

## Appendix – Collaborations

**Professor N. Akhmediev**

**Project:** Numerical Modelling of Dissipative Systems.

**Partner:** Dr J.M. Soto-Crespo, Instituto de Óptica, CSIC, Madrid, Spain

**Project:** Optical Bullets in Dissipative Systems.

**Partner:** Dr Ph. Grelu, Laboratoire de Physique de l'Université de Bourgogne, Dijon, France

**Project:** Multicomponent Nonlinear Schrödinger Equation with Mixed Nonlinearities

**Partner:** Dr T. Kanna, Bharathidasan University Tiruchirapalli, Tamil, India

**Project:** Method of Moments in Dissipative Systems

**Partner:** Dr E. Tsoy, Senior Research Fellow, Physical-Technical Institute of the Uzbek Academy of Sciences, Tashkent, Uzbekistan

**Dr C.H. Arns**

**Project:** Multi-Dimensional NMR Inverse Laplace Spectroscopy

**Partner:** Professor P.T. Callaghan, Victoria University of Wellington, New Zealand

**Project:** Transport Properties from Nuclear Magnetic Resonance

**Partner:** Professor P.T. Callaghan, Victoria University of Wellington, New Zealand

**Project:** Second-Order Analysis for Curvature Measures

**Partners:** Professors D. Stoyan, TU Bergakademie Freiberg, Germany and K.R. Mecke, University of Erlangen-Nürnberg, Germany

**Project:** Elastic Properties of Partially Saturated Rocks

**Partner:** Professor B. Gurevich, Curtin University of Technology

**Project:** Lattice Boltzmann Techniques for Unresolved Porosity

**Partner:** Dr N. Marty, National Institute of Standards and Technology, United States

**Project:** Effective Medium Theories from Minkowski Functionals

**Partner:** Professor K.R. Mecke, University of Erlangen-Nürnberg, Germany

**Project:** Dispersive Flow in Porous Media

**Partners:** Professor P.M. Adler, Institut de Physique de Globe de Paris, France and Dr M. Close, Environmental Science & Research, New Zealand

**Dr T. Aste**

**Project:** Glasses and Granular Materials

**Partners:** Professor A. Coniglio and Dr M. Nicodemi, University of Naples, Italy

**Project:** Disordered Packings in Heterogeneous Colloids

**Partners:** Professor L. Gauckler and Dr F. Filser, ETH Zurich, Switzerland

**Dr T. Aste and Dr T. Di Matteo**

**Project:** Statistical Mechanics Approaches in the Study of Density Fluctuations in Granular Materials

**Partners:** Professor H. Swinney and Dr M. Schroeter, University of Texas at Austin, United States

**Mr N. Balcon**

**Project:** Cotutelle Thesis

**Partner:** University Paul Sabatier Toulouse, France

**Mr N. Balcon and Professor R. Boswell**

**Project:** Dielectric Barrier Discharges

**Partners:** Drs J.P. Boeuf and G. Hagelaar, University Paul Sabatier Toulouse, France

**Dr K.G.H. Baldwin**

**Project:** Ultrahigh Resolution OPO Laser Sources

**Partner:** Professor B. Orr, Macquarie University

**Dr K.G.H. Baldwin and Professor B.R. Lewis**

**Project:** High Resolution XUV Laser Spectroscopy of Isotopic Nitrogen

**Partner:** Professor W. Ubachs, Vrije Universiteit, Amsterdam, Netherlands

**Dr R. Ball**

**Project:** A Distilled Turbulence Refinery

**Partner:** Professor C. Tebaldi, Politecnico di Torino, Italy

**Project:** Bifurcations in the Magnetosphere

**Partner:** Professor W. Horton, University of Texas Austin, United States

**Mr S. Barik, Drs L. Fu and H. H. Tan, Professor C. Jagadish**

**Project:** Modelling of Semiconductor Quantum Dots

**Partners:** Professor P. Harrison and Mr N. Vukmirovic, University of Leeds, United Kingdom

**Dr T.T. Barrows**

**Project:** Glacier History of New Zealand

**Partners:** Dr P. Almond, Lincoln University, New Zealand, Dr R. Rose, University of Canterbury, New Zealand

**Project:** Glacier History of Mt Giluwe, Papua New Guinea

**Partners:** Dr M. Prentice, University of New Hampshire, Professor G. Hope, Australian National University

**Project:** Glacier History of Luthers Pass, Sierra Nevada, United States  
**Partner:** Dr D. Clark, Western Washington University, United States

**Project:** Exposure Dating of Wolfe Creek Crater, Northern Territory  
**Partners:** Professor G. Miller, University of Colorado and Dr J. Magee, Australian National University

**Project:** Long Term Climate Change from Deep-Sea Sediments  
**Partners:** Professor P. De Deckker, Mr M. Spooner, Australian National University and Dr S. Juggins, University of Newcastle, United Kingdom

**Professor M.T. Batchelor and Dr X.W. Guan**

**Project:** Quantum Spin Ladders  
**Partners:** Drs N. Oelkers, University of Queensland and Z. Tsuboi, Okayama Institute for Quantum Physics, Japan

**Professors M.T. Batchelor and V. Bazhanov, Drs X.W. Guan and M. Bortz**

**Project:** Quantum Gases  
**Partners:** Dr J. Links and Dr N. Oelkers, University of Queensland

**Project:** Stromatolite Growth

**Partners:** Dr R. Burne Australian National University, A/Professor B. Henry, University of New South Wales and Dr J. Kaandorp, Vrije Universiteit Amsterdam, The Netherlands

**Dr B. Blackwell**

**Project:** Data mining and Analysis of MHD fluctuations in Heliotron-J  
**Partner:** Dr K. Nagasaki, Kyoto University, Japan

**Dr G. Borg**

**Project:** Collaboration with Standard Communications on ARC Grant and Application for Scientific License for Radio Emission  
**Partners:** Messrs Z. Zhao, D. Dries, G. Long and J. Leong

**Professor R. Boswell**

**Project:** Plasma Ionization through Wave-particle Interaction in a Capacitively Coupled Radio-Frequency Discharge  
**Partners:** Professor U. Czarnetzki, Drs D. O'Connell and T. Gans, Ruhr-University Bochum, Germany

