboratory
Physics Division
Argonne, IL, USA
inokuti@anl.gov

Chapter G.92

Dr. Mitio Inokuti earned his Ph.D. in Applied Physics from the University of Tokyo in 1962. From 1973–1995 he was Senior Physicist at Argonne National Laboratory. He is a Fellow of the American Physical Society and a member of the Radiation Research Society. Since 1985 he is a member of the International Commission on Radiation Units and Measurements, and since 1988 a member of the Editorial Board for *Advances in Atomic, Molecular, and Optical Physics*. He also is Associate Editor of the *Journal of Applied Physics*. His research interests focus on theoretical research in radiation physics and chemistry, and in atomic and molecular physics.

Juha Javanainen

University of Connecticut
Department of Physics Unit 3046
Storrs, CT, USA
jj@phys.uconn.edu



Chapters F.75, F.76

Juha Javanainen is Professor of Physics at the University of Connecticut. He has worked on a number of topics in theoretical quantum optics, and currently concentrates on quantum degenerate gases.

**Erik T. Jensen**

University of Northern British Columbia
Department of Physics
Prince George, BC, Canada
ejensen@unbc.ca

Chapter G.89

Erik Jensen is an Associate Professor of Physics at the University of Northern British Columbia (Canada). He obtained his Ph.D. in the Surface Physics Group at Cambridge University in 1990 and did post-Doctoral work with Prof. John Polanyi at the University of Toronto. His research interests are in low-energy electron and photon initiated dynamics for molecules at surfaces.

**Brian R. Judd**

The Johns Hopkins University
Department of Physics and Astronomy
Baltimore, MD, USA
juddbr@pha.jhu.edu

Chapters A.3, A.6

Brian Judd has had a life-long interest in applying group theory to the spectroscopic properties of the rare earths. He held appointments at Oxford, Chicago, Paris and Berkeley before joining the Physics Department of the Johns Hopkins University in 1966. He received the Spedding Award for Rare-Earth Research in 1988 and is an Honorary Fellow of Brasenose College, Oxford.

Alexander A. Kachanov

Research and Development
Picarro, Inc.
Sunnyvale, CA, USA
akachanov@picarro.com



Chapter C.43

Alexander Kachanov received the M.Sc. degree in physics from Moscow Institute of Physics and Technology in 1976, and the Ph.D. degree in physics from the Institute of Spectroscopy of the Russian Academy of Sciences in 1987. In 2001 he joined Picarro, Inc., where his research interests focus on ultra-sensitive gas detection and development of novel laser sources.

**Savely G. Karshenboim**

Chapter B.30

D.I. Mendeleev Institute for Metrology (VNIIM)
Quantum Metrology Department
St. Petersburg, Russia
sek@mpq.mpg.de

Dr. Savely G. Karshenboim was graduated in 1983 from St. Petersburg (then Leningrad) State University, Russia where he also received his Ph.D. in 1992 and habilitated in 1999. He has been a member of D.I. Mendeleev Institute for Metrology since 1983 and is at present a head of Laboratory for Precision Physics and Metrology of simple atomic systems. Since 1994 until now he has enjoyed numerous visiting opportunities at Max-Planck-Institut für Quantenoptik. He is a member of the CODATA task group on fundamental constants and SUNAMCO commission of IUPAP. SUNAMCO is a commission on Symbols, Units, Nomenclature, Atomic Masses and Fundamental Constants. Dr. Karshenboim's scientific interests include precision physics of simple atoms, quantum electrodynamics (QED), determination of fundamental constants and search for their variations.

**Kate P. Kirby**

Chapter G.85

Harvard-Smithsonian Center for Astrophysics
Cambridge, MA, USA
kkirby@cfa.harvard.edu

Kate Kirby has a Ph.D. in Chemical Physics from the University of Chicago, and is currently director of the Institute for Theoretical Atomic, Molecular, and Optical Physics. Her research interests center on theoretical studies of ultracold molecule formation and atomic and molecular structure and processes which are of interest to astronomy and atmospheric physics. Such processes include: photoionization, photodissociation, radiative association, charge transfer, and line-broadening.

Sir Peter L. Knight

Chapter F.81

Imperial College London
Department of Physics Blackett Laboratory
London, UK
p.knight@imperial.ac.uk



Sir Peter Knight is Head of Physics at Imperial College. He is Chief Scientific Advisor to the National Physical Laboratory and past President of the Optical Society of America. He is a Fellow of the Royal Society and was knighted in 2005. He researches in strong field physics and quantum information and edits the Journal of Modern optics and contemporary physics.

