

Major Awards and Publications



Books, journal articles and reports, along with conference and workshop presentations, are the primary means by which research accomplishments are communicated. Their measure, together with patents and the award of special honours, medals and distinctions, are clear indicators of the achievements of the School during the year. Some highlights of the latter are mentioned at greater length in the Director's report. A complete list of major awards is presented below.

Over 170 papers were published in refereed journals this year, as detailed below. Also listed in this section are *invited* and/or *keynote* presentations, totalling 78 that were presented at domestic and international workshops and conferences. Details of other conference and workshop presentations may be found on the School web by department: <http://rsphysse@anu.edu.au>

The papers published by staff of the School are listed in this section according to the authors' affiliation. Many papers have authors from more than one department. These have been assigned according to the affiliation of the first RSPHYSSE author. In a few cases, this author has a joint appointment with two departments. In these cases, the paper appears in both lists, with the words "also listed under Theoretical Physics", for example, following the reference.

Honours and Awards



Dr Gustave Azevedo, EME, was awarded an Australian Research Council Postdoctoral Fellowship to commence in 2002.

Dr Rowena Ball, TP, was awarded an Australian Research Council Postdoctoral Fellowship. She also received a Travelling Fellowship to the UK awarded by the Australian Academy of Science.

Ms Annette Berriman, NP, received an award for the best Oral Presentation by a Postgraduate student at the 18th Nuclear and Particle Physics Conference in Adelaide from 10–15 December 2000. Ms Berriman was the winner of the Director's Award for the best publication by a student for her paper *Unexpected Inhibition of Fusion in Nucleus-Nucleus Collisions* published as a letter in *Nature* **413** (2001) 144–147.

Mr Scott Collis, PRL, was the winner of the Graduate Student Seminar Series "John Carver Prize" for his talk entitled *Density Studies in H-1NF at 1/2 Tesla*.

Dr Vince Craig, AM, was awarded an Australian Research Council Fellowship to commence in 2002.

Dr Anton Desyatnikov, DU, was awarded an Alexander von Humboldt Research Fellowship.

Professor Robert Elliman, EME, was elected a member of the International Advisory Board for the conference series entitled: "Atomic Collisions in Solids". He was also elected a member of the Governing Council of the Electronic Materials and Processing Division (EMPD) of the International Union of Vacuum Societies and Technical Associations (IUVSTA).

Professor Neville Fletcher, EME, was appointed an Associate Editor of the Journal of the Acoustical Society of America.

Mr Tom Halstead, EME, was presented with the School's 30-year pin for extended services to RSPHysSE.

Professor Jeffrey Harris, PRL, was elected as a Senior Member of the Institute of Electrical and Electronics Engineers (USA) and a Fellow of the Australian Institute of Physics

Professor C. Jagadish, EME, was appointed an Associate Editor of the Journal of Nanoscience and Nanotechnology, American Scientific Publishers. He was also elected to the Fellowship of the Institute of Nanotechnology (UK) and to the Fellowship of the Institute of Electrical and Electronics Engineering (IEEE) for his contributions to "III-V Compound Semiconductor Optoelectronic Device Integration".

Dr Anatoli Kheifets, TP, received a Visiting Fellowship from the Japan Society for Promotion of Science. He was also a Visiting Professor at the University of Paris at Orsay.

Professor Yuri Kivshar, DU, was elected Fellow of the Optical Society of America, and was appointed to the Advisory Board of the journal *Chaos: An Interdisciplinary Journal of Nonlinear Science* published by the American Institute of Physics.

Mr Markus Kohonen, AM, was awarded the biennial Jagadishwar Mahanty Prize for the best PhD thesis in RSPHysSE for his thesis entitled *Experiments on Capillary Condensation*.

Mr Sergei Kucheyev, EME, was awarded an IEEE Electron Devices Society Graduate Student Fellowship. He also received the Australian Institute of Nuclear Science and Engineering (AINSE) Award for the Best Poster Presentation by a Postgraduate Student at the 12th Nuclear Techniques of Analysis Conference, Cairns, 15–20 July 2001.

Dr Sergey Kun, TP, was awarded a fellowship from the Japan Society for Promotion of Science and fellowship by the French Embassy, both in association with the Australian Academy of Sciences. He received a Visiting Professorship, Institute of Modern Physics, Lanzhou, China; a Max Planck Society Research Fellowship, Germany and a fellowship, International Center of Sciences, Cuernavaca, Mexico. For his talk at the International Symposium on Non-Equilibrium and Nonlinear Dynamics, Beijing, Dr Kun was awarded a special prize presented to him by Nobel Laureate Professor T.D. Lee.

Dr Serdar Kuyucak, TP, was elected Fellow of the American Physical Society.

Dr Brenton Lewis, AMPL, was elected as chairman of the 14th International Conference on Vacuum Ultraviolet Radiation Physics (VUV14), to be held in Cairns in 2004, following presentation of a successful competitive bid at the VUV13 meeting of the International Advisory Board in Trieste during July. In November, he was elected Fellow of the American Physical Society.

Professor Stjepan Marcelja, AM, was appointed Executive Director of the Rudjer Boskovic Institute in Zagreb, Croatia.

Dr Sergei Mingaleev, DU, shared the 2001 President Prize of the Ukraine with three other recipients for the best work in physics done by young scientists under the age of 35.

Professor John Mitchell, OSC/CfM, was presented with the School's 30-year pin for extended services to RSPHysSE.

Professor Barry Ninham, AM, was presented with the School's 30-year pin for extended services to RSPHysSE.

Mr Kevin Roberts, AMPL, was presented with the School's 30-year pin for extended services to RSPHysSE.

Dr Robert Robson, AMPL and TP, was awarded an Alexander von Humboldt Fellowship in August and is spending a year at the Institut für Niedertemperatur-Plasma-Physik, Greifswald, Germany.

Dr Tim Senden, AM, was awarded an Australian Research Fellowship to commence 2002. He was also awarded a Maître de conférences at Université Louis Pasteur/Institut Charles Sadron, Strasbourg, June/July 2001.

Professor Allan Snyder, OSC, together with Bell Laboratory's pioneering optical physicist, Dr Herwig Kogelnik, was awarded the Marconi International Prize.

The Team, Electronics Unit, was awarded the 2001 Council Medal for General Staff Excellence Team Award.

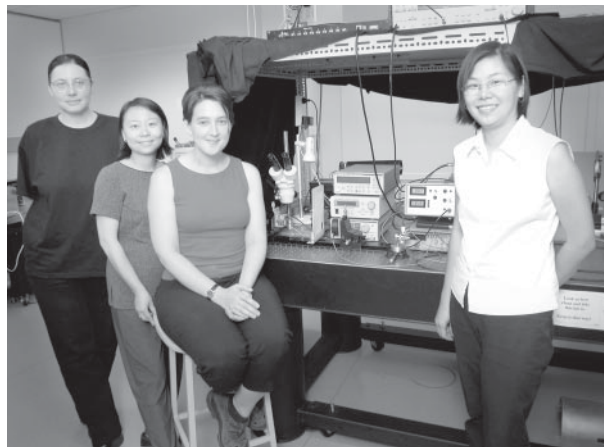
Mr Bob Turkentine, NP, was presented with the School's 30-year pin for extended services to RSPHysSE.

Ms Tessica Weijers, EME, was awarded an AINSE Medal for the best Student Oral Presentation at the joint meeting of the Australian Conference on Nuclear Techniques of Analysis and the 15th International Conference on Ion Beam Analysis, Cairns, 15–20 July 2001. She also received a Certificate of Distinction and Finalist for the RSPHysSE Director's Award for best student research paper.

