

JOHN LESLIE FINNEY

B.A. (Cantab.), Ph.D. (London), F.Inst.P., C.Phys., F.R.S.C., C.Chem.

TERTIARY EDUCATION:

- B.A. Natural Sciences (part II Physics), Jesus College, Cambridge, 1964.
- Postgraduate Certificate in Education, University of Leicester, 1965
- Ph.D. Crystallography, Birkbeck College, University of London, 1968.

CAREER TO DATE:

- 2001 – present: Professor of Physics, University College London.
- 1993 - 2000: Quain Professor of Physics, University College London.
- Founding Head of Condensed Matter and Materials Physics Group 1993 – 1999.
- 1988 - 1993: Chief Scientist (from 1990) and Head, Science Division, ISIS Facility, Rutherford Appleton Laboratory, Didcot, Oxford.
- 1986 - 1993: Professor of Crystallography (personal chair), Birkbeck College (on secondment to Science and Engineering Research Council 1988 – 1993).
- Dean of Science 1986 – 1988.
- 1968 - 1985: Lecturer, then Reader (1977), Dept of Crystallography, Birkbeck College London.
- 1965 - 1968: Research Assistant to J.D. Bernal F.R.S., Birkbeck College London.

Visiting appointments:

- 2001: Visiting Researcher, European Synchrotron Radiation Facility, Grenoble, France.
- 1992 - 1993: Honorary Visiting Research Fellow, The Royal Institution.
- 1985 - 1986: Visiting Scientist, Neutron Division, Rutherford Appleton Laboratory.
- 1980: Guestprofessor, Dept of Structural Properties of Materials, The Technical University of Denmark, Lyngby, Denmark.
- 1976: Associate Professor, Crystallography Laboratory, Université Aix-Marseille III, France.
- 1970 - 1971: Visiting Professor, Dept of Crystallography, University of Pittsburgh, U.S.A.

Part-time appointments:

1993 - 1996: Science Co-ordinator, European Spallation Source Project.

Consultancies:

- Exxon Research, Linden, New Jersey.)
- ICI Corporate Laboratories, Runcorn.
- BP Research, Sunbury.
- Central Electricity Research Laboratories.
- European Synchrotron Radiation Facility.
- Pharmacia Fine Chemicals, Sweden.
- Merck Sharp and Dohme, Hoddesdon.
- Novo Nordisk, Copenhagen.
- Council for the Central Laboratories of the Research Councils.

Recent voluntary positions and activities:

1997 – 2002: Governing Board Member, Euroscience.

2000 – to date: Treasurer, British Pugwash Group.

2001 – 2002: Vice President, Euroscience.

CURRENT RESEARCH SPECIALISMS:

- Structures of and interactions in liquids
- Structure of water and aqueous solutions
- Structure and disorder in ices
- Structures of amorphous ices
- Role of water in biological processes
- Enzyme dynamics & activity.

During my research career, I have received over 40 research grants & contracts from a range of funding bodies (both in the UK and abroad) across several disciplines.

RECENT CONFERENCE ORGANISATION.

- Gordon Research Conference on Water and Aqueous Solutions, Plymouth, New Hampshire, USA, August 2002 (with P. Debenedetti, Princeton).
- “Is life possible without water?”. Royal Society Discussion, London, December 2003 (with R.M. Daniel, Waikato and A.M. Stoneham, University College London).
- Annual meeting of the British Crystallographic Association, Loughborough, April 2005.

PUBLICATIONS:

Research articles: Over 200 peer-reviewed articles in physics, chemistry, and biological sciences (see attached list for recent publications).

Editorial work:

- Editor (with R.M. Daniel and A. M. Stoneham) of “Is like possible without water”, papers and discussions from Royal Society Discussion Meeting, December 2003).
- Editor (with R.M. Lynden-Bell) of UK Liquid Network Special Issue of Molecular Physics (volume 99, No. 10, May 2001)
- Co-editor (with D. Worcester, Missouri) of book series “Neutron Scattering: Techniques and Applications”. World Scientific.
- Founder Editor: Euroscience News 1997 - 2002
- Previous member of Editorial Boards of:
 - Water Science Reviews
 - J. Molecular Liquids
 - Phys. Chem. Communications.

Radio and television work:

- BBC Television/Open University.
- BBC: Radio 4
- BBC World service.
- Dutch television.
- Brazilian television

CURRENT MEMBERSHIPS/AFFILIATIONS:

- Vice-President, British Crystallographic Association.
- Member, Liquids Board, European Physical Society 2000 - .
- Member, Commission 10 of International Union of Applied Physics 2002 - .
- Member of British Association for the Advancement of Science, British Crystallographic Association, American Crystallographic Association, British Biophysical Society, European Molecular Liquids Group, Save British Science, Association of British Science Writers
- Fellow of the Institute of Physics
- Fellow of the Royal Society of Chemistry
- Honorary Vice-President, Euroscience.

John Finney
21 October 2004.

JOHN L. FINNEY: RECENT PUBLICATIONS.

Temperature dependence of a 0.06mole fraction tertiary butanol – water solution.

D.T. Bowron, J L Finney and A.K. Soper.

J Chem Phys **114** (2001) 6203-6219.

The water molecule and its interactions.