Manfred O. Krause

Chapter E.61

Oak Ridge National Laboratory
Oak Ridge, TN, USA
mok@ornl.gov



Dr. Krause was a Senior Scientist at the Oak Ridge National Laboratory working primarily in the field of photoelectron spectrometry of atoms with the use of synchrotron radiation. He received his Dr. rer. nat. in physics at the Technische Universität and the Max Planck Institut für Metallforschung in Stuttgart in 1954. He joined the Oak Ridge National Laboratory in 1963 and retired in 1995. He is a Fellow of the American Physical Society, and was a Professeur d'Echange at the University of Paris in 1975 and an Alexander von Humboldt awardee at the University of Freiburg in 1976.

**Paul G. Kwiat**

Chapter F.80

University of Illinois at Urbana-Champaign
Department of Physics
Urbana, IL, USA
kwiat@uiuc.edu

Paul G. Kwiat is the Bardeen Chair in Physics, at the University of Illinois, in Urbana-Champaign. A Fellow of the American Physical Society and the Optical Society of America, he studies the phenomena of entanglement, quantum interrogation, quantum erasure, and optical implementations of quantum information protocols. He can't resist a good swing dance.

**Maciej Lewenstein**

Chapter F.74

ICFO–Institut de Ciències Fotòniques
Barcelona, Spain
maciej.lewenstein@icfo.es

Born in Warsaw Poland, Dr. Maciej Lewenstein worked for many years in the Center for Theoretical Physics in Warsaw. He graduated from the University of Essen, worked for several years at CEA, and the University of Hannover. Currently he leads the theoretical quantum optics group at ICFO, Barcelona, Spain. His interests include physics of ultracold gases, quantum information, and the physics of matter in strong fields. He is a Fellow of APS.

**James D. Louck**

Chapter A.2

Los Alamos National Laboratory
Retired Laboratory Fellow
Los Alamos, NM, USA
jimlouck@aol.com

James Louck is a Los Alamos National Laboratory Retired Fellow. He earned his Ph.D. in molecular physics from The Ohio State University in 1958, and is the co-author of three books. Except for the years 1960 - 1963 at Auburn University, his career was in the Theoretical Division at Los Alamos developing symmetry methods for physical systems. His current research is in the inter-relations between symmetry and combinatorics.

Joseph H. Macek

Chapter D.53

University of Tennessee and Oak Ridge
National Laboratory
Department of Physics and Astronomy
Knoxville, TN, USA
jmacek@utk.edu



Dr. Joseph Macek is a Distinguished Professor at the University of Tennessee and a Distinguished Scientist at Oak Ridge National Laboratory. His current research concentrates on the theory of atomic collisions. He has been assigned Co-Chair of the local committee for the annual meeting of the Division of Atomic and Molecular Physics of the American Physical Society, Knoxville, TN 2006.

Mary L. Mandich

Chapter C.39

Lucent Technologies Inc.
Bell Laboratories
Murray Hill, NJ, USA
mandich@lucent.com



Mary Mandich is a Technical Manager and Distinguished Member of Technical Staff at Bell Laboratories and currently leads research in high speed backplanes and optical remoting for next generation telecommunication networks. She obtained her Ph.D. degree in Physical Chemistry at Columbia University. She holds 6 U.S. Patents and has authored 2 book chapters and more than 55 scientific publications in chemistry, physics, and materials science.

Steven T. Manson

Chapter D.53



Georgia State University
Department of Physics and Astronomy
Atlanta, GA, USA
smanson@gsu.edu

Professor Manson is on the faculty at Georgia State University. He received the Ph.D. from Columbia University in 1966, and did a two-year post-doc at the NBS (now NIST) working with Ugo Fano and John Cooper. He started as a faculty member at Georgia State University in 1968 and has been Regents Professor since 1984. His research has been primarily in the area of theoretical studies of ionization of atoms and ions by charged particles and photons. He is a Fellow of the American Physical Society.

William C. Martin

Chapter B.10

National Institute of Standards and
Technology
Atomic Physics Division
Gaithersburg, MD, USA
wmartin@nist.gov



Dr. Martin's research has included the measurement and energy-level analysis of atomic spectra. He has also published a number of critical compilations of atomic spectroscopic data, including a large volume for the rare-earth elements. In his current position as Scientist Emeritus at NIST, Dr. Martin is continuing work on internet-accessible atomic spectra databases.

Jim F. McCann

Chapter D.52

Queen's University Belfast
Dept. of Applied Mathematics and
Theoretical Physics
Belfast, Northern Ireland, UK
j.f.mccann@qub.ac.uk



Jim McCann was a Ph.D. student of Prof. Derrick Crothers at Queen's University, Belfast. He is currently a Reader in Theoretical Physics at Queen's and works in the field of Quantum Optics and Quantum Information Processing.

