

**FULL NAME:** Charles Richard Arthur CATLOW

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### CAREER AND DEGREES

1966 – 1970 Undergraduate: St John's College, Oxford  
(B.A. Chemistry, 1st Class Hons. 1970)

1970 – 1973 Graduate Scholar: Jesus College, Oxford  
(D.Phil. awarded, 1974, for thesis on 'Defect Structures in Fluorite Crystals')

1973 – 1975 ICI Research Fellow: Theoretical Chemistry Department, Oxford

1975 – 1976 IBM Research Fellow: St John's College, Oxford

1976 – 1985 University Lecturer in Chemistry, University College London

1985 – 1989 Professor of Physical Chemistry: Joint Appointment between University of Keele and Daresbury Laboratory

1989 – 2007 Wolfson Professor of Natural Philosophy, The Royal Institution, London

1998 – 2007 Director, Davy Faraday Research Laboratory, The Royal Institution, London

2002 – 2007 Head of Chemistry Department, University College London (joint appointment with The Royal Institution)

2007 – 2014 Dean of the Faculty of Mathematical and Physical Sciences, University College London

2014 - Professorial Research Fellow, Chemistry Department, University College London

2015 - Professor of Computational and Catalytic Chemistry, School of Chemistry, Cardiff

### AWARDS and FELLOWSHIPS

1990 Fellow of the Royal Society of Chemistry

1992 Royal Society of Chemistry Medal: Solid State Chemistry

1995 Fellow of the Institute of Physics

1996 Honorary Member of the Materials Research Society of India

1998 Royal Society of Chemistry Interdisciplinary Medal

2001 Honorary Degree of the University of Havana, Cuba

2004 Fellow of the Royal Society of London – the UK Academy of Science

2006 Fellow of The World Academy of Science (TWAS)

2008 Liversidge medal of the Royal Society of Chemistry

2011 Honorary Fellow of the Chemical Research Society of India

2012 Honorary Fellow – St. John's College Oxford

2013 Member of the Academia Europaea

2014 Gerhardt Ertl Lecturer, Berlin

2014 Honorary Professor: University of Limpopo, South Africa

2016 Honorary Fellow of the Cuban Chemical Society

2017 Fellow of the Learned Society of Wales

2020 CNR Rao Award Lectureship of the Chemical Research Society of India.

2020 Royal Society of Chemistry, Faraday Lectureship Prize

2020 Member of the Leopoldina: The German National Science Academy

2020 Knight Bachelor

2022 Honorary Doctorate, University of Bath, UK

2022 Fellow of the International Science Council

### RESEARCH INTERESTS

Current work is centred on the investigation of complex materials using a combination of computer modelling, quantum mechanical, synchrotron radiation and neutron scattering techniques. Present projects have a strong emphasis on nano-science, catalysis and energy materials.

### RESEARCH SUPERVISION

1. 120 Ph.D. students supervised, with theses completed and examined.
2. 7 Ph.D. students currently under supervision
3. 60 PDRAs previously supervised
4. 8 PDRAs currently under supervision

(Over 50 former group members now in academic positions around the world including 20 full professors)

## RESEARCH SUPPORT AND INCOME

The research programme is undertaken by a team of scientists, supported by grants from UK Research Councils (EPSRC), EU and industry (Johnson Matthey,). The total value of the current grants is approximately £6M as PI and £13M as co-PI

## PUBLICATIONS:

- A. **Books:** 12 co-authored or edited.
- B. **Journal Volumes:** 20 edited
- C. **Research Papers and Reviews:** Currently 1200 articles
- D. **Publication and Citation Record: H Index 118; > 60,000 citations;** see [C. Richard A. Catlow - Google Scholar](#)

## COLLABORATIONS

Active collaborations with many universities, both in the UK and abroad, industries and research institutes are an essential feature of the current research programme. I play a major role in the UK Catalysis Hub project and am PI of the Catalysis by Design Theme based in the Research Complex at Harwell. I have strong links with several institutes and universities in Europe including University of Utrecht, Humboldt University Berlin, Fritz Haber Institute and Barcelona University. I have been a partner in several EU funded projects. I also have collaborations with Hong Kong University, The Dalian Institute of Chemical Physics and Tsinghua University in China.