**Project:** Development of a High-Brightness Source for Focused Ion Beam Applications  
**Partner:** FEI Company, United States

**Professor R. Boswell and Dr C. Charles**

**Project:** Low Temperature Fuel Cells  
**Partner:** Dr Pascal Brault, GREMI, Université d'Orléans, France

**Project:** Double Layers in the Solar Corona

**Partner:** Professor E. Marsch, Max Planck Institute, Lindau, Germany

**Project:** Helicon Double Layer Thruster

**Partners:** Auspace, Astrium, European Space Agency

**Professor P. Bouwknegt**

**Project:** Mathematical Foundations of String Theory, in Particular the Study of Symmetries (Dualities) and Underlying Generalizations of Geometry. Gerbes. Twisted K-Theory

**Partners:** Professor V. Mathai, University of Adelaide, Drs K. Hannabuss, Oxford University, H. Sati, Yale University, A. Flournoy, Australian National University, J. Evslin, University of Brussels, B. Jurco, University of Munich and Professors K. Pilch, University of Southern California and I. Grojnowski, University of Cambridge

**Professor A.P. Byrne**

**Project:** Ion Implanter for Radioisotopes

**Partner:** Dr H. Timmers, ADFA, University of New South Wales

**Project:** Superallowed Fermi decays

**Partner:** A/Professor P.H. Barker, University of Auckland, New Zealand

**Professor A.P. Byrne and Dr M.C. Ridgway**

**Project:** PAC Studies of Materials

**Partner:** Dr R. Vianden, ISKP, Universitaet Bonn, Germany

**Project:** Materials Modification by Swift Heavy Ion Irradiation

**Partner:** Professor W. Wesch, University of Jena, Germany

**Mr A. Caillard**

**Project:** CoTutelle Thesis

**Partner:** Université de Orleans, France

**Dr C. Charles and Professor R. Boswell**

**Project :** Theory for Formation of Current-Free Double Layer

**Partner:** Professor M. Lieberman, University of California, United States

**Project:** Laser Induced Fluorescence Measurements of Helicon Double Layers

**Partner:** Professor E. Scime, University of West Virginia, United States

**Project:** Trapped and Free Electrons in a Current Free Double Layer

**Partner:** Professor K. Takahashi, Tohoku University, Japan

**Project:** Astrophysical Double Layers

**Partner:** Professor A. Fredriksen, University of Tromso, Norway

**Dr C. Charles, Dr A. Caillard, and Professor R. Boswell**

**Project:** Diagnostics of Fuel Cell Electrodes Based on Carbon Nanofibers

**Partner:** A/Professor Craig Buckley, Curtin University

**Dr Y. Chen and Mr A. Glushenkov**

**Project:** Synthesis and Properties of ZnO and VO Nanowires

**Partner:** Professor Max Lu, University of Queensland

**Project:** Computer Simulation of High-Energy Ball Milling

**Partner:** Professor A. Yu, University of New South Wales

**Dr Y. Chen, Ms J. Yu and Mr H. Chen**

**Project:** Photoluminescence Spectroscopy of BN Nanotubes Using VUV Synchrotron Source

**Partners:** Drs D. Yu, ANSTO and B. Zheng, National Synchrotron Research Centre, Taiwan

**Dr Y. Chen, Mr H. Chen, Ms J. Yu**

**Project:** Raman Spectroscopy of Single BN Nanotubes

**Partner:** Professors Z. Chen and S. Shen, Fudan University, China

**Drs Y. Chen, Y.J. Chen and L. Fu**

**Project:** Doping BN Nanotubes for Controlled Electric Conductivities

**Partner:** Professor W. Duan, Tsinghua University, China

**Drs Y. Chen, H. Zhang and Mr H. Chen**

**Project:** Field Emission of BN Nanorods and Nanotubes

**Partner:** Professor D. Yu, Beijing University, China

**Dr Y. Chen, Y.J. Chen, Mr H. Chen and Ms J. Yu**

**Project:** Microanalysis of BN Nanotubes and Nanowires

**Partners:** Professor S. Ringer and Dr Z. Liu, University of Sydney

**Drs Y. Chen, Y.J. Chen, Ms J. Yu and Dr B. Li**

**Project:** TEM Investigation of Nanowires and Nanotubes

**Partner:** Dr J. Zou, University of Queensland

**Ms V. Coleman, P. Lever, K. Stewart, Mr S. Barik, Dr H.H. Tan, Professor J.S. Williams and Professor C. Jagadish**

**Project:** Cathodoluminescence Studies of Semiconductor Epitaxial Layers and Quantum Structures

**Partner:** Professor M.R. Philips, University of Technology, Sydney

**Ms V. Coleman, Drs H.H. Tan and S.O. Kucheyev, Professors J.S. Williams and C. Jagadish**

**Project:** Ion Beam Processing of Zinc Oxide

**Partners:** Professors M. Yano and M. Inoue, Osaka Institute of Technology, Japan

**Dr C. Corr**

**Project :** Double Layers in Electronegative Plasmas

**Partners :** Drs P. Chabert, Ecole Polytechnique, France and N. Plihon, CNRS, France

**Dr V. Craig**

**Project:** Nanobubbles

**Partners:** Professor H. Jun, Shanghai Institute of Applied Physics, China and Dr Z. Wu, Nanchang University, China

**Project:** Boundary Slip

**Partner:** Dr W. Ducker, University of Melbourne

**Drs V. Craig and C. Neto**

**Project:** A Model for Boundary Slip in Newtonian Liquids

**Partner:** Dr J. Sader, University of Melbourne

**Dr T. Dall**

**Project:** Heavy Ion Stopping in Solids

**Partners:** Professor H.J. Whitlow, Drs K. Stenstrom, University of Lund, Sweden and H. Timmers, University of New South Wales, Mr S. Shrestha, University of New South Wales and A/Professor D.J. O'Connor, The University of Newcastle

**Dr T. Di Matteo**

**Project:** Study of the Income Distributions

**Partner:** Professor V.M. Yakovenko, University of Maryland, United States

**Drs T. Di Matteo and T. Aste**

**Project:** Characterization of Collective Dynamics in Financial Markets and Complex Systems

**Partner:** Professor R. Mantegna, University of Palermo, Italy

**Project:** High-frequency Dynamics of Financial Markets (FISR) (funded by the Italian Ministry of Education Research and Technology)