Dr Nicholas Welham, AM and EME, was awarded the Rossiter W. Raymond Award of the American Institute of Mining, Metallurgical, and Petroleum Engineers for the best paper published by AIME in 2000. He was also elected to Fellowship of the Minerals Engineering Society.

Dr Jennifer Wong-Leung, EME, was awarded an Australian Research Council QE II Fellowship to commence in 2002.

Dr Mark Ridgway, EME, was appointed to the National Scientific Advisory Committee for the Australian Synchrotron Project.



Dr Jennifer Wong-Leung (right) and colleagues in the optics lab



Professor Allan Snyder receives the world's 'foremost prize in communications and information technology.' The Marconi International prize in New York City, December 2001



Legend[#] Member of another area of this University

* Not a member of this University

† Publication appearing in more than one department due to first author having a joint appointment

Applied Mathematics

Books and Book Chapters

Cox, S.[#], Knackstedt, M. and Braun, J.[#]
Principles of Structural Control on Permeability and Fluid Flow in Hydrothermal Systems
 In **Society of Economic Geologists Reviews**, Society of Economic Geologists, Boulder, USA (2001) 1–24

Hyde, S.T. and Ramsden, S.
Crystals: Two-Dimensional Non-Euclidean Geometry and Topology
 In **Chemical Topology – Applications and Techniques**, Gordon and Breach Science Publishers, The Netherlands (2001) 35–173

Hyde, S.T.
Identification of Lyotropic Liquid Crystalline Mesophases
 In **Handbook of Applied Surface and Colloid Chemistry**, John Wiley & Sons, UK (2001) 299–332

Knackstedt, M.
Pore-Scale Characterization of Porous Rocks: Evidence of Correlated Heterogeneity and Implications to Fluid Displacement Processes
 In **Annual Reviews of Computational Physics VIII**, World Scientific, Singapore (2001) 113–132

Yaminsky, V., Ohnishi, S. and Ninham, B.
Long-Range Hydrophobic Forces due to Capillary Bridging
 In **Handbook of Surfaces and Interfaces of Materials – Solid Thin Films and Layers**, Academic Press, USA (2001) 131–227

Publications in Refereed Journals

Arleth, L.^{*}, Marcelja, S. and Zemb, T.^{*}
Gaussian Random Fields with Two-Level Cuts – Model for Asymmetric Microemulsions with Nonzero Spontaneous Curvature?
Journal of Chemical Physics **115** (2001) 3923–3936

Arns, C.H.^{*}, Knackstedt, M., Pinczewski, V.^{*} and Mecke, K.R.^{*}
Euler-Poincare Characteristics of Classes of Disordered Media
Physical Review E **63** (2001) 031112 –1–13

Arns, C.H., Knackstedt, M., Pinczewski, V.^{*} and Lindquist, W.B.^{*}
Accurate Estimation of Transport Properties from Microtomographic Images
Geophysical Research Letters **28** (2001) 3361–3364

Atkin, R.^{*}, Craig, V. and Biggs, S.^{*}
Adsorption Kinetics and Structural Arrangements of Cetylpyridinium Bromide at the Silica-Aqueous Interface
Langmuir **17** (2001) 6155–6163

Bahr, M.^{*}, Tiberg, F.^{*} and Yaminsky, V.
Spreading Dynamics of Liquids and Surfactant Solutions on Partially Wettable Hydrophobic Substrates
Colloids and Surfaces **193** (2001) 85–96

Bostrom, M., Williams, D.R.M. and Ninham, B.
Specific Ion Effects: Why DLVO Theory Fails for Biology and Colloid Systems
Physical Review Letters **87** (2001) 168103–1–4

Bostrom, M., Williams, D.R.M. and Ninham, B.
Surface Tension of Electrolytes: Specific Ion Effects Explained by Dispersion Forces
Langmuir **17** (2001) 4475–4478

Bostrom, M.
Current-Induced Self-Energy Shift of Impurity Atoms between Metal Films
Physical Review B **64** (2001) 113410–1–4

Bostrom, M., Longdell, J. and Ninham, B.
Atom-Atom Interactions at and between Metal Surfaces at Nonzero Temperatures
Physical Review A **64** (2001) 062702–1–9

Chen, B.^{*}, Eddaoudi, M.^{*}, Hyde, S.T., O’Keeffe, M.^{*} and Yaghi, O.^{*}
Interwoven Metal-Organic Framework on a Periodic Minimal Surface with Extra-Large Pores
Science **291** (2001) 1021–1023

Christenson, H.K. and Claesson, P.M.^{*}
Direct Measurements of the Force between Hydrophobic Surfaces in Water
Advances in Colloid and Interface Science **91** (2001) 391–436

Christy, A., Alberius-Henning, P.^{*} and Lidin, S.^{*}
Computer Modeling and Description of Nonstoichiometric Apatites $Cd_{1-x}VO_2$, $J_{1-x}PO_4$, Br_{1-x} as Modified Chimney-Ladder Structures with Ladder-Ladder and Chimney-Ladder Coupling
Journal of Solid State Chemistry **156** (2001) 88–100

Craig, V., Jones, A.^{*} and Senden, T.
Contact Angles of Aqueous Solutions on Copper Surfaces Bearing Self-Assembled Monolayers
Journal of Chemical Education **78** (2001) 345–346

Craig, V. and Neto, C.
In Situ Calibration of Colloid Probe Cantilevers in Force Microscopy: Hydrodynamic Drag on a Sphere Approaching a Wall
Langmuir **17** (2001) 6018–6022

Craig, V., Neto, C. and Williams, D.R.M.
Shear-Dependent Boundary Slip in an Aqueous Newtonian Liquid
Physical Review Letters **87** (2001) 054504–1–4

Kjellander, R.^{*}, Lyubartsev, A.^{*} and Marcelja, S.
McMillan-Mayer Theory for Solvent Effects in Inhomogeneous Systems: Calculation of Interaction Pressure in Aqueous Electrical Double Layers
Journal of Chemical Physics **114** (2001) 9565–9577

Knackstedt, M., Marrink, S., Sheppard, A., Pinczewski, V.^{*} and Sahimi, M.^{*}
Invasion Percolation on Correlated and Elongated Lattices: Implications for the Interpretation of Residual Saturations in Rock Cores
Transport in Porous Media **44** (2001) 465–485

Knackstedt, M., Sheppard, A. and Sahimi, M.^{*}
Pore Network Modelling of Two-Phase Flow in Porous Rock: The Effect of Correlated Heterogeneity
Advances in Water Resources **24** (2001) 257–277

Large, D.^{*}, Fortey, N.^{*}, Mildowski, A.^{*}, Christy, A. and Dodd, J.^{*}
Petrographic Observations of Iron, Copper, and Zinc Sulfides in Freshwater Canal Sediment
Journal of Sedimentary Research **71** (2001) 61–69

Maeda, N. and Yaminsky, V.
Experimental Observations of Surface Freezing
International Journal of Modern Physics B **15** (2001) 3055–3077

Meldrum, F.^{*} and Hyde, S.T.
Morphological Influence of Magnesium and Organic Additives on the Precipitation of Calcite
Journal of Crystal Growth **231** (2001) 544–558

Nagai, Y., Maddess, T.^{*} and Ankiewicz, A.
Discrete Algebra on Cellular Automata and Binary Textures
Memoirs of the Kokushikan University Center for Information Science **22** (2001) 51–64

Neto, C. and Craig, V.
Colloid Probe Characterization: Radius and Roughness Determination
Langmuir **17** (2001) 2097–2099

Ohnishi, S., Yaminsky, V. and Christenson, H.
Characterization and Direct Force Measurements of Fluorocarbon Monolayer Surfaces
Studies in Surface Science and Catalysis 132 (2001) 905–908