Ronald McCarroll

Chapter D.51



Université Pierre et Marie Curie
Laboratoire de Chimie Physique
Paris Cedex 05, France
mccarroll@ccr.jussieu.fr

Ronald McCarroll is a Professor of Physics at the Université Pierre et Marie Curie in Paris. He obtained his Ph.D. degree in Theoretical Physics at Queen's University, Belfast. After a post-doctoral fellowship at the National Physics Laboratory, Teddington and a Lectureship at Queen's University, Belfast he was appointed as a Directeur de Recherche au CNRS at the Observatoire de Paris, Meudon. Later, he moved to the Université de Bordeaux I as Professor in Astrophysics and finally to Paris as Professor in Physics at the Université Pierre et Marie Curie. He has worked in the field atomic and molecular photodynamics, particularly in view of their application to astrophysics and the physics of fusion plasmas. He is the author of more than 130 papers in refereed journals and contributed more than 20 specialised reviews to books and other specialised publications.

Fiona McCausland

Chapter D.52



Northern Ireland Civil Service
Department of Enterprise Trade and
Investment
Belfast, Northern Ireland, UK
fiona.mccausland@detini.gov.uk

Dr. Fiona McCausland gained her Ph.D. in Theoretical Physics in 1995 from the Queen's University of Belfast. Following a year spent as a Post Doctoral Research Assistant at the University, she joined the Northern Ireland Civil Service in September 1996. She currently holds the position of Project Manager in the Department of Enterprise, Trade and Investment.

William J. McConkey

Chapter E.63

University of Windsor
Department of Physics
Windsor, ON, Canada
mcconk@uwindsor.ca



Dr. Bill McConkey is a physicist with an extensive background in the measurement of absolute cross section data for the atomic, molecular, and optical physics community. His laboratory is recognised as a world leader in electron collisions research. He has been awarded the Gold Medal of the Canadian Association of Physicists (1999) and the Allis Prize of the American Physical Society (2004) for his work.

Robert P. McEachran

Chapter D.48

Australian National University
Atomic and Molecular Physics
Laboratories Research School of Physical
Sciences and Engineering
Canberra, Australia
robert.mceachran@anu.edu.au



Professor McEachran received his Ph.D. from the University of Western Ontario, Canada and then spent two years at the University College London (England) before joining York University in Toronto in 1964. In 1997 he accepted an Adjunct Professorship at the Australian National University. His current research interests are the theoretical treatment of electron/positron scattering from heavy atoms within a relativistic framework.

James H. McGuire

Chapter D.57



Tulane University
Department of Physics
New Orleans, LA, USA
m McGuire@tulane.edu

Dr. McGuire is Murchison Mallory Chair and department chair at Tulane University. He is a past Chair of the Division of Atomic, Molecular and Optical Physics (DAMOP) of the American Physical Society. His research interests are in electron correlation dynamics, entanglement, complexity and correlation, and quantum time.

**Dieter Meschede**

Rheinische
Friedrich-Wilhelms-Universität Bonn
Institut für Angewandte Physik
Bonn, Germany
meschede@iap.uni-bonn.de

Chapter F.79

Professor Dieter Meschede teaches at the Institute for Applied Physics in Bonn. After his studies in Hanover and Cologne and having been awarded his Dr. rer. nat in Munich in 1984, he first worked at Yale University. Then he became senior scientist at the MPI for Quantum Optics, Garching. He has been Professor of Physics since 1990, first in Hanover, since 1994 in Bonn. Professor Meschede is author of “Optics, Light, and Laser”, some 90 refereed articles, and, since 2001, editor of the “Gerthsen” textbook.

Pierre Meystre

University of Arizona
Department of Physics
Tucson, AZ, USA
meystre@physics.arizona



Chapter F.68

Pierre Meystre’s research ranges from laser theory to cavity QED and to the physics of quantum-degenerate atomic and molecular systems. With Murray Sargent, he coauthored the textbook “Elements of Quantum Optics,” and he recently published the monograph “Atom Optics”, both with Springer-erlag. He has been awarded the Senior Scientist Research Prize of the Humboldt Foundation and the R.W. Wood Prize of the Optical Society of America. He is currently a Regents Professor and the Head of the Physics Department at The University of Arizona.