**Partner:** Dr E. Scalas, University of Piemonte Orientale, Italy

**Project:** Relationships between the Structure of Social Networks and Productivity

**Partner:** Professor M. Gallegati, Universita Politecnica delle Marche, Italy

**Project:** Multiscaling Behaviours in Financial Markets

**Partner:** Dr M.M. Dacorogna, Converium Ltd Zurich, Switzerland

**Drs T. Di Matteo and T. Aste and Professor S.T. Hyde**

**Project:** European Union (EU) Project - COST P10 "Physics of Risk"

**Partner:** Professor P. Richmond, Trinity College, Ireland

**Dr M. Dasgupta**

**Project:** Investigation of the Nuclear Potential through Quasi-elastic Scattering

**Partners:** Drs K. Hagino and K. Washiyama, Tohoku University, Japan

**Dr M. Dasgupta, Professor D.J. Hinde and Dr L.R. Gasques**

**Project:** Quasi-Elastic Scattering of Sulphur at Sub-Barrier Energies

**Partners:** Professor P.R.S. Gomes, Dr R. Meigikos, Universidade Federal Fluminense, Niterio, Brazil

**Dr M. Dasgupta and Professor D.J. Hinde**

**Project:** Reaching the Superheavy Elements

**Partners:** Drs J.F. Liang, Oak Ridge National Laboratory, United States and K.H. Schmidt, GSI, Darmstadt, Germany

**Professor R.L. Dewar and Dr M.J. Hole**

**Project:** Existence and Stability of a Model for Three-dimensional Toroidal Plasma Equilibria

**Partner:** Dr S.R. Hudson, Princeton University, United States

**Professor R.L. Dewar and Dr B.G. Kenny**

**Project:** Quantum Chaos in the Ideal-MHD Spectrum for Stellarators

**Partners:** Drs C. Nührenberg, Max Planck Institute for Plasma Physics, Germany and T. Tatsuno, University of Maryland, United States

**Professor R.L. Dewar, Dr R. Ball and Professor M.T. Batchelor**

**Project:** ARC Research Network – Complex Open Systems Network (COSNet)

**Partners:** Professors C. Grebogi, University of Aberdeen, United Kingdom, R. MacKay, FRS, University of Warwick, United Kingdom and 42 participants from the Australian National University and other Australian universities

**Professor R.L. Dewar, Drs R. Ball, R. Numata, J.S. Frederiksen and Messrs R.F Abdullatif and M. Zidikheri**

**Project:** Studies of Turbulence and Coherent Structures in Quasi Two-dimensional Plasmas and Fluids

**Partners:** Dr B.D. Scott, Max Planck Institute for Plasma Physics, Germany, Professor C. Tebaldi, Politecnico di Torino, Turin, Italy and Dr E.R. Solano, Laboratorio Nacional de Fusion (CIEMAT), Madrid, Spain

**Dr A. Diaz-Torres**

**Project:** Coupled-Channels Effects in Near-Barrier Fusion and Elastic Scattering of Weakly Bound and Halo Light Nuclei

**Partners:** Drs C. Beck, University Louis Pasteur, Strasbourg, France and N. Keeley, Saclay, Gif-sur-Yvette, France

**Project:** Modeling Breakup and Fusion of Weakly Bound Nuclei

**Partner:** Dr J. A. Tostevin, University of Surrey, United Kingdom

**Professor G.D. Dracoulis**

**Project:** High-K Isomers

**Partners:** Professor P.M. Walker, University of Surrey, United Kingdom, Dr F.G. Kondev, Argonne National Laboratory, United States

**Project:** High-K Isomers in Deformed Nuclei near Stability

**Partners:** Drs F.G. Kondev and R. Janssens, Argonne National Laboratory, United States

**Project:** Laser Spectroscopy of Deformed Isomers

**Partners:** Dr J. Billowes, University of Manchester, United Kingdom, Professor J.A.R. Griffith, University of Birmingham, United Kingdom, and Dr P. Dendooven, University of Jyväskylä, Finland

**Professor G.D. Dracoulis, Drs A.P. Byrne and G.J. Lane**

**Project:** Realistic Shell Model Calculations for Trans-Lead Nuclei

**Partner:** Professor A. Covello, University of Naples, Italy

**Project:** Neutron Rich Trans-lead Nuclei Using Radioactive Beams

**Partners:** Professors P.M. Walker, University of Surrey, United Kingdom and G. de France, GANIL, Caen, France

**Professor G.D. Dracoulis and Dr T. Kibédi**

**Project:** Nuclear Structure in the  $N = 74$  Region

**Partner:** Dr A.M. Bruce, University of Brighton, United Kingdom

**Project:** Isomers in Sb Nuclei

**Partner:** Dr D. Judson and Professor A. Bruce, University of Brighton, United Kingdom

**Professor G.D. Dracoulis and Dr G.J. Lane**

**Project:** Structure of Deformed Odd-odd Nuclei

**Partners:** Drs C. Günther, University of Bonn, Germany and F.G. Kondev, Argonne National Laboratory, United States

**Professor G.D. Dracoulis, Dr G.J. Lane, Dr A.P. Byrne and Dr T. Kibédi**

**Project:** Shape Co-Existence in Very Neutron-deficient Pb Nuclei

**Partners:** Drs J. Gerl, GST, Germany and A. Andreyev, University of Liverpool, United Kingdom

**Project:** Residual Interactions in the Pb-region

**Partner:** Professor K.H. Maier, Niewodniczanski, Institute of Nuclear Physics, Poland

**Professor R.G. Elliman**

**Project:** Semiconductor Nanocrystal Memory Devices

**Partner:** Dr S.H. Choi, Kyung Hee University, Korea

**Project:** The Synthesis and Properties of Nickel Silicide Nanocrystals

**Partner:** Professor J.H. Yoon, Kangwon National University, Korea

**Project:** Mechanical Properties of Silicon Nanostructures

**Partners:** Mr K.R. Virwani and Professor A.P. Malshe, University of Arkansas, United States, Professor D.K. Sood, Royal Melbourne Institute of Technology