Pereira, G. and Williams, D.R.M.
Toroidal Condensates of Semiflexible Polymers in Poor Solvents: Adsorption, Stretching, and Compression
Biophysical Journal 80 (2001) 161–168

Senden, T., Di Meglio, J.* and Silberzan, I.*
The Conformation of Adsorbed Polyacrylamide and Derived Polymers
Comptes Rendus de Academic de Science 1 (2000) 1143–1152

Senden, T.
Force Microscopy and Surface Interactions
Current Opinion in Colloid & Interface Science 6 (2001) 95–101

Sevick, E.* and Williams, D.
Long-Lived States in Electrophoresis: Collision of a Polymer Chain with two or more Obstacles
Europhysics Letters 56 (2001) 529–535

Stewart, A.M.
Gauge Transformation between Retarded and Multipolar Gauges
Pramana Journal of Physics 56 (2001) 685–689

Stewart, A.M.
Interatomic Forces, Phonons, the Foreman-Lomer Theorem and the Blackman Sum Rule
International Journal of Modern Physics B 15 (2001) 1–14

Wangerek, L.*, Dahl, H.H.*, Senden, T., Carlin, J.*, Jans, D., Dunstan, D.*, Ioannou, P.*, Williamson, R.* and Forrest, S.*
Atomic Force Microscopy Imagine of DNA-Cationic Liposome Complexes Optimised for Gene Transfection into Neuronal Cells
The Journal of Gene Medicine 3 (2001) 72–81

Welham, N.J.[†]
Enhanced Dissolution of Tantalite/Columbite Following Milling
International Journal of Mineral Processing 61 (2001) 145–154

Welham, N.J.[†]
Mechanochemical Processing of Gold-Bearing Sulphides
Minerals Engineering 14 (2001) 341–347 (also listed under EME)

Welham, N.J.
Mechanochemical Processing of Enargite (Cu₃As₃S₄)
Hydrometallurgy 62 (2001) 165–173

Welham, N.J.[†]
Enhanced Gas-Solid Reaction after Extended Milling
Journal of Materials Science Letters 20 (2001) 1849–1851 (also listed under EME)

Welham, N.J.[†]
Novel Process for Enhanced Lunar Oxygen Recovery
Journal of Materials Science 36 (2001) 2343–2348 (also listed under EME)

Welham, N.J.[†]
Effect of Extended Grinding on the Dissolution of a Ta/Nb Concentrate
Canadian Metallurgical Quarterly 40 (2001) 143–154

Yaminsky, V. and Vogler, E.*
Hydrophobic Hydration
Current Opinion in Colloid & Interface Science 6 (2001) 342–349

Atomic and Molecular Physics Laboratories

Books and Book Chapters

Buckman, S.J.
Future Opportunities in Positron-Atom (Molecule) Scattering In New Directions in Antimatter Chemistry and Physics, Kluwer Academic Publishers, The Netherlands (2001) 391–411

Buckman, S.J., Chadderton, L.T. and Cruz-Jiminez, S.*
Systematic Regularities in Low-Energy Electron-Molecule Scattering
In The Physics of Ionized Gases, Institute of Physics, Yugoslavia (2001) 97–111

Tranham, K.T.*, Gulley, R.J., Cho, H.*, Panajotovic, R., Uhlmann, L.J. and Buckman, S.J.
New Techniques for Electron Collisions Research In The Physics of Ionized Gases, Institute of Physics, Yugoslavia (2001) 3–17

Publications in Refereed Journals

Blake, D.* and Robson, R.E.[†]
Negative Differential Conductivity in Gases: The "True Origin"
Journal of the Physical Society of Japan 70 (2001) 3556–3559 (Also listed under TP)

Bolognesi, P.*, Camilloni, R.*, Coreno, M.*, Turri, G.*, Berakdar, J.*, Kheifets, A.S.[†] and Avaldi, L.*
Complementary TDCS for the Photo-Double Ionisation of He at 40 eV above Threshold in Unequal Energy-Sharing Conditions
Journal of Physics B 34 (2001) 3193–3203 (Also listed under TP)

Campeanu, R.I.*, McEachran, R.P. and Stauffer, A.D.*
Positron Impact Ionization of Hydrogen and the Noble Gases
Canadian Journal of Physics 79 (2001) 1231–1236

Cho, H., Gulley, R.J. and Buckman, S.J.
Elastic Electron-Molecule Scattering Cross Section: Sulphur Hexafluoride and Benzene
Journal of Chinese Chemical Society 48 (2001) 381–387

Cho, H., Gulley, R.J., Sunohara, K.*, Kitajima, M.*, Uhlmann, L.J., Tanaka, H.* and Buckman, S.J.
Electron-Electron Scattering from C₂H₆ and C₆F₆
Journal of Physics B 34 (2001) 1019–1038

Dall, R.G., Hoogerland, M.D., Baldwin, K.G.H. and Buckman, S.J.
Hollow Fibre Guides for Metastable Helium Atoms
Comptes Rendus de l'Academie des Sciences IV 2 (2001) 595–603

Dawson, C.*, Cvejanovic, S.*, Secombe, D.P.*, Reddish, T.J.*, Maulbetsch, F.*, Huetz, A.*, Mazeau, J.* and Kheifets, A.S.[†]
Helium (γ_{2e}) Triple Differential Cross Sections at an Excess Energy of 60 eV
Journal of Physics B 34 (2001) 525–533 (Also listed under TP)

Dedman, C.J., Baldwin, K.G.H. and Colla, M.
Fast Switching of Magnetic Fields in a Magneto-Optic Trap
Review of Scientific Instruments 72 (2001) 4055–4058

Dedman, C.J., Roberts, E.H., Gibson, S.T. and Lewis, B.R.
Fast 1kV Metal-Oxide-Semiconductor Field-Effect Transistor Switch
Review of Scientific Instruments 72 (2001) 3718–3720

Dedman, C.J., Roberts, E.H., Gibson, S.T. and Lewis, B.R.
An Ion Gating, Bunching, and Potential Re-Referencing Unit
Review of Scientific Instruments 72 (2001) 2915–2922

Dorn, A.*, Kheifets, A.S.[†], Schroter, C.D.*, Najjari, B.*, Hohl, C.*, Moshhammer, R.* and Ullrich, J.*
Double Ionization of Helium by Electron-Impact: Complete Pictures of the Four-Body Break-up Dynamics
Physical Review Letters 86 (2001) 3755–3758 (Also listed under TP)

Hawes, F.T.*, Torop, L.W.*, Lewis, B.R. and Gibson, S.T.
Asymmetry Sum Rule for Molecular Predissociation
Physical Review A 63 (2001) 012513–1–12

Kheifets, A.S.[†]
On Different Mechanisms of the Two-Electron Atomic Photoionization
Journal of Physics B 34 (2001) L247–L252 (Also listed under TP)

Kheifets, A.S.[†], Vos, M. and Weigold, E.
The Spectral Momentum Density of Aluminium, Copper and Gold Measured by Electron Momentum Spectroscopy
Zeitschrift für Physikalische Chemie 215 (2001) 1323–1339 (Also listed under TP)

Kono, M. and Matsumi, Y.*
Reaction Processes of O(¹D) with Fluoroethane Compounds
Journal of Physical Chemistry A 105 (2001) 65–69

Lahman-Bennani, A.*, Duguet, A.*, Gaboriaud, M.N.*, Taouil, I.*, Lecas, M.*, Kheifets, A.S.[†], Berakdar, J.* and Dal Cappello, C.*
Complete Experiments for the Double Ionisation of He: ($e, 3e$) Cross Sections at 1 keV Impact Energy and Small Momentum Transfer
Journal of Physics B 34 (2001) 3073–3087 (Also listed under TP)

