

Professor Jeremy Mark Hutson, FRS

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Current position: Professor of Chemistry and Physics,
University of Durham

Date of birth: 7 May 1957

Place of birth: West Kirby, Cheshire, United Kingdom

Education and qualifications:

1975-79 B. A. (Chemistry): 1st Class Oxford University (Wadham College)
1979-81 D. Phil. (Physical Chemistry) Oxford University (Hertford College)
D. Phil. supervisor: Dr. B. J. Howard

Appointments:

1981-83 NATO/SERC Postdoctoral Research Fellow at the University of Waterloo,
Canada (working with Prof. R. J. Le Roy)

1983-86 Research Fellow at Pembroke College, Cambridge, carrying out independent
research in the Theoretical Chemistry Department

1987-93 Lecturer, University of Durham

1993-96 Reader, University of Durham

1996- Professor, University of Durham

1998-2001 Head of the Department of Chemistry, University of Durham

Prizes:

1991 Corday-Morgan Medal of the Royal Society of Chemistry (RSC)

2007 Industrially Sponsored Award in Computational Chemistry (RSC)

2007 Kołos Medal of the Polish Chemical Society

2010 Humboldt Research Award, Alexander von Humboldt Foundation

2010 Elected Fellow of the Royal Society

2011 Tilden Prize of the Royal Society of Chemistry

2016 Thomson Medal of the Institute of Physics

Competitively awarded Fellowships:

1991 Visiting Fellowship, Joint Institute for Laboratory Astrophysics, Boulder, Colorado

1993-94 Nuffield Foundation Science Research Fellowship

2001-2002 Visiting Professorship, University of Colorado

Literature citations

h-index: 53
Over 8400 citations up to July 2016 (data from ISI)

Editorship:

Editor of International Reviews in Physical Chemistry since 2000; sole Editor since 2005

Editorial Boards:

1997-1999 Journal of Chemical Physics
2000-2005 Molecular Physics
2003-2010 Specialist Editor of Computer Physics Communications

Membership of professional bodies:

Fellow of the Royal Society of Chemistry (UK)
Fellow of the Institute of Physics (UK)
Member of the European Physical Society

Learned Society Committees:

Served on several committees of the Royal Society of Chemistry:

Faraday Division Council (Physical Chemistry)
Faraday Division Standing Committee on Conferences
Marlow Award Committee
Harrison and Corday-Morgan Medal Award Committee
Boys-Rahman Medal Award Committee
Faraday Division Awards Selection Committee

Board Member of the Atomic and Molecular Physics Division of the European Physical Society, 2004-2007.

Conference Organisation:

Founder of the successful series of CCP6 Workshops on Molecular Quantum Dynamics. Workshops organised by JMH in this series include "Fashioning a Model: Optimization Methods in Chemical Physics" (Durham, 1998), "Bound States of Polyatomic Molecules" (Aberdeen, 1999) and "Interactions of Cold Atoms and Molecules" (Durham, 2002).

Faraday Discussion 118 of the Royal Society of Chemistry, on "Cluster Dynamics" (Durham, 2001: Chairman of Organising Committee).

Telluride Workshops on "Doped Rare Gas Clusters" (2002) and "Dynamics on Multiple Potential Surfaces" (2003) (Telluride, Colorado: Coorganiser with Anne McCoy)

ITAMP Workshop on Ultracold Polar Gases (Harvard, 2004: Coorganiser with Roman Krems)

European Conference on "Bose-Einstein Condensation: From Atoms to Molecules" (Durham, 2004: Organiser)

Gordon Conference on Molecular and Ionic Clusters (Vice-Chair 2006; Chair 2008)

First European Conference on Cold Quantum Matter (Barcelona, April 2008: Chairman of Scientific Committee)

Faraday Discussion 142 of the Royal Society of Chemistry, on "Cold and Ultracold Molecules" (Durham, April 2009: Chairman of Organising Committee).

American Physical Society March Meeting (Portland, Oregon, 2010: Organiser of Focus Session on "Cold and Ultracold Molecules")

International Symposium on Theoretical Chemical Physics (Tromsø, Norway, July 2019): Organiser of scientific track on "Ultracold Chemical Physics"

Miscellaneous:

Chairman of CCP6, the EPSRC Collaborative Computational Project on Molecular Quantum Dynamics, 2000-2005.

Chair of the Scientific Committee for the European Science Foundation EUROCORES Programme on Cold Quantum Matter (EuroQUAM), 2007-2010.