**Project:** Silicon Based Photonic Devices and Structures

**Partner:** Professors J. Linnros, Royal Institute of Technology, Kista-Stockholm, Sweden and Drs J. Valenta and I. Pelant, Charles University, Prague, Czech Republic and Professor E. Krausz, Australian National University

**Project:** Biomedical Applications of Silicon Dioxide Nanowires

**Partners:** A/Professor S. Bhansali, University of South Florida, United States and Dr D.K. Sood, Royal Melbourne Institute of Technology

**Project:** Ion Implantation Defects in Group IV Semiconductors

**Partner:** Professor K. Jones, Ms D. Hickey and Ms L. Edelman, University of Florida, United States

**Professor L.K. Fifield and AMS Group**

**Project:** Dating of Marine Cores with Carbon-14

**Partners:** Drs P. De Deckker and B. Opdyke, Department of Earth and Marine Sciences

**Project:** Measurement of erosion rates at a range of scales in the Australian landscape using in situ produced  $^{10}\text{Be}$

**Partner:** Professor J. Chappell, Research School of Earth Sciences

**Project:** Landscape Evolution in the Southern Highlands Region of NSW, Using  $^{10}\text{Be}$  Deposited from the Atmosphere

**Partner:** Professor R. Wasson, Centre for Resource and Environmental Studies

**Project:** Studies of Meteorites Using Cosmogenic Isotopes

**Partner:** Professor G. Herzog, Rutgers University, United States

**Project:** Dating of Ice in Temperate-Region and Polar Glaciers with  $^{32}\text{Si}$

**Partners:** Ds U. Morgenstern and A. Zondervan, Geological and Nuclear Sciences, Lower Hutt, New Zealand

**Project:** Tracing Releases of Plutonium from Nuclear Processing Plants in Russia

**Partners:** Professor D. Oughton and Drs L. Skipperud, O. Lind, Norwegian University of Life Sciences, Norway and W. Standring, Norwegian Radiation Protection Authority, Norway

**Project:** Tracing of Groundwater Flow and Mixing in a Number of Australian Aquifer Systems

**Partners:** Drs R. Habermehl, J. Kellett, Bureau of Rural Sciences and R.G. Cresswell, CSIRO

**Project:** Tracing of Groundwater Flow in a Natural Analogue of a Nuclear Waste Repository Using  $^{36}\text{Cl}$

**Partners:** Drs Y. Mahara, Abiko Research Laboratory, Japan and R. Habermehl, Bureau of Rural Sciences, Dr R.G. Cresswell, CSIRO

**Project:** Exposure Dating of Glacial Landforms in Scotland, and lava Flows in Hawaii

**Partners:** Professors J. Stone, University of Washington, United States and C. Ballantyne, University of St. Andrews, United Kingdom

**Project:** Calibration of the Cosmic-Ray Production of Chlorine-36 on Iron in Surface Rocks

**Partner:** Professor J. Stone, University of Washington, United States

**Project:** Plutonium as a Tracer of Soil Movement

**Partner:** Dr G. Hancock, P.Wallbrink, R.Bartley CSIRO Land and Water

**Project:** Plutonium Measurements by AMS at Low Energy

**Partner:** Dr L. Wacker, ETH Zurich, Switzerland

**Project:** S.E. Australian Coastal Rock Platforms – When and How Were They Formed?

**Partner:** Professor J. Stone, Washington State University, United States

**Mr R. Fischer**

**Project:** Few-Cycle Pulses (pulse compression) and Non Phase-Matched Third-Harmonic-Generation in Highly Nonlinear Fibres

**Partner:** Professor John Dudley, Université de Franche-Comté, Besançon, France

**Professor N. Fletcher**

**Project:** The Acoustics of the Didjeridu

**Partners:** A/Professor L. Hollenberg, Melbourne University and Professors J. Wolfe and J. Smith, University of New South Wales

**Project:** Acoustics of Birdsong

**Partners:** Professor R.A. Suthers, Indiana University, United States, Drs T. Riede, Humboldt University, Germany and G.J.L. Beckers, Leiden University, Netherlands

**Project:** Flute Acoustics

**Partner:** Mr T. McGee, Australian Flutemaker, Canberra

**Dr A. Fogden**

**Project:** Superhydrophobic Coatings

**Partners:** Drs J. Vyörykkä and R. Corkery, Institute for Surface Chemistry, Sweden

**Project:** Acoustics of Offset Printing

**Partners:** Drs J. Voltaire, Institute for Surface Chemistry, Sweden and W. Batchelor, Monash University

**Mr M. Fraser, Drs M. Gao, L. Fu, H.H. Tan and Professor C. Jagadish**

**Project:** THz Spectroscopy of Compound Semiconductors

**Partners:** Drs M. Johnston and L. Hertz, Oxford University, United Kingdom

**Dr L. Fu, Mr S. Barik, Dr H.H. Tan and Professor C. Jagadish**

**Project:** Analysis of Semiconductor and Insulating Thin Films by XPS

**Partners:** Dr B. Gong and Professor R. Lamb, University of New South Wales

**Professor E.G. Gamaly**

**Project:** Ultra-high Density Permanent and/or Erasable Optical Memory in Photorefractive Media Formed by Ultrafast Laser Pulses

**Partners:** Professors H. Misawa and S. Juodkazis, Hokkaido University, Sapporo, Japan and Dr O. Louchev, RIEKEN, Tokyo, Japan

**Project:** Formation of Novel Super-dense Materials by Femtosecond-laser-created Micro-explosion Inside the Bulk of Transparent Materials

**Partners:** Professors H. Misawa, S. Juodkazis, Hokkaido University, Sapporo, Japan and D. Gomberg, National Institute for Materials Science, Tsukuba, Japan

**Project:** Characterization and Analysis of Ultrashort Laser-matter Interaction at Low and Medium Laser Intensities

**Partners:** Laboratoire d'Optique Appliquée, Palaiseau, France, Centre Lasers Intenses et Applications, Bordeaux, France, The Lasers, Plasmas, and Photonic Processes Laboratory, University Aix Marseille-II, Marseille, France