Lewis, B.R., England, J.P., Gibson, S.T., Brunger, M.J.* and Allan, M.*
Electron Energy-Loss Spectra of Coupled Electronic States: Effects of Rydberg-Valence Interactions in O₂
Physical Review A 63 (2001) 022707–1–18

Lewis, B.R., Gibson, S.T., Hawes, F.T.* and Torop, L.W.*
A New Model for the Schumann-Runge Bands of O₂
Physics and Chemistry of the Earth C 26 (2001) 519–526

Lewis, B.R., Gibson, S.T., O'Keefe, P.*, Ridley, T.*, Lawley, K.P.* and Donovan, R.J.*
Observation of Completely Destructive Quantum Interference between Interacting Resonances in Molecular Predissociation
Physical Review Letters 86 (2001) 1478–1481

Lewis, B.R., Gibson, S.T. and Roberts, E.H.
Assignment of the Excess Absorption Underlying the Schumann-Runge Bands of Molecular Oxygen
Journal of Chemical Physics 115 (2001) 245–248

Lewis, B.R., Gibson, S.T., Tukey, A.A.*, Robertson, R.*, Hwang, E.S.*, Bergman, A.* and Copeland, R.A.*
Identification of the $3\pi\pi, e^2A_1$ Rydberg State of O₂ by (3+1) Resonance-Enhanced Multiphoton-Ionization Spectroscopy
Journal of Chemical Physics 114 (2001) 8364–8371

Li, B.*, White, R.D.*, Robson, R.E.[†] and Ness, K.F.*
Transport Coefficients in Crossed $(e, 2e)$ Ionization of Sodium
Annals of Physics 292 (2001) 179–198 (Also listed under TP)

Lower, J., Weigold, E., Berakdar, J.* and Mazevet, S.*
Magnetic and Orbital Dichroism in $(e, 2e)$ Ionization of Sodium
Physical Review Letters 86 (2001) 624–627

Lower, J., Weigold, E., Berakdar, J.* and Mazevet, S.*
Orbital and Spin-Polarization Transfer in Ionizing Electron-Atom Collisions
Physical Review A 64 (2001) 042701

Lu, W., Hoogerland, M.D., Milic, D., Baldwin, K.G.H. and Buckman, S.J.
A Bright Metastable Atom Source at 80K
Review of Scientific Instruments 72 (2001) 2558–2561

Matsumi, Y.*, Murakami, Shin-ichi*, Kono, M., Takahashi, K.*, Koike, M.* and Kondo, Y.*
High-Sensitivity Instrument for Measuring Atmospheric NO₂
Analytical Chemistry 73 (2001) 5485–5493

Milic, D., Hoogerland, M.D., Baldwin, K.G.H. and Buckman, S.J.
Mirror Design for Two-Dimensional Magneto-Optic Lenses and Compressors
Applied Optics 40 (2001) 1907–1910

Purwanto, A., Lun, D.R., McEachran, R.P. and Buckman, S.J.
Determination of Two-Channel Scattering Amplitudes using Unitarity
Physical Review A 63 (2001) 022703–1–5

Robson, R.E.[†]
Dispersion of Meteor Trails in the Upper Atmosphere
Physical Review E 63 (2001) 026404–1–5 (Also listed under TP)

Sashin, V.A.*, Bolorzadeh, M.A.*, Kheifets, A.S.[†] and Ford, M. J.*
Conduction Band Electronic Structure of Metallic Beryllium
Journal of Physics C 13 (2001) 4203–4219 (Also listed under TP)

Sattler, T.*, Tschentscher, T.*, Schneider, J.R.*, Vos, M., Kheifets, A.S.[†], Lun, D.R., Weigold, E., Dollinger, G.*, Bross, H.* and Bell, F.*
Anisotropy of the Electron Momentum Density of Graphite Studied by ($\gamma, e\gamma$) and ($e, 2e$) Spectroscopy
Physical Review B 63 (2001) 155204–1–17 (Also listed under TP)

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Excitation of the D States of Magnesium
Journal of Physics B 34 (2001) 2071–2079

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Search for Resonances in the Scattering of Low-Energy Positrons from Atoms and Molecules
Journal of Physics B 34 (2001) 467–474

Sullivan, J.P.*, Marler, J.P.*, Gilbert, S.J.*, Buckman, S.J. and Surko, C.M.*
Excitation of Electronic States of Ar, H₂ and N₂ by Positron Impact
Physical Review Letters 87 (2001) 073201–1–4

Vos, M., Kheifets, A.S.[†] and Weigold, E.
Momentum Profiles of Aluminium
Journal of Electron Spectroscopy and Related Phenomena 114 (2001) 1031–1036 (Also listed under TP)

Vos, M., Kheifets, A.S.[†] and Weigold, E.
The Spectral Momentum Density of Aluminum Measured by Electron Momentum Spectroscopy
Journal of Physics and Chemistry of Solids **62** (2001) 2215–2221 (Also listed under TP)

Vos, M., Kheifets, A.S.[†], Weigold, E. and Aryasetiawan, F.*
Electron Correlation Effects in the Spectral Momentum Density of Graphite
Physical Review B **63** (2001) 033108–1–4 (Also listed under TP)

Waring, K.V., Lewis, B.R., Baldwin, K.G.H. and Gibson, S.T.
 λ and γ Reversal: The Dissociation-Limit Region of the $B^3\Sigma_u^-$ State of O_2
Journal of Chemical Physics **115** (2001) 5836–5842 (Also listed under LPC)

White, R.D.*, Robson, R.E.[†] and Ness, K.F.*
Visualization of Ion and Electron Velocity Distribution Functions in Electric and Magnetic Fields
Journal of Physics D **34** (2001) 2205–2210 (Also listed under TP)

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Bolognesi, P.*, Cavanagh, S.J., Avaldi, L.*, Camilloni, R.*, Dawber, G.*, Lopes, M.C.A.*, MacDonald, M.A.* and King, G.C.*
Direct Observation of Satellite and Inner-Valence States of Xe^{2+} Many Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces, Halle/Saale, Germany, 26–29 July 2000, Kluwer Academic/Plenum Publishers (2001) 163–172

Kheifets, A.S.[†], Ipatov, A.* and Bray, I.*
Recent Progress in Theory of Atomic Double Photoionization Many-Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces, Halle (Saale), Germany, 26–29 July 2000, Kluwer Academic/Plenum Publishing (2001) 215–230 (Also listed under TP)

Mazevet, S.*, Berakdar, J.*, Lower, J. and Weigold, E.
Ionization of Laser Oriented Sodium Atoms by Polarized Electrons
Many-Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces, Halle (Saale), Germany, 26–29 July, Kluwer Academic/Plenum Publishers (2001) 15–25

Weigold, E. and Vos, M.
($e, 2e$) Studies of Condensed Matter: A Review of Recent Results
Many-Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces, Halle/Saale, Germany, 26–29 July 2000, Kluwer Academic/Plenum Publishers (2001) 417–433

Director's Unit

Books and Book Chapters

Kivshar, Y.S. and Sukhorukov, A.A.
Stability of Spatial Optical Solitons
In **Spatial Solitons**, Springer Verlag, Germany (2001) 211–268

Mingaleev, S.F., Kivshar, Y.S. and Sammut, R.A.*
Discrete Spatial Solitons in Photonic Crystals and Waveguides
In **Soliton-Driven Photonics**, Kluwer Academic Publishers, The Netherlands (2001) 487–504

Mingaleev, S.F. and Kivshar, Y.S.
Self-Trapping and Localized Modes in 2-D Photonic Crystals
In **Nonlinearity and Disorder: Theory and Applications**, Kluwer Academic Publishers, The Netherlands (2001) 323–330

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Refereed Conference Proceedings