For over 12 years, I was the UK project leader for the Royal Society/National Research Foundation (South Africa) programme on Computational Materials Science based at the University of the North, Polokwane, South Africa. I continue an active involvement in scientific collaboration and capacity building programmes in Africa..

## VOLUNTARY ROLES AND MEMBERSHIP OF SCIENTIFIC COMMITTEES AND ORGANISATIONS

1. 1984 – 1988, 1990-1993 SERC Science Board Computing Committee
2. 1987 – 1990 SERC Synchrotron Radiation Facility Committee  
1987 – 1990 Chair — Powder Diffraction Beam Allocation Panel
3. 1983 – Member SERC Collaborative Computational Project 5 (CCP5)  
1986 – 1989 Chair CCP5
4. 1989 – 1993 Chair — SERC Collaborative Computing Projects (CCP) Steering Committee
5. 1983 – 1986 Co-founder and Chair — RSC Faraday Division, Polar Solids Group
6. 1990 – 1993 Institut Laue-Langevin, Scientific Council
7. 1991 – 1994 ABRC Supercomputing Management Committee  
(Chair — Scientific Requirement Working Group Committee of SMC)
8. 1991 – 1997 Chair — EPSRC Atlas Computing Division, CRAY Users Committee
9. 1992 – 1994 Member SERC, Physical Chemistry Panel of the SERC Chemistry Committee
10. 1992 – 1994 Chair — SERC Parallel Supercomputing Panel
11. 1994 – 1997 Chair — T3D (supercomputer) Resource Allocation Panel of EPSRC
12. 1995 – 1996 Member EPSRC Advisory Board for High Performance Computing
13. 1995 – 1998 Chair and member, Panel for Structure and Bonding Component of EPSRC Chemistry Programme
14. 1996 – 1998 EPSRC member of Inter-Councils Board for High Performance Supercomputing
15. 1996 Chair EPSRC Computational Resources Allocation Workshop
16. 1996 Member Inter-Council High Performance Computing Management Committee.
17. 1997 Chair of the Panel Reviewing the CLRC Daresbury Chemical Data Base.
18. 1997 Chair, EPSRC Chemistry Programme Instrumentation Panel.
19. 1997 Member of High Performance Computing Procurement Panel.
20. 1997 Member of HPCI Centres Review Panel
21. 1998 – 2001 Chair, Inter-Research Council, High Performance Computing Strategy Committee.
22. 2001 – 2002 Member of HPC(X) procurement panel
23. 2001 – 2002 Member of Joint Information Systems Committee
24. 2004 -2007 Member of Hector Scientific Advisory Board
25. 2006 -2008 Member of RAE Panel UoA 18 (Chemistry)
26. 2006 –2007 Member of CCLRC Council
27. 2006 - 2007 Member of Council of University College London
28. 2007- 2009 Chair of Royal Society sub-committee 3 (Chemistry)
29. 2011 - 2014 Member of Royal Society Leverhulme Africa Capacity Building Committee

30	2011 – 2014	Member of Royal Society Audit Committee
31	2009 – 2011	Member of the Council of The Royal Society
32	2014 - 2015	Member of Royal Society DFID Africa capacity Building Committee
33.	2011 - 2014	Chair of UK Research Excellence Framework (REF) sub-panel 8 (Chemistry)
34.	2016 -	Chair of Scientific Advisory Committee: ISIS Neutron Source
35	2016- 2021	Foreign Secretary and Vice-President of the Royal Society
36,	2016 - 2021	Member of the Council of the Royal Society
37.	2017- 2020	Vice-President: European Academies Science Advice Council (EASAC)
38	2017- 2022	Co-Chair: Inter-Academy Partnership (IAP) for Policy
39.	2021 - 2022	Co-President: Inter-Academy Partnership (IAP)
40	2022 -	Chair of the Board of Trustees of The Royal Institution of Great Britain