Founded the Molecular Dynamics News email list, which is a major news source in Chemical Physics. The list has about 3600 members.

External examining (undergraduate):

External Examiner in Physical Chemistry at the University of York, 2002-2005.

External Examiner for the Chemical Physics degree at the University of Edinburgh 1998-2001.

External Examiner in Physical Chemistry at the University of Oxford, 2014-16

J. M. Hutson: Invited talks at international conferences

1987: 11th International Symposium on Molecular Beams, Edinburgh, UK
The theory of atom-surface scattering

1988: 196th ACS National Meeting, Los Angeles, California
Intermolecular Forces from Van der Waals Spectra

1989: NATO Advanced Research Workshop on Dynamics of Polyatomic Van der Waals Complexes, Bonas, France
Dynamics of Van der Waals Complexes: Beyond Atom-Diatom Systems

1990: Ciba Foundation / RS Discussion Meeting on Regularity and Chaos in Intramolecular Motion, London, UK

1990: Gordon Conference on Atomic and Molecular Interactions, Newport, Rhode Island
Van der Waals Complexes and Intermolecular Forces

1990: European Conference on Dynamics of Molecular Collisions (MOLEC VIII), Bernkastel, Germany

1991: Telluride Conference on Computational Polyatomic Dynamics, Telluride, Colorado

1991: NATO Advanced Research Workshop on Advances in Transport Properties, Porto Carras, Greece
Classical Path Methods for Lineshape Cross Sections

1992: European Conference on Atomic & Molecular Physics (ECAMP 4), Riga, Latvia
The Spectroscopy of Van der Waals Molecules

1992: 47th International Symposium on Molecular Spectroscopy, Columbus, Ohio
Spectroscopy and Dynamics of Van der Waals Complexes

1992: Telluride Conference on Spectra of Highly Excited Molecules, Telluride, Colorado
Near-rigid and Free-rotor Quantum Numbers for Excited States of Complexes

1993: 22nd International Symposium on Free Radicals, Doorwerth, The Netherlands
Intermolecular Forces from the Spectroscopy of Open-Shell Complexes

1993: Theoretical Chemistry Days No. 1: Recent Advances in Intermolecular Forces, London, UK
Intermolecular Forces and Spectroscopy

1994: Faraday Discussion 97, on Structure and Dynamics of Van der Waals Complexes
Non-additive Intermolecular Forces from the Spectroscopy of Van der Waals Clusters

1994: European Meeting on High Resolution Spectroscopy, Lille, France
Spectroscopy of Complexes Containing Open-Shell Atoms

1994: 10th Anniversary Chemical Physics Symposium, Waterloo, Canada
Non-additive Intermolecular Forces from the Spectroscopy of Van der Waals Clusters

1994: CCP6 Workshop on Intramolecular Dynamics in the Frequency and Time Domains, Oxford, UK
Simulating Femtosecond Experiments on the Sodium Trimer

1995: Gordon Conference on Molecular and Ionic Clusters, Oxnard, California
Non-additive Intermolecular Forces from the Spectroscopy of Ar₂HCl and Ar₂HF

1995: 14th International Colloquium on High-Resolution Molecular Spectroscopy, Dijon, France
Intermolecular Forces from the Spectroscopy of Van der Waals Complexes

1996: Charles Coulson Summer School in Theoretical Chemistry, Oxford, UK
Course of lectures on Intermolecular Forces and Dynamics

1997: Optical, Electric and Magnetic Properties of Molecules: A conference to celebrate the career of Professor A. D. Buckingham, Cambridge, UK

1998: CCP6 Workshop on Molecular Quantum States at Dissociation, London, UK
Long-range Interactions involving Atomic and Molecular Ions

1998: Gordon Conference on Molecular and Ionic Clusters, Ventura, California
Potential Energy Surfaces from the Near-Dissociation Spectra of Ionic Complexes

1999: 11th European Seminar on Quantum Chemistry, Zakopane, Poland
Morphing Ab-Initio Intermolecular Potentials to Fit Experimental Data

1999: Telluride Workshop on Reaction Dynamics in Clusters, Telluride, Colorado
Van der Waals Well and Bound States in the Entrance Valley of the F+HF and Cl+HCl
Reactions

2000: Gordon Conference on Atomic and Molecular Interactions, New London, New Hampshire
Morphing Ab-Initio Intermolecular Potentials to Fit Experimental Data

2001: Gordon Conference on Molecular Energy Transfer, Ventura, California
Photodissociation of Complexes

2001: 18th Conference on Dynamics of Molecular Collisions, Copper Mountain, Colorado
New Domains for Inelastic Scattering