**Professor E.G. Gamaly and Dr A.V. Rode**

**Project:** Formation of Novel Super-Dense Materials by Femtosecond Laser-Created Microexplosion

**Partners:** Professor H. Misawa and Dr S. Joudkazis, University of Hokkaido, Japan, Professor V.T. Tikhonchuk and Dr L. Hallo, University of Bordeaux 1, France

**Professor E.G. Gamaly, Dr A.V. Rode and Professor B. Luther-Davies**

**Project:** Ultrafast Laser Excitation of Coherent Phonons

**Partners:** Drs D. Boschetto and A. Rousse, Ecole Polytechnique, Palaiseau, France

**Dr L.R. Gasques**

**Project:** Development of a Model of Fusion Using the Universal São Paulo Potential

**Partner:** Dr L. C. Chamon, University of São Paulo, Brazil

**Project:** Calculations of Reaction Rates of Astrophysical Interest

**Partner:** Dr M. Wiescher, University of Notre Dame, United States

**Dr S.T. Gibson and Professor B.R. Lewis**

**Project:** (NASA) Photoabsorption Cross Sections in the Ultraviolet for Planetary Atmospheres Applications

**Partners:** Professor G. Stark, Wellesley College, United States, Dr P.L. Smith, Harvard-Smithsonian Center for Astrophysics, United States

**Project:** Measurements of Thermospheric Molecular Oxygen

**Partner:** Dr J.D. Lumpe, Computational Physics Inc. Boulder, United States

**Project:** Remote Sensing of the Thermosphere

**Partner:** Professor R.R. Meier, George Washington State University, United States

**Drs S.T. Gibson and S.J. Cavanagh, Professor B.R. Lewis and Dr F.P. Mills**

**Project:** (ACCESS) Australian Centre for Enabling Molecular Sciences

**Partners:** Drs M. Buntine, J. Gascooke, G. Metha, University of Adelaide, M. Collins, Australian National University, M. Brunger and W. Lawrance, Flinders University, E. Bieske and R. O'Hair University of Melbourne, D. McNaughton and E. Robertson, Monash University, P. Gill, M. Jordan and S. Kable, Professor L. Radom and Dr T. Schmidt, University of Sydney, Dr B. Yates, University of Tasmania

**Professor D.J. Hinde and Dr M. Dasgupta**

**Project:** Double Folding Model Calculation of Nuclear Potentials

**Partner:** Dr I.I. Gontchar, Omsk State University, Russia

**Project:** Breakup and Fusion of Stable Weakly-Bound Nuclei

**Partners:** Professor J.A. Tostevin, University of Surrey, United Kingdom, Drs M. Freer, University of Birmingham, United Kingdom and K. Hagino, Tohoku University, Sendai, Japan

**Professor D.J. Hinde, Drs M. Dasgupta and L.R. Gasques**

**Project:** Complete and Incomplete Fusion of Boron Isotopes

**Partner:** Dr A. Mukherjee, Saha Institute of Nuclear Physics, Calcutta, India

**Professor D.J. Hinde, Dr M. Dasgupta and Professor J.O. Newton**

**Project:** Fusion and Scattering in C+Pb Reactions

**Partner:** Drs A. Mukherjee, Saha Institute of Nuclear Physics, Calcutta, India, K. Hagino, Tohoku University, Sendai, Japan

**Professor D.J. Hinde, Drs M. Dasgupta and R.G. Thomas**

**Project:** Fusion with Radioactive  $^{14}\text{O}$

**Partner:** Professor S. Kubono, University of Tokyo, Japan

**Dr M.J. Hole**

**Project:** Compressional Alfvén Eigenmodes in MAST

**Partner:** Dr L.C. Appel, United Kingdom Atomic Energy Authority Fusion Division, United Kingdom

**Dr J. Howard**

**Project:** Installation of Coherence Imaging System

**Partner:** University of Sydney

**Project:** Microwave Tomography of Human Tissue  
**Partner:** Professor M. Persson, Chalmers University, Sweden

**Project:** Optical Coherence Imaging for Thomson Scattering  
**Partner:** Dr T. Hatae, Japan Atomic Energy Agency, Japan

**Project:** Optical Imaging Systems for Thermography and Slag/Iron Discrimination at a Molten Iron Furnace  
**Partners:** Mr B. Scott and Dr R. Nightingale, Bluescope Steel Limited, Port Kembla

**Project:** Coherence Imaging Studies of the Hanbit Mirror and KSTAR Tokamak  
**Partner:** Dr J. Chung, Korean National Fusion Research Center

**Professor J. Howard, Drs M. Shats and B. Blackwell**

**Project:** Development of Diagnostic Imaging Systems for the Sydney University High Current Pulsed Arc  
**Partners:** Professor M. Bilek, Drs R. Tarrant and G. Warr and Professor D. Mackenzie, University of Sydney

**Ms H. J. Joyce, Drs Y. Kim, Q. Gao, H. H. Tan and Professor C. Jagadish**

**Project:** Electron Microscopy Studies of III-V Nanowires  
**Partner:** A/Professor J. Zou, University of Queensland

**Professor A. Kheifets**

**Project:** Convergent Close-coupling Theory of Double Ionization by Photon and Electron Impact  
**Partner:** Dr I. Bray, Murdoch University

**Project:** Electron Impact Double Ionization of the Helium Atom  
**Partner:** Dr A. Dorn, Max-Planck Institute for Nuclear Physics, Heidelberg, Germany

**Drs T. Kibédi and P.M. Davidson**

**Project:** Theoretical Conversion Coefficients and EO Electronic Factors  
**Partners:** Drs T.W. Burrows, Brookhaven National Laboratory, United States, M.T. Trzhaskovskaya, Petersburg Nuclear Physics Institute, Gatchina, Russia, C.W. Nestor, Jr., Oak Ridge National Laboratory, United States

**Drs Y. Kim, Q. Gao, Ms H. J. Joyce, Dr H. H. Tan and Professor C. Jagadish**

**Project:** Optical Spectroscopy Studies of III-V Nanowires  
**Partners:** Professors L.M. Smith and H.E. Jackson, University of Cincinnati, United States

**Professor Y. Kivshar and Dr A. Sukhorukov**

**Project:** Stability Analysis of Solitary Waves  
**Partner:** Professor D.E. Pelinovsky, McMaster University, Canada

**Project:** Discrete Solitons in Waveguide Arrays

**Partners:** Professors R. Morandotti, University of Quebec, Canada, S. Aitchison, University of Toronto, Canada and Y. Silberberg, Weizmann Institute of Technology, Israel