Peter W. Milonni

Los Alamos, NM, USA
pwm@lanl.gov



Chapter F.70

Peter Milonni is a Laboratory Fellow (retired) at Los Alamos National Laboratory. His main interests are in theoretical physics, especially quantum optics and electrodynamics. He is an author of several books including Lasers (with J. H. Eberly), The Quantum Vacuum, and Fast Light, Slow Light, and Left-Handed Light. Previously he held positions with the U. S. Air Force, the Perkin-Elmer Corporation, and the University of Arkansas.

**Peter J. Mohr**

National Institute of Standards and
Technology
Atomic Physics Division
Gaithersburg, MD, USA
mohr@nist.gov

Chapter B.28

Dr. Peter Mohr received his Ph.D. from the University of California at Berkeley in 1973 and spent some years at the Lawrence Berkeley Laboratory (1973–1978), at Yale University (1978–1985), at the National Science Foundation (1985–1987), and at the National Bureau of Standards/ National Institute of Standards and Technology from 1987 until now. He is a Fellow of the American Physical Society, and received the Alexander von Humboldt Senior Research Award in 1995. He held the Chair of the CODATA Task Group on Fundamental Constants from 1999 to 2006 and was Chair of the Precision Measurement and Fundamental Constants Topical Group of the American Physical Society from 2000–2001.

John D. Morgan III

University of Delaware
Department of Physics and Astronomy
Newark, DE, USA
jdmorgan@udel.edu



Chapters B.20, G.90

Dr. Morgan is Associate Professor and obtained his B.S. from The George Washington University, his M.Sc. in Theoretical Chemistry from Oxford University, and his Ph.D. in Chemistry from Berkeley. He has served on the editorial boards of the Journal of Mathematical Physics and the International Journal of Quantum Chemistry. His wide-ranging interests include the application of sophisticated mathematical techniques to assist the accurate calculation of properties of atoms and molecules.

Michael S. Murillo

Los Alamos National Laboratory
Theoretical Division
Los Alamos, NM, USA
murillo@lanl.gov



Chapter G.86

Dr. Murillo received his Ph.D. in theoretical atomic and plasma physics from Rice University. He then received a Director's Postdoctoral Fellowship at Los Alamos, where he has remained since. His current research interests lie in the areas of dense and strongly coupled plasmas, including laser-produced plasmas, dusty plasmas, astrophysical plasmas, and ultracold plasmas. He applies both analytical and molecular dynamics methods to these systems.

Evgueni E. Nikitin

Technion-Israel Institute of Technology
Department of Chemistry
Haifa, Israel
nikitin@technix.technion.ac.il



Chapter D.49

Professor, Nikitin Evgueni is a researcher, head of the research group, and Professor of Chemical Physics at the Institute of Chemical Physics, Moscow, since 1958. He is also Professor of Physical Chemistry, Technion, Haifa, since 1991. He is a member of the Deutsche Akademie der Naturforscher Leopoldina, the European Academy of Arts, Sciences and Humanities, and the International Academy of Quantum Molecular Sciences. His research concentrates on the theory of inelastic and reactive scattering, theory of nonadiabatic processes, statistical theory of chemical reactions, and atom-molecule processes at low energies. He authored 15 books and about 300 papers. Research awards: Alexander von Humboldt Award, Gauss Professorship, and Barecha Fellowship

Robert F. O'Connell

Louisiana State University
Department of Physics and Astronomy
Baton Rouge, LA, USA
roconnell@phys.lsu.edu



Chapter F.78

Professor O'Connell earned his Ph.D. in 1962 from the University of Notre Dame, Indiana. For many years, in collaboration with G. W. Ford, he has been studying dissipative and fluctuation phenomena in quantum mechanics and related applications. In addition, he is using the generalized quantum Langevin equation to explore recent topical questions in non-equilibrium statistical mechanics (particularly claims that the fundamental laws of thermodynamics may be violated in the quantum regime).

Francesca O'Rourke

Queen's University Belfast
Department of Applied Mathematics and
Theoretical Physics
Belfast, UK
s.orourke@qub.ac.uk



Chapter D.52

Dr. O'Rourke obtained her Ph.D. in Ion-Atom Collisions from Queens University, Belfast, in 1991. She now lectures in Applied Mathematics and Theoretical Physics at Queens University, Belfast. Her current research interests include heavy particle collisions in atomic and molecular physics and more recently mathematical modelling in Biomedicine.