2001: 14th Canadian Symposium on Theoretical Chemistry, Ottawa, Canada
Cold Molecules and Their Collisions

2002: Gordon Conference on Ionic and Molecular Clusters, Ventura, California
Progress in Intermolecular Potentials

2002: Telluride Workshop on Doped Rare Gas Clusters, Telluride, Colorado
Rare Gas Clusters Containing Open-shell Molecules

2002: European Conference on Cold Molecules, Nieuwegein, The Netherlands
Atom-Molecule Collisions in Spin-polarized Alkali Metals

2003: 1st Telluride Workshop on Dynamics on Multiple Potential Surfaces, Telluride, Colorado
Conical Intersections in Ultracold Molecular Collisions

2004: Harvard/ITAMP Workshop on Ultracold Dipolar Molecules, Cambridge, Massachusetts
Interactions Between Polar Molecules and Alkali Metal Atoms

2004: 3rd International Meeting on Photodynamics, Havana, Cuba
What Happens to Polar Molecules in an Atomic Bose-Einstein Condensate?

2004: European Conference on Atomic and Molecular Physics (ECAMP VIII), Rennes, France
Cold Molecules and Their Interactions

2004: 27th International Symposium on Free Radicals, Taipei, Taiwan
Free Radicals in Cold Atomic Gases: How Do They Interact?

2004: 228th American Chemical Society National Meeting, Philadelphia
Interactions Between Polar Molecules and Alkali Metal Atoms

2004: Gordon Conference on Molecular and Ionic Clusters, Aussois, France
Ultracold Collisions

2004: Theoretical Chemistry Days No. 12: Controlling Atoms and Molecules in Theory and in
Practice, London, UK
Ultracold Molecules and their Collisions

2004: Indian National Conference on Atomic and Molecular Physics (NCAMP XV), Ahmedabad,
India
Molecules in Cold Atomic Gases: How Do They Interact?

2005: Gordon Conference on Molecular Energy Transfer, Buellton, California
Cold Molecules and Their Collisions

2005: European Science Foundation Exploratory Workshop on Ultracold Chemistry, Mulhouse,
Switzerland
Atom-Diatom Collisions in Bose and Fermi Gases

2005: Telluride Workshop on Theory of Cold Molecules, Telluride, Colorado
Atom-Diatom Collisions in Cold Atomic Gases: Bosons versus Fermions

2005: 8th International Meeting on Quantum Reactive Scattering, Santa Cruz, California
Atom-Diatom Collisions in Ultracold Bose and Fermi Gases

2005: Workshop on Cold Polar Molecules, Schloss Ringberg, Germany
Molecules in Cold Atomic Gases: How do they Interact?

2006: Gordon Conference on Molecular and Ionic Clusters, Ventura, California
The Problem of Excited States

2006: APS DAMOP Meeting, Knoxville, Tennessee
Atom-Diatom Collisions in Bose and Fermi Gases

2006: 2nd Telluride Workshop on Dynamics on Multiple Potential Surfaces, Telluride, Colorado
Cold Collisions on Multiple Surfaces

2006: Gordon Conference on Atomic and Molecular Interactions, New London, New Hampshire
Collisions between Cold Molecules and Ultracold Alkali Metal Atoms

2006: QuAMP III, Durham, UK
Tutorial Lecture: Introduction to Cold Molecules

2006: Heraeus Seminar 379, on Cold Molecules, Bad Honnef, Germany
Cold Collisions of OH and Rb

2007: Theory and Spectroscopy Conference, Lunteren, The Netherlands
Collisions of Ultracold Molecules: Controlling Chemistry with Magnetic Fields

2007: DPG Symposium on Molecular Collisions at Ultracold Temperatures, Düsseldorf
Molecular Collisions in Magnetic Fields

2007: KITP Workshop on Strongly Correlated Systems in Ultracold Atomic Gases, Santa Barbara
Interactions and Collisions involving Cold Molecules

2007: Kołos Lecture, University of Warsaw, Poland
Molecules at Millikelvin and Below

2007: 9th International Meeting on Quantum Reactive Scattering, Cambridge, UK
Resonances in Ultracold Collisions

2008: 5th International Meeting on Photodynamics, Havana, Cuba
Controlling Molecular Collisions with Magnetic Fields

2008: International Symposium on Theoretical Chemical Physics, Vancouver, Canada
Ultracold Molecules: Creation and Control

2009: Faraday Discussion on Cold and Ultracold Molecules, Durham, UK
Prospects for Sympathetic Cooling of Polar Molecules

2009: 10th International Meeting on Quantum Reactive Scattering, Dalian, China
Ultracold Molecules: New Challenges for Collision Calculations

2009: 22nd Meeting on Dynamics of Molecular Collisions, Snowbird, Utah
Collisions of Ultracold Atoms and Molecules: Will Sympathetic Cooling Work?