**Project:** Solitons in Photonic Lattices

**Partner:** Dr M. Johansson, Chemistry and Biology, Linkopings, Sweden

**Project:** Slow Light in Photonic Crystals

**Partner:** Dr Dmitry Chigrin, University of Bonn, Germany

**Professor W. Krolikowski**

**Project:** Nonlocal Solitons

**Partners:** Professors O. Bang, Technical University of Denmark, Denmark, M.Saffman, University of Wisconsin, United States, Dr S. Skupin, University of Paris, France and Professor J. Wyller, Norway Agricultural University, Norway

**Project:** Solitons in Periodic Systems

**Partners:** Professors M. Trippenbach, Warsaw University, Poland, M. Gajda, Polish Academy of Sciences, Poland

**Dr G.J. Lane, Professors G.D. Dracoulis and A.P. Byrne**

**Project:** High-spin States and Shell Model Structure of Neutron-rich Nuclei near  $^{208}\text{Pb}$

**Partners:** Professor R. Broda, Dr B. Fornal and Professor K.-H. Maier, Niewodniczanski Institute of Nuclear Physics, Poland

**Project:** Octupole Correlations and Particle Alignments in Neutron-Rich Uranium Nuclei

**Partners:** Professor R. Broda and Drs B. Fornal, Niewodniczanski Institute of Nuclear Physics, Poland and S. Zhu, Professor R.V.F. Janssens and Drs M. Carpenter, Argonne National Laboratory, United States, A.O. Macchiavelli and D. Ward, Lawrence Berkeley National Laboratory, United States

**Project:** Limits of K-Isomerism and Astrophysical Processes in Neutron-Rich Tungsten, Rhenium and Osmium Nuclei

**Partners:** Drs F.G. Kondev and R.V.F. Janssens, Professor M.P. Carpenter, Drs T. Lauritsen, D. Seweryniak and S. Zhu, Argonne National Laboratory, United States and Professor P. Chowdhury, University of Massachusetts, Lowell, United States

**Dr C. Lee**

**Project:** Enhanced Quantum Reflection of Matter-Wave Solitons

**Partner:** Dr J. Brand, Max Planck Institute for the Physics of Complex Systems, Germany

**Drs N. Lobanov and D.C. Weisser**

**Project:** Measurement of Magnetization of PbSn Films

**Partner:** Dr A.V. Pan, University of Wollongong

**Project:** Characterization of Superconducting Films Using Neutron Scattering

**Partners:** Drs S. Danilki and M.Yethiraj, ANSTO

**Project:** Superconducting Sputtered Quarter Wave Cavities

**Partners:** Drs M. Pasinini and M. Lindroos, CERN-AB/ISOLDE, Switzerland

**Professors B. Luther-Davies and W. Krolikowski**

**Project:** Centre of Excellence for Ultrahigh Bandwidth Devices for Optical Systems

**Partners:** University of Sydney, Macquarie University, University of Technology, Sydney, Swinburne University of Technology, NSW Department of State and Regional Development, Osaka University, Japan, University of Central Florida, United States, Lucent Technologies, United States and Institut Fresnel, France

**Professor B. Luther-Davies and Dr V. Kolev**

**Project:** Laser Guide Star Using a High Power Synchronously Pumped Optical Parametric Oscillators

**Partner:** Electro Optics Systems

**Professor B. Luther-Davies and Dr S.J. Madden**

**Project:** Advanced Siloxane Waveguide Devices for Telecommunications

**Partner:** RPO, Canberra

**Mr A. Meige**

**Project:** Cotutelle Thesis

**Partner:** University Paul Sabatier Toulouse, France

**Dr F.P. Mills**

**Project:** Photochemical Modeling of the Venus Middle Atmosphere

**Partners:** Dr M. Allen, NASA Jet Propulsion Laboratory, United States and Professor Y.L. Yung, California Institute of Technology, United States

**Project:** Excited State Oxygen Chemistry in the Venus Atmosphere

**Partner:** Dr T. Slanger, SRI International, United States

**Project:** Ultraviolet Characterization and Remote Sensing of Aerosols

**Partners:** Drs A. Eldering, O. Kalashnikova, NASA Jet Propulsion Laboratory, United States, D. Anderson, B. Forgan, Bureau of Meteorology, Australia and R. Mitchell, CSIRO

**Ms S. Mokkalapati, Mr L. Lysevych, Dr H. H. Tan and Professor C. Jagadish**

**Project:** Quantum Well and Quantum Dot Lasers

**Partner:** Dr M. Buda, National Institute of Material Physics, Romania

**Dr D. Neshev**

**Project:** Optical Solitons and Vortices

**Partner:** Professor A. Dreischuh, Sofia University, Bulgaria

**Project:** Infiltrated Photonic Crystal Fibres

**Partner:** Professor O. Bang, Technical University of Denmark, Denmark

**Project:** Quasi Phase Matching

**Partner:** Professor S. Saltiel, University of Sofia, Bulgaria

**Project:** Lithium Niobate Waveguide Arrays

**Partner:** Dr A. Mitchell, RMIT

**Project:** Supercontinuum Solitons

**Partners:** Professor B. Eggleton and Mr J. Boldger, University of Sydney

**Project:** Counterpropagating Solitons in Optical Lattices

**Partner:** Professor C. Denz, University of Munster, Germany

**Project:** Pulse Compression in Highly Nonlinear Fibers

**Partner:** Dr J. Dudley, University of Besancon, France

**Dr C. Neto**

**Project:** Fingering Instabilities in Dewetting Thin Polymer Films

**Partner:** Professor K. Jacobs, Saarland University, Germany

**Project:** Immobilisation of Bacterial Cells on Micro-patterned Substrates

**Partners:** Dr R. Baker and Professor K. Matthaei, Australian National University

**Project:** Experiments on Liquid Boundary Slip in Newtonian Liquids

**Partner:** Professor R. Horn, Ian Wark Institute, Adelaide

**Dr E. Ostrovskaya**

**Project:** Nonlinear Localization of Bose-Einstein Condensates in Optical Lattices

**Partner:** Professor M. Oberthaler, University of Heidelberg, Germany

**Drs D. Powell and I. Shadrivov**

**Project:** Fabrication of Nonlinear and Tunable Metamaterials

**Partner:** Dr A. Mitchell, RMIT University, Melbourne

**Project:** Analytical Modelling of a Nonlinear Split Ring Resonator

**Partner:** Dr M. Gorkunov, University of Strathclyde, Glasgow, United Kingdom

**Mr D. Ramdutt**

**Project:** Adhesion of Proteins to Plasma Polymers Deposited in a High Density, Low Pressure, Helicon Reactor and its Application for a New Cell Array Platform