Ronald E. Olson

University of Missouri-Rolla
Physics Department
Rolla, MO, USA
olson@umr.edu



Chapter D.58

Ronald E. Olson, Curators' Professor of Physics earned his Ph.D. from Purdue University in 1967. He is a Fellow of the American Physics Society and a Fulbright Fellow to France. He was received the Humboldt Senior Prize Award, the University of Missouri system-wide Presidential Award for Research and Creativity. His research interests concentrate on theory of elastic and inelastic total and differential scattering cross sections: atom-atom, ion-atom, and ion-ion. Studies of multiply charged ion-atom collisions, Rydberg atom collisions, negative ion detachment mechanisms, and Penning and associative ionization.

**Barbara A. Paldus**

Chapter C.43

Skymoon Ventures
Palo Alto, CA, USA
bpaldus@skymoonventures.com

Dr. Barbara Paldus received her Ph.D. in electrical engineering from Stanford University. She is a partner at Skymoon Ventures, where she works with early stage photonics companies. Previously, she was CTO at Picarro, which she founded in 1998. She has received numerous research awards, most recently the Adolph Lomb Prize (2001) by the OSA for her work in cavity ring-down spectroscopy.

**Josef Paldus**

Chapters A.4, A.5

University of Waterloo
Department of Applied Mathematics
Waterloo, ON, Canada
paldus@scienide.uwaterloo.ca

Josef Paldus, FRSC, is a Distinguished Professor Emeritus in the Department of Applied Mathematics, Department of Chemistry, and Guelph-Waterloo Center for Graduate Work in Chemistry – Waterloo Campus, at the University of Waterloo, Waterloo, ON Canada. He is also an Adjunct Professor in the Department of Chemistry of the University of Florida in Gainesville, FL, USA. He received his Ph.D. degree from the Czechoslovak Academy of Sciences and his RNDr. and Dr.Sc. degrees from the Faculty of Mathematics and Physics of the Charles University in Prague, Czech Republic. His research interests are in the methodology of quantum chemistry, the many-electron correlation problem, and the electronic structure of molecular systems in general. On these topics he published about 300 papers, reviews, and monograph chapters. He is a member of several professional societies and editorial boards, and received various awards and international fellowships, notably a Killam Fellowship, Institute for Advanced Study in Berlin Fellowship, Alexander von Humboldt Senior Scientist Award, and most recently a Gold Medal of the Charles University. He is also a Fellow of the Royal Society of Canada and of the Fields Institute for Research in Mathematical Sciences.

Ruth T. Pedlow

Chapter D.52

Queen's University Belfast
Department of Applied Mathematics
and Theoretical Physics
Belfast, UK
r.pedlow@qub.ac.uk



Ruth Pedlow is working towards completion of her Ph.D. in heavy particle collisions in atomic and molecular physics at Queens University of Belfast.

**David J. Pegg**

Chapter E.60

University of Tennessee
Department of Physics
Knoxville, TN, USA
djpegg@utk.edu

Currently I am investigating the structure and dynamics of atomic and molecular negative ions by studying how they interact with photons and electrons. The threshold behaviour and resonance structure in detachment cross sections are used to measure correlation-sensitive parameters. Experiments on photo detachment involve the use of lasers or synchrotron radiation. Such measurements, for example, lead to information on the process of multiple electron detachment induced by the absorption of a single photon. Electron-impact detachment and dissociation processes are studied using a magnetic storage ring. These studies, for example, yield information on the production and decay of doubly negative charged molecular and cluster negative ions.

**Ekkehard Peik**

Chapter B.30

Physikalisch-Technische Bundesanstalt
Braunschweig, Germany
ekkehard.peik@ptb.de

Dr. Ekkehard Peik received his doctorate and the habilitation in physics at the University of Munich. His research interests are in the fields of laser-cooling and trapping of atoms and ions, precision laser spectroscopy and the application to optical time and frequency metrology and tests of fundamental physics. He is now head of the group 'Optical Clocks' at PTB and also a lecturer at the University of Hannover.

Ronald Phaneuf

University of Nevada
Department of Physics
Reno, NV, USA
phaneuf@unr.edu



Chapter E.64

Professor Phaneuf received a Ph.D. in atomic physics from the University of Windsor in 1973 and has since been engaged in experimental research on interactions of ions with electrons, atoms, molecules and photons using merged-beams and crossed-beams techniques. He was formerly at JILA and Oak Ridge National Laboratory. His current research emphasis is photon-ion interactions using synchrotron radiation.

Eric H. Pinnington

University of Alberta
Department of Physics
Edmonton, AB, Canada
pinning@phys.ualberta.ca



Chapter B.18

Eric Pinnington obtained his Ph.D. in Physics at Imperial College in 1962. Prior to joining the University of Alberta in 1965, he held an NRC postdoctoral fellowship at McMaster University in Hamilton, Ontario, and an Alexander von Humboldt Fellowship at the Max Planck Institute for Astrophysics in Munich. He was elected Fellow of the American Physical Society in 1995. He became Professor Emeritus of Physics in 1997.