Akhmediev, N., Soto-Crespo, J.M.* and Town, G.*
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OECC/IOCC 2001 Conference Incorporating ACOFT, Sydney, Australia, 1–5 July 2001, Australian Conference on Optical Fibre Technology (2001) 410–411

Akhmediev, N., Soto-Crespo, J.M.* and Chiang, K.S.*
Coexistence of a Multiplicity of Stable and Unstable Solitons in Fiber Lasers
The 4th Pacific Rim Conference on Lasers and Electro-Optics 2001, Chiba, Japan, 15–19 July 2001, Institute of Electrical and Electronics Engineers Inc. (2001) 72–73

Kang, J.U.†, Kim, D.H.†, Khurgin, J.B.†, Akhmediev, N., Han, H.† and Shaw, H.†

Wide-Spectrum Multi-Soliton Complex in Er/Yb-Doped Fiber Amplifier
The 4th Pacific Rim Conference on Lasers and Electro-Optics 2001, Chiba, Japan, 15–19 July 2001, Institute of Electrical and Electronics Engineers Inc. (2001) 42–43

Rastogi, V.†, Chiang, K.S.† and Akhmediev, N.
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Nonlinear Guided Waves and Their Applications 2001, Clearwater, USA, 25–28 March 2001, Optical Society of America (2001) 266–268

Soto-Crespo, J.M.†, Akhmediev, N. and Town, G.†
Multi-Frequency Pulsations in Mode-Locked Fiber Lasers
The 4th Pacific Rim Conference on Lasers and Electro-Optics 2001, Chiba, Japan, 15–19 July 2001, Institute of Electrical and Electronics Engineers Inc (2001) 70–71

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Plasma Research Laboratory

Publications in Refereed Journals

Aanesland, A. and Fredriksen, A.*
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Journal of Vacuum Science & Technology A 19 (2001) 2446–2452

Blackwell, B.D.
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Algorithms for Real Time Magnetic Field Tracing and Optimisation
Computer Physics Communications 142 (2001) 243–247

Howard, J., Michael, C.A., Glass, F. and Cheetham, A.D.*
Optical Coherence Techniques for Plasma Spectroscopy
Review of Scientific Instruments 72 (2001) 888–897

Li, W.T., McKenzie, D.R.†, McFall, W.D.* and Zhang, Q.C.*
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McKenzie, D.R.†, Li, W.T., Gerstner, E.G.†, Merchant, A.†, McCulloch, D.G.†, Marks, N.A.† and Bilek, M.†
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Diamond and Related Materials 10 (2001) 230–233

Michael, C.A., Howard, J. and Blackwell, B.D.
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Review of Scientific Instruments 72 (2001) 1034–1037

Nagasaki, K.†, Itoh, Y.†, Sakamoto, K.†, Obiki, T.†, Maekawa, T.†, Morioka, H.†, Terumich, T.†, Asakawa, M.†, Shats, M.G. and Punzmann, H.
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Nagasaki, K.†, Shats, M.G., Smith, H.B.† and Punzmann, H.
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Rudakov, D.L.†, Shats, M.G., Harris, J.H. and Blackwell, B.D.
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Journal of Plasma and Fusion Research Series 4 (2001) 219–223

Shi, X-H.†, Boman, J.† and Shats, M.G.
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Review of Scientific Instruments 72 (2001) 503–505

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Review of Scientific Instruments 72 (2001) 449–452

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Solomon, W.M., Shats, M.G., Korneev, D.† and Nagasaki, K.†
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Review of Scientific Instruments 72 (2001) 352–354

Warr, G.B.* and Howard, J.
A Three-Dimensional Gaussian-Beam Ray-Tracing Program for Designing Interferometer/Polarimeter Plasma Diagnostics
Review of Scientific Instruments **72** (2001) 2305–2309

Theoretical Physics

Books and Book Chapters

Das, M.P. and Green, F.*
Shot Noise in Fractional Quantum Hall Systems
In Science and Technology of Nanostructured Materials, Nova Science Publishers, USA (2001) 217–222

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Shot Noise in Mesoscopic Quantum Systems
In Condensed Matter Theories 24, Nova Science Publishers, USA (2001) 29–39

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Aspects of Transport and Noise for Mesoscopic Charge Detectors
In Proceedings of the 1st International Conference on Experimental Implementation of Quantum Computation, Rinton Press, USA (2001) 335–339

Refereed Journals

Ball, R.
Understanding Critical Behaviour through Visualization: A Walk around the Pitchfork
Computer Physics Communications **142** (2001) 71–75

Ball, R. and Haymet, A.D.J.*
Bistability and Hysteresis in Self-Assembling Micelle Systems: Phenomenology and Deterministic Dynamics
Physical Chemistry Chemical Physics **3** (2001) 4753–4761

Barker, F.C.
²¹⁰O Ground-State Decay by ³He Emission
Physical Review C **63** (2001) 047303–1–2

Barker, F.C. and Kondo, Y.
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Nuclear Physics A **688** (2001) 959–974

Baxter, R.J.
Dichromatic Polynomials and Potts Models Summed over Rooted Maps
Annals of Combinatorics **5** (2001) 17–36

Bazhanov, V.V., Lukyanov, S.L.* and Zamolodchikov, A.B.*
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Journal of Statistical Physics **102** (2001) 567–576

Blake, D.* and Robson, R.E.[†]
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Journal of the Physical Society of Japan **70** (2001) 3556–3559 (Also listed under AMPL)

Bolognesi, P.*, Camilloni, R.*, Coreno, M.*, Turri, G.*, Berakdar, J.*, Kheifets, A.S.[†] and Avaldi, L.*
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Philosophical Magazine B **81** (2001) 1409–1442

Brown, A.
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ANZIAM Journal **42** (2001) 445–450

Chan, R. and Gulacsi, M.
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Journal of Superconductivity **13** (2000) 917–919

Chan, R. and Gulacsi, M.
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Philosophical Magazine Letters **81** (2001) 673–682

Chung, S.H.* and Kuyucak, S.
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Clinical & Experimental Pharmacology & Physiology **28** (2001) 89–94

Corry, B., Allen, T.W.*, Kuyucak, S. and Chung, S.H.*
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Biophysical Journal **80** (2001) 195–214

Das, M.P., Golden, K.I.* and Green, F.*
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Physical Review E **64** (2001) 046125–1–14

Das, M.P., Golden, K.I.* and Green, F.*
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Physical Review E **64** (2001) 012103–1–4

Dawson, C.*, Cvejanovic, S.*, Secombe, D.P.*, Reddish, T.J.*, Maulbetsch, F.*, Huetz, A.*, Mazeau, J.* and Kheifets, A.S.[†]
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Dewar, R.L., Cuthbert, P. and Ball, R.
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Dorn, A.*, Kheifets, A.S.[†], Schroter, C.D.*, Najari, B.*, Hohr, C.*, Moshhammer, R.* and Ullrich, J.*
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Nuclear Physics A **686** (2001) 463–477

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Physics Letters B **513** (2001) 269–272

Green, F. and Das, M.P.
Classical to Quantum Crossover in High-Current Noise of One-Dimensional Ballistic Wires
Fluctuation and Noise Letters **1** (2001) 21–33

Hall, M.J.W.
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Physical Review A **64** (2001) 052103–1–10

Kheifets, A.S.[†]
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Journal of Physics B **34** (2001) L247–L252 (Also listed under AMPL)

Kheifets, A.S.[†], Vos, M. and Weigold, E.
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Zeitschrift für Physikalische Chemie **215** (2001) 1323–1339 (Also listed under AMPL)