J L Finney.

J Mol Liquids **90** (2001) 303.

X-ray absorption spectroscopy investigations of the hydrophobic hydration of krypton at high pressure.

D T Bowron, J L Finney, R Weigel, A Filipponi, and M A Roberts.

Molec Phys **99** (2001) 761

The UK Liquid Matter Network.

J L Finney.

Molec Phys **99** (2001) 759..

Ice: Structures.

J L Finney.

In *Encyclopedia of Materials: Science and Technology*, (eds K H J Buschow, R W Cahn, M C Flemings, B Ilschner, E J Kramer and S Mahajan), Elsevier Science, Oxford, Vol. 5 pp. 4018-27, 2001

Protein Folding and Dynamics. New Insights from Computer Simulation and Scattering Experiments.

N Bondar, R Daniel, J L Finney, S Fischer, M Kataoka, A Petrescu and J C Smith.

J. Phys. Soc. Japan **70** Suppl. A (2001) 392-395.

Experimental determination of the structures of complex liquids.

J L Finney and D. T. Bowron.

In *From semiconductors to proteins: beyond the average structure*, eds S H Billinge and M F Thorpe, Kluwer Academic/Plenum, pp. 219-244, 2002.

X-ray absorption spectroscopic studies of non-polar solute hydration structure.

D T Bowron and J L Finney.

In *From semiconductors to proteins: beyond the average structure*, eds S H Billinge and M F Thorpe, Kluwer Academic/Plenum, 2002, pp. 245-256, 2002.

Crystallography without a lattice.

J L Finney.

Structural Chemistry **13** (2002) 231-246.

The dynamic transition in proteins may have a simple explanation.

R M Daniel, J L Finney and J C Smith.

Faraday Discuss **122** (2002) 163-169.

Molecular segregation observed in a concentrated alcohol-water solution.

S Dixit, J Crain, W C K Poon, J L Finney and A K Soper.

Nature **416** (2002) 829-832.

Structures of High and Low Density Amorphous Ice by Neutron Diffraction.

J L Finney, A Hallbrucker, I Kohl, A K Soper and D T Bowron.

Phys Rev Letts **88** (2002) 225503.

The p - T dependency of the ice II crystal structure and the effect of helium inclusion.

C Lobban, J L Finney, and W F Kuhs.

J Chem Phys **117** (2002) 3928-3934.

Water structure and solute association in dilute aqueous methanol.

S Dixit, A K Soper, J L Finney and J Crain.

Europhys Letts **59** (2002) 377-383.

Structure of a New Dense Amorphous Ice.

J L Finney, D T Bowron, A K Soper, T Loerting, E Mayer, and A Hallbrucker,

Phys Rev Letts **89** (2002) 205503.

Anion Bridges Drive Salting Out of a Simple Amphiphile from Aqueous Solution.

D T Bowron and J L Finney.

Phys Rev Letts **89** (2002) 215508.

An end to UK nuclear weapons.

T Milne, H Beach, J L Finney, R S Pease and J Rotblat.

British Pugwash Group 2002.

Structure of a salt-amphiphile-water solution and the mechanism of salting out.

D T Bowron and J L Finney.

J Chem Phys **118** (2003) 8357-8372.

The role of dynamics in enzyme activity.

R M Daniel, R V Dunn, J L Finney, and J C Smith.

Ann Rev Biophys Biomol Struct **32** (2003) 69-92.

Use of computer simulation in the interpretation of elastic neutron scattering in complex molecular systems: a small protein in various environments.

J A Hayward, R M Daniel, J L Finney and J C Smith.

Chem Phys **292** (2003) 389-396.

Molecular and mesoscale structures in hydrophobically driven aqueous solutions.

J L Finney, D T Bowron, R M Daniel, P A Timmins, and M A Roberts.

Biophysical Chemistry **105** (2003) 391-409.

Molecular Dynamics Decomposition of Temperature-Dependent Elastic Neutron Scattering by a Protein Solution.

J A Hayward, J L Finney, R M Daniel, and J C Smith.

Biophysical Journal **85** (2003) 679-685.

Direct Determination of Vibrational Density of States Change on Ligand Binding to a Protein.

Erika Balog, Torsten Becker, Martin Oettl, Rued Lechner, Roy Daniel, John Finney, and Jeremy C. Smith

Phys Rev Letts **93** 028103-1 – 4 (2004)

Neutron Frequency Windows and the Protein Dynamical Transition

T Becker, J A Hayward, J L Finney, R M Daniel, and J C Smith

Biophysical Journal. **87** 1436-1444 (2004)

Anion bridges and salting out

J L Finney and D T Bowron

Current Opinion in Colloid & Interface Science **9** 59-63 (2004)

The British Nuclear Weapons Programme 1952-2002

(Book Review).

J L Finney

Interdisciplinary Science Reviews **29** 209-212 (2004)

Water? What's so special about it?

J L Finney

Phil Trans Roy Soc B: Biological Sciences **359** 1145-1165 (2004)

Methanol-water solutions: a bi-percolating liquid mixture

L Dougan, S P Bates, R Hargreaves, J P Fox, J Crain, J L Finney, V Réat and A K Soper.

J Chem Phys **121** 6456-6462 (2004).