Richard C. Powell

University of Arizona
Optical Sciences Center
Tucson, AZ, USA
rcpowell@email.arizona.edu



Chapter F.71

Powell was educated in physics at the United States Naval Academy and Arizona State University. He has been a research scientist and professor at Air Force Cambridge Research Laboratories, Sandia National Laboratory, and Lawrence Livermore National Laboratory, Oklahoma State University and the University of Arizona. He has authored two textbooks and over 260 scientific papers in laser spectroscopy and solid-state laser development. Powell is an elected Fellow of both the American Physical Society and the Optical Society of America and has served a President of OSA. He has been elected to the Russian Academy of Engineering Science.

John F. Reading

Texas A&M University
Department of Physics
College Station, TX, USA
reading@physics.tamu.edu



Chapter D.50

Professor Reading earned his Ph.D. from the University of Birmingham, UK, in 1964. His current research interests are in theoretical calculations of cross sections for excitation and ionization following fast ion-atom collisions, the role of Pauli correlation in inner-shell vacancy production, and the role of dynamic electronic correlation. The latter especially in comparison of proton and anti-proton-induced single and double ionization of helium. He was named The Distinguished Texas Scientist of 1995 by the Texas Academy of Sciences and is Editor of the proceedings of several conferences on ion-atom collisions.

Jonathan R. Sapirstein

University of Notre Dame
Department of Physics
Notre Dame, IN, USA
jsapirst@nd.edu



Chapters B.27, B.29

Dr. Sapirstein earned his Ph.D. from Stanford University in 1979. He did postdoctoral work at UCLA and Cornell, and is at the University of Notre Dame, Indiana, since 1984. Current research interest in parity non-conservation in atoms, QED effects in highly charged many-electron ions, QED calculations in hydrogen, positronium, muonium, and helium. Dr. Sapirstein is a Fellow of the American Physical Society.

Stefan Scheel

Imperial College London
Blackett Laboratory
London, UK
s.scheel@imperial.ac.uk



Chapter F.81

Stefan Scheel received his Ph.D. (Dr. rer. nat.) from the Friedrich-Schiller-University Jena in 2001. He is an EPSRC Advanced Research Fellow in the Quantum Optics and Laser Science group in the Department of Physics at Imperial College London. His main research areas include QED in dielectric materials, quantum information processing using linear optics, and decoherence processes in atom chip experiments.

**Axel Schenzle**

Ludwig-Maximilians-Universität
Department für Physik
München, Germany
axel.schenzle@physik.uni-muenchen.de

Chapter F.79

Professor Schenzle has been working on various aspects of Theoretical Quantum Optics, the description of classical and quantummechanical noise in microscopic and mesoscopic systems, Bose–Einstein-Condensation, Quantum Information Theory, quantum computing and decoherence. He has been Deputy Rector of the University of Munich and Dean for many years.

Reinhard Schinke

Max-Planck-Institut für Dynamik &
Selbstorganisation
Göttingen, Germany
rschink@gwdg.de



Chapter C.34

Dr. Reinhard Schinke received his Ph.D. from the Physics department of the University of Kaiserslautern in 1976. His main area of research is molecular dynamics, in particular energy transfer in atomic collisions, chemical reactions, and photodissociation. He is author of the book Photodissociation Dynamics. In recent years his interest shifted to dynamical investigations of recombination processes with particular emphasis on the ozone isotope effect.

Wolfgang P. Schleich

Universität Ulm
Abteilung für Quantenphysik
Ulm, Germany
wolfgang.schleich@uni-ulm.de



Chapter F.78

Prof. Schleich studied physics and mathematics at the Ludwig-Maximilians-Universität München where he obtained his Diplom, Doktor, and Habilitation. He worked at the University of New Mexico (Albuquerque) and University of Texas (Austin) and the Max-Planck Institut für Quantenoptik in Garching. Since 1991 he has held a chair of theoretical physics at the Universität Ulm. He has more than 200 publications, is a Fellow of APS, IOP and OSA and an elected member of the Heidelberger Akademie der Wissenschaften and the Leopoldina, and has received numerous awards including the Leibniz Prize and the Max-Planck Prize.