Kumar, K.
Book Review: Information Theory and Quantum Physics: Physical Foundations for Understanding the Conscious Process
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Kuyucak, S., Andersen, O.S.* and Chung, S.H.
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Lahmam-Bennani, A.*, Duguet, A.*, Gaboriaud, M.N.*, Taouil, I.*, Lecas, M.*, Kheifets, A.S.[†], Berakdar, J.* and Dal Cappello, C.*
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Journal of Physics B **34** (2001) 3073–3087 (Also listed under AMPL)

Li, B.*, White, R.D.*, Robson, R.E.[†] and Ness, K.F.*
Transport Coefficients in Crossed E and B Fields: Empirical Relations and Non-Conservative Collisional Effects
Annals of Physics **292** (2001) 179–198 (Also listed under AMPL)

McCulloch, I.P., Bishop, A.R.* and Gulacsi, M.
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Philosophical Magazine B **81** (2001) 1603–1613

McCulloch, I.P. and Gulacsi, M.
Total Spin in the Density Matrix Renormalization Group Algorithm
Philosophical Magazine Letters **81** (2001) 447–453

McIntosh, A.C.*, Wake, G.*, Ball, R. and Gray, B.F.*
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ANZIAM Journal **43** (2001) 59–75

Robson, B.A. and Sutanto, S.H.
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International Journal of Theoretical Physics **40** (2001) 1475–1489

Robson, B.A. and Sutanto, S.H.
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International Journal of Theoretical Physics **40** (2001) 1491–1499

Robson, R.E.[†]
Dispersion of Meteor Trails in the Upper Atmosphere
Physical Review E **63** (2001) 026404–1–5 (Also listed under AMPL)

Sashin, V.*, Bolourizadeh, M.*, Kheifets, A.S.[†] and Ford, M.J.*
Conduction Band Electronic Structure of Metallic Beryllium
Journal of Physics C **13** (2001) 4203–4219 (Also listed under AMPL)

Sattler, T.*, Tschentscher, Th.*, Schneider, J.*, Vos, M., Kheifets, A.S.[†], Lun, D.R., Weigold, E., Dollinger, G.*, Bross, H.* and Bell, F.*
Anisotropies of the Electron Momentum Density Graphite Studied by ($\gamma, e\gamma$) and ($e, 2e$) Spectroscopy
Physical Review B **63** (2001) 115204–1–17 (Also listed under AMPL)

Talanina, I. and de Sterke, M.C.*
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Physical Review A **63** (2001) 053802–1–6

Vos, M., Kheifets, A.S.[†] and Weigold, E.
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Journal of Electron Spectroscopy and Related Phenomena **114–116** (2001) 1031–1036 (Also listed under AMPL)

Vos, M., Kheifets, A.S.[†] and Weigold, E.
The Spectrum Momentum Density of Aluminum Measured by Electron Momentum Spectroscopy
Journal of Physics and Chemistry of Solids **62** (2001) 2215–2221 (Also listed under AMPL)

Vos, M., Kheifets, A.S.[†], Weigold, E. and Avrasetiawan, F.*
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Physical Review B **63** (2001) 033108–1–4 (Also listed under AMPL)

White, R.D.*, Robson, R.E.[†] and Ness, K.F.*
Visualization of Ion and Electron Velocity Distribution Functions in Electric and Magnetic Fields
Journal of Physics D **34** (2001) 2205–2210 (Also listed under AMPL)

Refereed Conference Papers

Ball, R., Dewar, R.L. and Sugama, H.*
Symmetry and Singularities in a Low-Dimensional Model of a Complex System. A Back Door Approach to the Physics of L-H Transitions
IPELS-2001, Niseko, Hokkaido, Japan, 2–6 July, National Institute for Fusion Science (2001)

Kheifets, A.S.[†], Ipatov, A.* and Bray, I.*
Recent Progress in Theory of Atomic Double Photoionization
Many-Particle Spectroscopy of Atoms, Molecules, Clusters and Surfaces, Halle (Saale), Germany, 26–29 July 2000, Kluwer Academic/Plenum Publishing (2001) 215–230 (Also listed under AMPL)

Kun, S.Yu.
Spontaneous Coherence and Non-Equilibrium Correlation Phase Transitions in Microscopic and Mesoscopic Systems
International Symposium on Non-Equilibrium and Nonlinear Dynamics in Nuclear and Other Finite Systems, Beijing, China, 21–25 May 2001, American Institute of Physics (2001) 319–326

Wang, Q.*, Kun, S.Yu., Tian, W.*, Li, S.*, Dong, Y.*, Li, Z.*, Lu, X.*, Zhao, K.*, Fu, C.*, Liu, J.*, Jiang, H.* and Hu, G.*
Experimental Test of Slow Phase Randomization and Quantum Chaos in Finite Highly Excited Many-Body Systems
International Symposium on Non-Equilibrium and Nonlinear Dynamics in Nuclear and Other Finite Systems, Beijing, China, 21–25 May 2001, American Institute of Physics (2001) 349–356

Invited Conference Presentations and Lectures

Legend: * *External to the University*
 # *Former member of the University*
Presenter of contributed paper is underlined



Applied Mathematics

CTP Workshop, Biophysics: From Proteins to Cells. Physical Perspectives on the Emerging Molecular Structure of Biosystems, Canberra, 15–26 January

Senden, T. — *Force Microscopy*

Stochastic and Statistical Geometry Conference, Wuppertal, Germany, 4–9 March

Knackstedt, M. — *Reconstruction and Properties of Complex Media*

French Physics Society workshop “Recent Developments in Foams”, Les Houches, France, 6–10 June

Hyde, S. — *Novel Foam Geometries*

Senden, T. — *Micro-X-ray Tomography. Developing an Integrated Approach to Characterisation and Modelling of Complex Materials*

First Australian Workshop on Astrobiology, Macquarie University, Sydney, 12–13 July

Hyde, S. — *Biological vs. Inorganic Morphologies: Animal, Vegetable or Mineral*

European Colloid and Surface Science Meeting, Coimbra, Portugal, 16–21 September

Ninham, B. — *Specific Ion Effects in Colloid Science*

Nobel Centennial Symposium in Chemistry, Öresundsbro, Sweden, 4–7 December

Ninham, B. — *Flaws in the Fabric of Physical Chemistry*

Atomic and Molecular Physics Laboratories

1st Australian Workshop on Nanotubes and Fullerenes, Canberra, 3–4 May

Chadderton, L.T. and Chen, Y. — *Thermodynamics and the Capillarity of Solids: Growth of Bamboo and Skeletal Nanotubes*

Integrated Optics and Optical Fibre Communication and Optoelectronics and Communications Conference, Sydney, 2–6 July

Dall, R.G., Hoogerland, M.D.*, Buckman, S.T. and Baldwin, K.G.H. — *Atom Optics and Single-mode Fibres*

XXII International Conference on Photonic, Electronic and Atomic Collisions, Santa Fe, USA, 18–24 July

Kheifets, A.S. — *Close-coupling Theory of Two-electron Atomic Ionization by Photon and Electron Impact*

Sullivan, J.P.*, Gilbert, S.J.*, Surko, C.M.* and Buckman, S.J. — *Vibrational Excitation Cross Sections for Low-Energy Positron-Molecule Scattering*

13th International Conference on Vacuum Ultraviolet Radiation Physics, Trieste, Italy, 23–27 July

Lewis, B.R., Gibson, S.T., Baldwin, K.G.H. and Waring, K. — *Comparative Very-high-resolution VUV Spectroscopy: Laser Spectroscopy of O₂*

11th International Workshop on Low-Energy Positron and Positronium Physics, Santa Fe, USA, 25–27 July

Buckman, S.J., Sullivan, J.P.*, Marler, J.P.*, Gilbert, S.J.* and Surko, C.M.* — *Opportunities for Collision Studies with High-resolution Positron Beams*