**Partner:** Professor C. dos Remedios, University of Sydney

**Mr D. Ramdutt, Dr C. Charles and Professor R. Boswell**

**Project:** Surface Diagnostics of Plasma Treated Fuel Cell Membranes

**Partner:** Professor T. Gengenback, CSIRO, Melbourne

**Messrs D. Ramdutt and A. Caillard, Dr C. Charles and Professor R. Boswell**

**Project:** Development of New Membrane Electrode Assembly

**Partners:** Drs A. Dicks and M. Liu, University of Queensland

**Dr M.C. Ridgway**

**Project:** Swift Heavy-Ion Irradiation of Bulk Semiconductors and Metallic Nanocrystals

**Partner:** Professor A.P. Byrne, Australian National University

**Project:** Amorphisation of Ternary Semiconductor Alloys

**Partner:** Professor W. Wesch, Friedrich Schiller University, Germany

**Dr B.A. Robson**

**Project:** Deuteron-Deuteron Elastic Scattering

**Partner:** Professor Z. Yu-shun, Institute of High Energy Physics, Academia Sinica, China

**Drs A. V. Rode and K. Baldwin**

**Project:** Laser Cleaning of Surface Contamination with Ultrashort Pulses

**Partner:** Dr P. Delaporte, Mediterranean University, Marseille, France

**Drs A. V. Rode, A. G. Christy and Professor B. Luther-Davies**

**Project:** Structural and Electronic Characterisation of Magnetic Carbon Nanoclusters

**Partners:** Dr D. Arcon, University of Ljubljana, Professor A. I. Veinger, Ioffe Physical-Technical Institute, St Petersburg, Russia and Dr D. McCulloch, RMIT University, Melbourne

**Mr C. Rosberg**

**Project:** Tunable Nonlinear Periodic Structures Based on Infiltrated Microstructured Optical Fibers

**Partners:** Professor O. Bang and Dr A. Bjarklev, Technical University of Denmark, Denmark

**Dr A. Samoc**

**Project:** All-Optical Poling of Polymer Films and Fibres

**Partners:** Professors J.-M. Nunzi and R. Barille of the University of Angers, France

**Project:** Nonlinear Optical Effects in Functionalized Cellulose Films

**Partner:** Professor J. Ulanski, Technical University of Lodz, Poland

**Dr T.J. Senden**

**Project:** Atomic Force Microscopy of Single Polymer Chain

**Partner:** Professor J.-M. di Meglio, Paris, France

**Project:** Evolution of Devonian Fish

**Partner:** Dr J. Long, Museum of Victoria

**Project:** Tomographic Imaging of Bee Brains

**Partner:** Professor W. Ribi, Universität für Humanwissenschaften, Liechtenstein

**Dr M.G. Shats**

**Project:** Confinement Studies in Stellarators

**Partner:** Professor K. Toi, National Institute for Fusion Science, Japan

**Project:** Non-local Transfer in Plasma Turbulence

**Partner:** Dr S. Nazarenko, Mathematics Research Centre, Warwick University, United Kingdom

**Dr A. Sheppard**

**Project:** Development of Integral-geometry Based Characterisation Tools for 3D Objects

**Partners:** Professor K. Mecke, Drs B. Breidenbach and G. Schroeder, University of Erlangen-Nürnberg, Germany

**Project:** Evaluating Different Segmentation and Image Processing Techniques for Tomographic Data Collected at the Advanced Photon Source

**Partner:** A/Professor D. Wildenschild, Oregon State University, United States

**Project:** In-situ Imaging of the 3D Root Structure of Wheat Plants in Diverse Soil Types

**Partners:** Dr J. Passioura and Mr D. Deery, CSIRO Plant Industry

**Project:** Analysis of Large 3D Phase-contrast Images of Biomaterials: Nut Shells, Timber, Bamboo and Crustacean Shells

**Partner:** Dr U. Wegst, Max Planck Institute für Metallforschung, Germany

**Project:** Tracking the Evolution of a Foam Using X-ray Microtomographic Imaging at the ESRF

**Partners:** Drs B. Breidenbach, University of Erlangen- Nürnberg, Germany, J. Lambert, Université Rennes, France and P. Cloetens, European Synchrotron Research Facility (ESRF), France

**Project:** Film Drainage in Wet Granulates: Quantitative Analysis of Tomographic Images

**Partners:** Drs M. Scheel and R. Seeman, Max Planck Institute for Dynamics and Self-Organization, Germany

**Drs A. Sheppard and V. Robins**

**Project:** 3D Image Segmentation and Shape Characterization Driven by Topological Persistence

**Partner:** Professor K. Mecke, University of Erlangen, Germany

**Dr A. Stuchbery**

**Project:** Nuclear g Factors and Structure of High-Spin Isomers in  $^{190,192,194}\text{Pt}$  and  $^{196,198}\text{Hg}$

**Partner:** Professor A.I. Levon, Institute for Nuclear Research, Kiev, Ukraine

**Project:** Nuclear Spin Polarization Following Intermediate-Energy Heavy-Ion Reactions

**Partner:** Professor P.F. Mantica and J.S. Pinter, Michigan State University, United States

**Project:** Magnetic Moments of Radioactive Beams - an Incisive Probe of Novel Structures in Neutron-rich nuclei (ARC Discovery)

**Partners:** Professors P.F. Mantica, Michigan State University, United States, N. Benczer-Koller, Rutgers University, United States