**Michael Schulz**

University of Missouri-Rolla
Physics Department
Rolla, MO, USA
schulz@umr.edu

Chapter E.65

Professor Dr. Michael Schulz received his Ph.D. in Physics from the University of Heidelberg in 1987 to become a Teaching Assistant from 1981–1987. After positions at Oak Ridge National Laboratory and Kansas State University he joined the University of Missouri-Rolla as Assistant Professor in 1990. Since 2002 he is Professor of Physics and since 2003 Director of the Laboratory for Atomic, Molecular, and Optical Research. His scientific concentrate on experimental atomic physics, dynamics of many-body problem, correlation effects, and three-dimensional imaging of atomic break-up processes. He is a Fellow of the American Physical Society and was Mercator Scholar 2004–2005.

Peter L. Smith

Harvard University
Harvard-Smithsonian Center for
Astrophysics
Cambridge, MA, USA
plsmith@cfa.harvard.edu



Chapter C.44

Peter L. Smith received his Ph.D. degree in Physics from Caltech in 1972 and, after a year of teaching, came to and stayed at the Harvard-Smithsonian Center for Astrophysics. He is involved in measurements of fundamental atomic and molecular parameters at ultraviolet wavelengths for analysis of astronomical spectra, and design and calibration of instruments for ultraviolet spectroscopic and/or radiometric measurements, especially of the Sun, from earth-orbiting satellites.

Anthony F. Starace

The University of Nebraska
Department of Physics and Astronomy
Lincoln, NE, USA
astarace1@unl.edu



Chapter B.24

Dr. Starace earned his Ph.D. from the University of Chicago in 1971 and is George Holmes University Professor of Physics at the University of Nebraska since 2001. His primary research interests concern the interaction of intense laser light with atoms, especially single and multiphoton detachment and ionization processes. He is a Fellow of the American Physical Society and the American Association for the Advancement of Science, and is currently an Associate Editor of *Reviews of Modern Physics*.

Glenn Stark

Wellesley College
Department of Physics
Wellesley, MA, USA
gstark@wellesley.edu

Chapter C.44

Professor Stark's research interest is in the field of experimental molecular spectroscopy. His laboratory programs emphasize molecular transitions of interest to the astrophysics and aeronomy communities, primarily involving the measurement and interpretation of high-resolution absorption spectra of vacuum ultraviolet and extreme ultraviolet transitions. Related activities include Fourier transform spectroscopy of diatomic molecules, and laser spectroscopies of diatomics.

Allan Stauffer

Department of Physics and Astronomy
York University
Toronto, ON, Canada
stauffer@yorku.ca

Chapter D.48

Allan Stauffer has published numerous papers in the field of electron and positron scattering from atoms and simple molecules. In collaboration with numerous colleagues, he has been involved with extensive scattering calculations and developed methods to carry out these investigations and has worked closely with groups involved in measuring these processes.

Aephraim M. Steinberg

University of Toronto
Department of Physics
Toronto, ON, Canada
steinberg@physics.utoronto.ca



Chapter F.80

Aephraim Steinberg works on experimental quantum optics and laser cooling, with specific emphasis on foundational questions in quantum mechanics (esp. quantum measurement) and on quantum information. His obsession is with tunneling times; in 1994, he demonstrated (with Kwiat and Chiao) the superluminal tunneling of photons, and in 2005, he is starting an experiment to probe tunneling times for Bose-condensed atoms through optical barriers.

Stig Stenholm

Royal Institute of Technology
Physics Department
Stockholm, Sweden
stenholm@atom.kth.se



Chapter F.69

Stig Stenholm was Professor of Laser Physics and Quantum Optics at the Royal Institute of Technology, Stockholm. He studied Technical Physics at the Helsinki Institute of Technology and Mathematics at the University of Helsinki. He worked at the Research Institute for Theoretical Physics in Helsinki until 1997, when moving to Stockholm. Theoretical research fields include spectroscopy, quantum optics, and informatics

Jack C. Straton

Portland State University
University Studies
Portland, OR, USA

Chapter D.57

Jack Straton earned a doctorate in quantum theory from the University of Oregon and served as both a volunteer and professional diversity trainer over the past 18 years. He is an Assistant Professor in Portland State University's interdisciplinary University Studies program, where his teaching blends science, art, diversity, and social responsibility. His research ranges from Quantum Scattering Theory to Anti-racist Pedagogy.

Carlos R. Stroud Jr.

University of Rochester
Institute of Optics
Rochester, NY, USA
stroud@optics.rochester.edu



Chapter F.73

Professor Stroud is Professor of Optics, Professor of Physics and Director of the Center for Quantum Information at the University of Rochester where he works in a variety of areas of experimental and theoretical quantum optics and atomic physics. His group pioneered the area of Rydberg electron wave packet physics observing localization, decays, revivals and interferometry with a single electron.