International Symposium on (e,2e) Double Photoionization and Related Topics, Rolla, USA, 25–28 July

Lower, J. — *(e,2e) Collisions with Polarized Electrons and Excited, Oriented and Spin Polarized Targets*

Vos, M., Kheifets, A. and Weigold, E. — *Electron Correlation Effects in Materials as Observed by Electron Momentum Spectroscopy*

Workshop on Non-Neutral Plasmas 2001, San Diego, USA, 30 July–2 August

Gilbert, S.J.*, Sullivan, J.P.*, Marler, J.P.*, Barnes, L.D.*, Schmidt, P.*, Buckman, S.J. and Surko, C.M.* — *Low-energy Positron-Matter Interactions using Trap-based Beams*

International Laser Science Conference XVII, Long Beach, USA, 14–18 October

Dall, R.G., Hoogerland, M.D.*, Buckman, S.T. and Baldwin, K.G.H. — *Guiding Metastable Helium Atoms through Hollow Optical Fibres*

Director's Unit

Guided Wave Photonics Workshop, Oxford University, UK, 29–30 March

Love, J.D. — *Design & Modelling of Optical Fibres, Waveguides & Devices*

Photonics Korea 2001, Gwangju, Korea, 11–14 September

Love, J.D. — *Optical Fibres, Waveguides & Devices for Optical Communications Applications*

International Workshop: Localized Excitations on Lattices, Dresden, Germany, 24–28 September

Kivshar, Yu.S. — *Nonlinear Localized Modes in Periodic Media*

Annual Meeting of the Optical Society of America, Long Beach, USA, 14–17 October

Kivshar, Yu.S. — *Making "Molecules" from Light*

International Symposium on Photonics & Applications, Singapore, 26–30 November

Love, J.D. — *Modelling & Design of Planar Waveguides*

Australian Conference in Optics and Laser Science ACOLS2001, Brisbane, 1–5 December

Kivshar, Yu.S. — *Nonlinear Photonic Crystals*

Electronic Materials Engineering

Advanced Research Workshop on Semiconductor Nanostructures, Queenstown, New Zealand, 5–9 February

Jagadish, C. — *Self Organised Growth of Quantum Wires and Quantum Dots for Optoelectronic Applications*

199th Meeting of the Electrochemical Society – 6th International Symposium on Silicon Nitride and Silicon Oxide Thin Insulating Films, Washington DC, USA, 25–30 March

Kucheyev, S.O. — *Ion Beam Damage Processes in GaN*

Petravic, M. — *Low Energy Ion Irradiation of Silicon: Compound Formation and Segregation of Impurities*

2001 Beijing International Conference of Nanotechnology, Beijing, China 16–18 July

Chen, Y. — *Large Quantity Production of Nanotube Materials*

22nd International Conference on Photonic, Electronic and Atomic Collisions, ICPEAC 2001, Santa Fe, USA, 18–24 July

Comtet, G.*, Dujardin, G.*, Hellner, L.* and Petravic, M. — *Photon-Induced Fabrication of Atomic Scale Structures on Surfaces*

International Symposium on Physical Acoustics, Perugia, Italy, 10–14 September

Fletcher, N., Hollenberg, L.*, Smith, J.* and Wolfe, J.* — *The Didjeridu and the Vocal Tract*

Australian Institute of Physics ACT Branch Meeting, ANU, 18 October

Elliman, R.G. — *Ion Beam Modification and Analysis of Materials*

Materials Research Society Fall Meeting, Boston, USA, 26–30 November

Fu, L., Tan, H.H., Cohen, M.I., Jagadish, C., Dao, L.V.*, Gal, M.*, Li, N.*, Li, N.*, Liu, X.*, Lu, W.*, and Shen, S.C.* — *Ion Implantation Induced Interdiffusion in Quantum Wells for Optoelectronic Device Integration*

International Workshop on Physics of Semiconductor Devices, New Delhi, India, 11–15 December

Deenapanray, P.N.K., Fu L., Tan, H.H., Cohen, M.I., Yuan, S., Li, G., Gal, M. and Jagadish, C. — *Application of Quantum Well Intermixing for Optoelectronic Device Integration*

Workshop on MEMS and Photonics, DSTO, Salisbury, 20 December

Buda, M., Carmody, C.Y., Cohen, M.I., Deenapanray, P.N.K., Fu, L., Gao, M., Hay, J., Jagadish, C., Lever, P. and Tan, H.H. — *Growth, Characterisation and Processing of Semiconductor Optoelectronic Materials and Devices*

Laser Physics Centre

Asia-Pacific Polymer Optical Fibre Workshop, Sydney, 4–5 January

Luther-Davies, B., Samoc, A., Samoc, M., Wong, M.S.*, Krolikowska, R.M., Freydank, A.F., Martin, T.M., Chu, P.L.*, Peng, G.D.* and Bassett, I.* — *Sensing Voltage with an Optical Fibre*
Samoc, A., Luther-Davies, B., Samoc, M., Krolikowska, R.M., Martin, T.M., MacLeod, C., Bottega, J., Freydank, A.C., Wong, M.S.*, Peng, G.D.*, Whitbread, T.*, Ji, P.* and Chu, P.L.* — *Polymer Optical Fibre Preforms with Non-linear Optical Chromophores*

SPIE Conference, Photonics West: Optical Pulse and Beam Propagation III, San Jose, USA, 20–26 January

Krolikowski, W. — *Vector Incoherent Solitons*

CLEO 2001, Baltimore, USA, 6–11 May

Ell, R.*, Morgner, U.*, Kärtner, F.X.*, Fujimoto, J.G.*, Ippen, E.P.*, Scheuer, V.*, Angelow, G.*, Tschudi, T.*, Lederer, M.J., Boiko, A., Luther-Davies, B. — *Octave-spanning Spectra directly from a Two-foci Ti:sapphire Laser with Enhanced Self-phase Modulation*

Nonlinear Science Festival, Technical University of Denmark, 12–15 June

Krolikowski, W. — *Spatial Optical Solitons*

Integrated Optics and Optical Fiber Communication and Optoelectronics and Communications Conference (IOOC/OECC Incorporating ACOFT), Sydney, 1–6 July

Samoc, M., Samoc, A., Rode, A. and Luther-Davies, B. — *Short Laser Pulse Induced Nonlinear Optical Phenomena in Novel Materials and Structures*

Dall, R.G., Hoogerland, M.D.*, Buckman, S.J. and Baldwin, K.G.H. — *Atom Optics and Single-Mode Fibres*

The 2001 Workshop on Laser Physics and Quantum Optics, Wyoming, USA, 28 July–2 August

Sellars, M.J. — *Quantum Computing with Rare Earth Doped Crystals*

Manson, N.B. — *Nitrogen-Vacancy Centre in Diamond and its Suitability for Quantum Computing*

SPIE Annual Meeting, San Diego, USA, 29 July–3 August

Samoc, M., Humphrey, M.G., Cifuentes, M.P., McDonagh, A.M., Powell, C.E., Heath, G.A. and Luther-Davies, B. — *Third-order Optical Nonlinearities of Organometallics: Influence of Dendritic Geometry on the Nonlinear Properties and Electrochromic Switching of Nonlinear Absorption*

International Conference on Photo-Active Organics and Polymers (ICPOP), Cheju Island, Korea, 19–24 August

Samoc, M., Samoc, A., Luther-Davies, B., Humphrey, M.G. and Wong, M.S.* — *Third-order Optical Nonlinearities of Oligomers, Dendrimers and Polymers derived from Solution Z-scan Studies*

International Laser Science Conference (ILS) XVII, Long Beach, USA, 14–18 October