**Project:** Single-Particle and Collective Degrees of Freedom in  $^{101}\text{Zr}$  and  $^{103,105}\text{Mo}$

**Partner:** Dr R. Orlandi and Dr A.G. Smith, University of Manchester, United Kingdom

**Project:** Nuclear g-factor Measurements of the  $9/2^-$  and  $21/2^-$  Isomeric States in  $^{173}\text{Ta}$

**Partners:** Dr P. Thakur and Professor A. K. Bhati, Panjab University, India

**Drs A. Stuchbery, A. Wilson and P. Davidson**

**Project:** Perturbed Angular Correlations for Gd in Gadolinium: In-Beam Comparisons of Relative Magnetizations

**Partner:** Professor N. Benczer-Koller, Rutgers University, United States

**Project:** Probing Shell Structure and Shape Changes in Neutron-Rich Sulfur Isotopes Through Transient-Field g-Factor Measurements on Fast Radioactive Beams of  $^{38}\text{S}$  and  $^{40}\text{S}$

**Partners:** Dr A.D. Davies, Professors P.F. Mantica and B.A. Brown, Michigan State University, United States

**Project:** Onset of Deformation at N=40 in the Fe Isotopes Studied Through Excited-State g-Factor Measurements. (Approved Experiment, NSCL 06013)

**Partners:** Professors P.F. Mantica, Michigan State University, United States and N. Benczer-Koller, Rutgers University, United States

**Project:** Measurement of the Magnetic Moments of the  $2^+$  States in the Neutron-Rich Radioactive  $^{72}\text{Zn}$  and  $^{74}\text{Zn}$  using the high-velocity transient field technique. (Approved Experiment, GANIL E535)

**Partners:** Drs G. Georgiev, CSNSM, Orsay, France and A. Jungclaus, Universidad Autónoma de Madrid, Spain

**Project:** Gyromagnetic Ratios of  $4^+$  States near  $^{132}\text{Sn}$ : Further Development of the RIV Technique. (Approved Experiment, HRIBF, RIB-166)

**Partners:** Professor N. Benczer-Koller, Rutgers University, United States, Dr C. Baktash, Oak Ridge, United States, Professors C.R. Bingham, University of Tennessee, United States and N.J. Stone, University of Oxford, United Kingdom

**Dr J. Sullivan**

**Project:** Lifetime-resolved Fluorescence Spectroscopy of Inner-shell Excitation Decay Processes

**Partners:** Drs P. Hammond, University of Western Australia, Y. Azuma, M. Lebeck, Photon Factory KEK, Japan and J. Harries, Spring-8, Japan

**Dr L.J. Tassie**

**Project:** Formation of the Universe from Cosmic Superstrings

**Partner:** Professor P. Brosche, University of Bonn, Germany

**Dr R. G. Thomas**

**Project:** Fusion Fission Dynamics of Heavy Ion Collisions Leading to Superheavy Elements

**Partners:** Drs S. Kailas, R. K. Choudhury and S. S. Kapoor, Bhabha Atomic Research Centre, India, Professor G. Viesti and Dr M. Cinausero, Legnaro National Laboratory, Italy

**Dr S.G. Tims**

**Project:** Plutonium: A New Tracer of Sediment Transport into the Great Barrier Reef Lagoon

**Partners:** Drs G.Hancock, P.Wallbrink and R.Bartley, CSIRO

**Dr D.C. Weisser**

**Project:** Operation and Improvement of Accelerator Facilities

**Partner:** Dr D. Garton, ANSTO

**Dr A.N. Wilson**

**Project:** High-Spin States In Nuclei With  $A=120$  Near The Proton Dripline

**Partner:** Dr J.F. Smith, Manchester University, United Kingdom

**Project:** Excitation Energies of Superdeformed Bands with  $A\approx 190$

**Partners:** Drs A. Korichi, CSNSM, Orsay, France, S. Siem, University of Oslo and J .Libert, IPN Orsay, France

**Project:** Search for Hyperdeformation in the Te-Ba Region

**Partners:** Professors H. Hübel, ISKP Bonn, Germany and B. Herskind, Niels Bohr Institute, Copenhagen, Denmark

**Drs A.N. Wilson and P.M. Davidson**

**Project:** Decay Out of Superdeformed Bands in a Two-level Mixing Model

**Partner:** Professor B.R. Barrett, University of Arizona, United States

**Project:** Decay Out of Superdeformed Bands

**Partners:** Dr A.J. Sargeant and Professor M.S. Hussein, Universidade de Sao Paulo, Brazil

**Project:** Shape Coexistence in  $^{188}\text{Hg}$

**Partners:** Professors P. Fallon, Lawrence Berkeley National Laboratory, United States and I. Ragnarsson, Lund Institute of Technology, Sweden

**Drs A.N. Wilson, P.M. Davidson and P. Nieminen**

**Project:** Superdeformation in Po Isotopes and Magnetic Rotation

**Partners:** Dr R.A. Bark and Professors J.F. Sharpey-Schafer, iThemba Laboratories, South Africa, H. Hubel, HISKP Bonn, Germany and Drs A.Korichi, CSNSM Orsay, France, R. Julin and P.M. Jones, University of Yväsytä, Finland

**Dr J. Wong-Leung**

**Project:** Ion Implantation and Defect Studies in Silicon Carbide

**Partners:** Professor B.G. Svensson, University of Oslo, Norway, Dr M. Linnarson, Royal Institute of Technology, Stockholm, Sweden and Professor D. Cockayne, University of Oxford, United Kingdom

**Drs J. Wong-Leung, H.H. Tan and M. Gao, Ms V. Coleman, Professors J.S. Williams and C. Jagadish**

**Project:** Electron Microscopy Study of Defects in Ion Implanted Semiconductors

**Partners:** Drs J. Zou, University of Queensland, J. FitzGerald, Australian National University and Professor D.J.H. Cockayne, Oxford University, United Kingdom

**Dr W.S. Woolcock**

**Project:** The Pion-Nucleon System at Low Energies

**Partners:** Professor G. Rasche, University of Zurich, Switzerland and Dr E. Matsinos, Varian, Baden, Switzerland

**Dr C. Zha and Professor B. Luther-Davies**

**Project:** Novel Inorganic-organic Composite Materials for Optic-electronic Applications

**Partner:** Professor Liu Hanxing, Wuhan University of Technology, China