Britain

## CONSULTANCIES

Accelrys (formerly Biosym and MSI), California, USA and Cambridge, UK. Johnson Matthey, UK

## ACTIVITIES IN PUBLIC UNDERSTANDING OF SCIENCE AND EDUCATION

Lecturer at events within and outside The Royal Institution to promote public understanding of science amongst people of all ages and abilities, and promoter/supporter of such events.

From 1989 to 2002, organiser of and lecturer in The Royal Institution Science Events for Schools Programme. This extensive programme involved lectures for children between the ages of 8 and 18 (with a total of approximately 35,000 attending The Royal Institution each year). From 1990 the primary school programme was greatly expanded, and included workshops for teachers as well as lectures for their pupils. Another successful feature of the programme was the series of 'Computational Science Seminars' for sixth form pupils, held in London and at Universities the UK, which highlighted the rôle of molecular modelling in physical and biological sciences. The whole programme, but especially lectures for Primary pupils, was expanded to regional venues throughout the UK. I am still active in science outreach activities and lectured recently to audiences in Seoul and Beijing on the role of high-performance computing in contemporary science. I now chair the Board of the Royal Institution which has a two hundred year history of scientific outreach

## UK EDUCATIONAL ADVISORY BOARDS AND RESPONSIBILITIES

1. 1997 – 2004 Member of the Court of Cranfield University.
2. 1998 – 2000 Member of the Explore Advisory Panel, Bristol.
3. 1998 – 2000 Member of External Review Panel, Chemistry Department, University of Surrey.
4. 2004 - Chair of External Review Board, School of Chemistry and Biology, Birkbeck College, London
5. 2005 - 2014 Member of Review Board for Irish Centre for High Performance Computing

## MEMBERSHIP OF EDITORIAL BOARDS

1. Computer Physics Communications (1987 – 2007)
2. Materials Research Forum (1987 – 1995)
3. Journal of Materials Chemistry (1991 – 1994)
4. Molecular Simulations (1991 – 2010)
5. Modelling and Simulation in Materials Science and Engineering (1992 – 2000)
6. Current Opinion in Solid State and Materials Science (1995 – 2000)
8. Solid State Ionics (1995 – 2001)
7. Journal of Physics and Chemistry of Solids (1993 – 2001)
9. Journal of Physical Chemistry (1996 – 2001)
10. Theoretica Chimica Acta (Advisory Editor 1997 – 2010)
11. Physical Chemistry Communications (1998 – 2002)
12. Theoretical Chemistry Accounts :Theory, Computation and Modelling (1999 – 2002)
13. Assistant Editor, Dalton Transactions (2001– 2004)
14. Main Editorial Board, IUCr Journal (2013- present)

## CONFERENCE ORGANISATION:

Over 80 conferences/workshops/schools organised or co-organised, most recently

*Winter School on Computational Modelling of Materials* (JNCASR, Bangalore – January 2015 and December, 2018)

*International workshop on Carbon Dioxide Utilisation* (Varadero, Cuba – June 2015)

*High End Computing in Materials Chemistry* (Cardiff, UK – April, 2016)

*50 Years of Synchrotron Science* (Liverpool, UK – June, 2018)

*High end Computing in Materials Chemistry* (Lincoln UK, September, 2018)

2018) *Royal Society Discussion Meeting: Energy Materials for a Low Carbon Future* (September,

*Royal Society Discussion Meeting: Science and the Circular Economy* (June 2019)

2022) *Royal Society Discussion Meeting: Supercomputing Simulations of Advanced Materials* (June