Dall, R.G., Hoogerland, M.D.*, Buckman, S.J. and Baldwin, K.G.H. — *Guiding Metastable Helium Atoms through Hollow Optical Fibres*

Nuclear Physics

Symposium on Critical Issues in Nuclear Dynamics (ACS National Meeting), San Diego, USA, 1–5 April

Hinde, D.J., Berriman, A.C., Butt, R.D., Dasgupta, M., Morton, C.R., Mukherjee, A. and Newton J.O. — *Heavy Ion Fusion and Fission: Determined Dominantly by Dynamics?*

3rd Biennial Nuclear Structure Workshop; Physics Near the Coulomb Barrier, Yale University, USA, 14–16 June

Dracoulis, G.D. — *Isomers and Shape Co-existence in the Light Pb Isotopes*

Stuchbery, A.E. — *Electromagnetic Moments in Transitional Nuclei from Mass 80 to Mass 180*

International Nuclear Physics Conference, Berkeley, USA, 30 July–3 August

Berriman, A.C., Hinde, D.J., Butt, R.D., Dasgupta, M., Morton, C.R., Mukherjee, A. and Newton, J.O. — *Inhibition of Fusion in Mass-asymmetric Collision*

Nuclear Structure 2001, East Lansing, USA, 15–19 August

Lane, G.J., Broda, R.*, Fornal, B.*, Byrne, A.P., Dracoulis, G.D., Blomqvist, J.*, Clark, R.M.*, Cromaz, M.*, Deleplanque, M.A.*, Diamond, R.M.*, Fallon, P.*, Janssens, R.V.F.*, Lee, I.Y.*, Macchiavelli, A.O.*, Maier, K.H.*, Rejmund, M.*, Stephens, F.S.*, Svensson, C.E.*, Vetter, K.*, Ward, D.*, Wiedenhöver, I.* and Wrzesinski, J.* — *Structure of Exotic Nuclei near and above ²⁰⁸Pb Populated via Deep-Inelastic Collisions*

XXIV Brazilian Workshop on Nuclear Physics, Águas de Lindóia, Brazil, 1–5 September

Dasgupta, M. — *Near-barrier Fusion: New Probe, Results and Applications*

The 10th Workshop on RF Superconductivity, Tsukuba, Japan, 6–11 September

Lobanov, N.R., Weisser, D.C., Kibédi T., et al. — *Superconducting RF Activities at ANU*

The 2nd International Symposium on Advanced Science Research: Advances in Heavy Element Research, JAERI, Tokai, Japan, 13–15 November

Hinde, D.J., Berriman, A.C., Butt, R.D., Dasgupta, M., Gontchar, I.I., Morton, C.R., Mukherjee, A. and Newton J.O. — *Role of Entrance Channel Dynamics in Heavy Element Synthesis*

Nuclear Science Colloquium, Michigan State University, USA, 5 December

Dracoulis, G.D. — *Isomers and Shape Co-existence*

Scientific FWO Research Network – Nuclear Physics under Extreme Conditions: Exotic Nuclei and Nuclear Astrophysics, University of Gent, Belgium, 10–12 December

Dracoulis, G.D. — *Importance of Non-yrast Structures in Elucidating Nuclear Structure*

Optical Sciences Centre

Optical Soliton Workshop, University of Central Florida, USA, 22–24 March

Akhmediev, N. — *Solitons in Cavities*

Workshop on **The Legacy of IST in Nonlinear Wave Propagation**, Mount Holyoke College, USA, 17–21 June

Akhmediev, N. — *Multi-Soliton Complexes*

Plasma Research Laboratory

Transport Task Force Meeting, Fairbanks, Alaska, 16–19 May

Shats, M.G. — *Non-ambipolarity of Fluctuation-driven Transport and its Effect on Plasma Confinement*

15th International Symposium on Plasma Chemistry, Industrial Workshop, Orleans, France, 7 July

Boswell, R.W. — *Communication Systems and the Role of Plasma Processing*

Charles, C. — *The Role of Ions in SiO₂ Deposition with Pulsed and Continuous Helicon Plasmas*

Thomann, A.L.*, Rozenbaum, J.P.*, Brault, P.*, Andreezza, C.*, Andreezza, P.*, Rousseau, B.*, Estrade-Szwarckopf, H.*, Berthet, A.*, Bertolini, J.C.*, Cadete Santos Aires, F.J.*, Monnet, F.*, Mirodatos, C.*, Charles, C. and Boswell, R.W. — *Plasma Synthesis of Catalytic Thin Films*

Apple Users Consortium, Academic and Developers Conference, Townsville, 23–26 September

Boswell, R.W. and Gardner, H. — *The Wedge Virtual Reality Theatre*

43rd American Physical Society, Division of Plasma Physics, Mini-Conference on Helicon Plasma Sources, Long Beach, USA, 29 October–2 November

Boswell, R.W. — *A Perspective on Current Helicon Source Science Issues*

Shats, M.G. — *Turbulence, Transport and Electric Field Studies on the H-1 Helica*

International Symposium on Photonics and Applications, Singapore, 26–30 November

Boswell, R.W. — *Fabrication of Planar Waveguides using PECVD/RIE*

Theoretical Physics

International Conference on Science and Technology of Nanostructured Materials, Puri, India, 4–8 January

Das, M.P. — *Shot Noise in Fractional Quantum Hall Systems*

Mathematical Physics Odyssey 2001, Hayashibara Foundation, Okayama and the Research Institute for the Mathematical Sciences, Kyoto, Japan, 19–23 February

Baxter, R.J. — *Dichromatic Polynomials and Potts Models Summed over Rooted Maps*

Baxter Meeting on Integrable Models in Statistical Mechanics, University of York, UK, 19 April

Baxter, R.J. — *Solvable Lattice Models and the Chiral Potts Model*

Australian Workshop on Nanotubes and Fullerenes, Canberra, 3–4 May

Kun, S.Yu., Vagov, A.V. and Greiner, W. — *Quantum-Classical Transition and Critical Phenomena in Fullerene Collisions*

International Symposium on Non-Equilibrium and Non-Linear Dynamics in Finite Systems, Beijing, China, 22–25 May

Kun, S.Yu. — *Quantum Chaos and Critical Phenomena in Finite Non-Equilibrium Systems*

International Centre for Theoretical Physics, Trieste, Italy, 9 July

Das, M.P. — *Noise and Fractional Charges*

Sixth International Workshop on Interrelationship between Plasma Experiments in Laboratory and Space (IPELS2001), Niseko, Hokkaido, Japan, 2–6 July

Dewar, R.L. and Ball, R. — *Symmetry and Singularities in Low-Dimensional Dynamical Models of Complex Systems*

2nd University of Queensland Mathematical Physics Workshop, Coolangatta, 5–8 July

Baxter, R.J. — *Invariants in the Star-Triangle Relation*

Photonic, Electronic and Atomic Collisions (XXII ICPEAC), Santa Fe, USA 18–24 July

Kheifets, A.S. — *Close-Coupling Calculations of Two-Electron Atomic Ionization by Photon and Electron Impact*

Dynamics, Excitations and Magnetism Workshop, ANSTO, Sydney, 27–28 August

Das, M.P. — *Dynamics, Excitations and Magnetism*

Second International Summer School on Strongly Correlated Systems, Debrecen, Hungary, 4–9 September

Gulacsi, M. — *Luttinger Liquid Properties at Finite Temperatures*

25th Annual Conference of the Australian Society for Biophysics, Katoomba, 5–7 September

Chung, S.H. and Kuyucak, S. — *Conducting-state Properties of the Potassium Channel: Molecular and Brownian Dynamics Simulations*

Werner Heisenberg 100 Years, Bamberg, Germany, 26–30 September

Hall, M.J.W. — *Schrödinger Equation from an Exact Uncertainty Principle*