**Barry N. Taylor**

National Institute of Standards and
Technology
Atom Physics Division
Gaithersburg, MD, USA
barry.taylor@nist.gov

Chapter B.28

Barry N. Taylor received his Ph.D. in Physics from the University of Pennsylvania in 1963. He remained at Penn as a faculty member until he joined RCA Laboratories in Princeton, NJ in 1966. He joined the National Bureau of Standards (now NIST) in 1970 as a Section Chief in the Electricity Division, becoming its Chief in 1974. In 1988 he became manager of the NIST Fundamental Constants Data Center, retiring from NIST and that position in 2001. Since then he has been a NIST Scientist Emeritus in the Data Center. Dr. Taylor has authored or co-authored over 100 publications, is a fellow of the APS and IEEE, and has received a number of awards. His current research focuses on the evaluation of data related to the fundamental constants and improving the International System of Units (SI).

**Aaron Temkin**

NASA Goddard Space Flight Center
Laboratory for Solar and Space Physics
Greenbelt, MD, USA
aaron.temkin-1@nasa.gov

Chapter B.25

Dr. Temkin is a research physicist (emeritus) at NASA/GSFC. He has specialized (primarily) in scattering problems of electrons from atoms and molecules, and associated processes (autoionization, in particular). He received his Ph.D. degree from the Massachusetts Institute of Technology in 1956, and has been at his present institution since 1960.

Sandor Trajmar

California Institute of Technology
Jet Propulsion Laboratory
Redwood City, USA
strajmar@comcast.net



Chapter E.63

Dr. Sandor Trajmar received his Ph.D. in physical chemistry from the University of California at Berkeley, California. He was Head of the Electron collision Physics Group, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California. He retired in January 1997.

Elmar Träbert

Ruhr-Universität Bochum
Experimentalphysik III/NB3
Bochum, Germany
traebert@ep3.rub.de



Chapter B.18

Professor Elmar Träbert obtained his doctorate and professorial title at Ruhr-Universität Bochum. He has extensive experience in time-resolved spectroscopy and atomic lifetime measurements mainly from working with beam-foil spectroscopic techniques, a heavy-ion storage ring, as well as radio-frequency and electron beam ion traps in more than a dozen laboratories.

**Turgay Uzer**

Georgia Institute of Technology
School of Physics
Atlanta, GA, USA
turgay.uzer@physics.gatech.edu

Chapter B.15

Professor Turgay Uzer obtained his doctorate at Harvard and was a postdoctoral fellow at Caltech. Currently he is Regents' Professor in the School of Physics, Georgia Institute of Technology. His research interests include: Rydberg atoms and molecules, semiclassical theories, nonlinear dynamics/chaos, intramolecular energy transfer, and chemical reactivity.

**Karl Vogel**

Universität Ulm
Abteilung für Quantenphysik
Ulm, Germany
karl.vogel@uni-ulm.de

Chapter F.78

Dr. Vogel received his PhD from the Universität Ulm in 1989. His research area is theoretical quantum optics. In particular, he investigated how quantum states of the radiation field can be prepared and how they can be measured.

Jon C. Weisheit

Washington State University
Institute for Shock Physics
Pullman, WA, USA
weisheit@wsu.edu



Chapter G.86

Jon Weisheit recently joined Washington State University's Institute for Shock Physics, where he holds appointments as Research Professor and Associate Director, and conducts research focused on understanding quantum phenomena in high energy density matter. He is a Fellow of the American Physical Society, and is a frequent advisor in government agencies on issues pertaining both to basic science and to national defense programs. Her received his graduate degrees in space science and in physics from Rice University.

Wolfgang L. Wiese

National Institute of Standards and
Technology
Gaithersburg, MD, USA
wiese@nist.gov



Chapter B.10

Dr. Wolfgang Wiese is a physicist with extensive research background in atomic spectroscopy and in the critical tabulation of atomic reference data. He has worked at the National Institute of Standards and Technology for more than 40 years and has led the Atomic Physics Division from 1978 to 2004. He has authored 6 data volumes on Atomic Transition Probabilities, 15 book chapters and about 225 shorter research papers.

**Martin Wilkens**

Universität Potsdam
Institut für Physik
Potsdam, Germany
martin.wilkens@physik.uni-potsdam.de

Chapter F.77

Dr. Martin Wilkens received a Ph.D. in Physics from Essen University. He spent his post-doctoral years in Warsaw, Tucson, and Konstanz and has been appointed Professor for Theoretical Physics / Quantum Optics at Potsdam University in 1997. His current research areas are Bose-Einstein condensation, degenerate quantum gases, and quantum information processing and communication.



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