2009: Colorado Cold Molecules Workshop, Boulder, Colorado
Prospects for Sympathetic Cooling of Polar Molecules

2010: Workshop on Weakly Bound Systems in Atomic, Molecular and Nuclear Physics, Seattle
Weakly Bound States and Controlled Collisions of Ultracold Molecules

2010: Workshop on Coherence in Ultracold Molecular Physics, Vancouver, Canada
New Frontiers in Ultracold Molecule Formation

2010: Royal Society New Fellows Seminar, London, UK
Making Molecules Near Absolute Zero

2010: European Conference on Cold Quantum Matter, Ischgl, Austria
New Frontiers in Ultracold Molecule Formation

2011: Workshop on Cold and Controlled Molecular Collisions, Ringberg, Germany
Formation of Ultracold RbCs

2011: Annual Meeting of the Theoretical Chemistry Group of the RSC, Nottingham, UK
Making Molecules at Microkelvin

2011: 11th International Meeting on Quantum Reactive Scattering, Santa Fe, New Mexico
Quantum Control of Bimolecular Processes in the Ultracold Regime

2011: ITAMP Workshop on Fundamental Science with Ultracold Molecules, Cambridge, Massachusetts
Ultracold Molecular Collisions

2011: International Workshop on Ultracold Molecules, Stellenbosch, South Africa
Prospects for producing ultracold molecules by sympathetic cooling

2012: Gordon Conference on Molecular and Ionic Clusters, Ventura, California
Towards Quantum Control in Ultracold Chemistry

2012: Cardiff Chemistry Conference, Cardiff, UK
Cold Molecules and Controlled Ultracold Chemistry

2012: HiRus XVII, 17th Symposium on High-Resolution Molecular Spectroscopy, Zelenogorsk, Russia
Formation of ultracold molecules in levels from 10 kHz to 5 MHz from dissociation

2012: MOLEC XIX: European Conference on the Dynamics of Molecular Systems, Oxford, UK
The prospects of forming microkelvin molecules by sympathetic cooling with ultracold atoms

2012: Atoms and Molecules in Ultracold Environments, Birmingham, UK
Cold Molecules and Controlled Ultracold Chemistry

2012: ESF Workshop on Cold and Ultracold Molecules, Obergurgl, Austria
Ultracold H atoms: a versatile coolant for atoms and molecules

2013: KITP Workshop on New Science with Ultracold Molecules, Santa Barbara, USA
Molecules with electric and magnetic dipoles

2013: 12th International Meeting on Quantum Reactive Scattering, Bordeaux, France
Ultracold H atoms: a versatile coolant for atoms and molecules

2013: Dynamics of Molecular Collisions, Lake Tahoe, USA
Ultracold H atoms: a versatile coolant for atoms and molecules

2013: Royal Society International Scientific Seminar on Application of simple molecules to fundamental questions in science, Chicheley Hall, UK
Ultracold Chemistry and Molecular Assembly

2013: QuAMP: Quantum Atomic, Molecular, and Plasma Physics, Swansea, UK
Cold Molecules and Controlled Ultracold Chemistry

2014: Harvard University, R. B. Woodward Lecture
Cold Molecules and Controlled Ultracold Chemistry

2014: Frontiers of Cold Matter, Maryland, USA
Ultracold Physics beyond the Born-Oppenheimer approximation

2015: German Physical Society (DPG), Heidelberg, Germany
Feshbach Resonances and the Formation of Ultracold Molecules

2015: Theoretical Challenges in Small Molecular Dynamics, Dalian, China
Making ultracold RbCs molecules in their absolute ground state

2015: Defining New Directions in Cold Chemical Physics, Boulder, Colorado
Panelist for discussion on "How cold is cold enough?"

2016: Ultracold Group II Atoms, Paris, France
Collisions of metastable Yb: simplicity, complexity and chaos

2017: Dynamics of Molecular Collisions, Lake Tahoe, USA

Ultracold molecular collisions: Sticky or not?

2018: Larmor Lecture, Queen's University Belfast

Ultracold Molecules for Quantum Science

2018: Gordon Conference on Molecular Interactions and Dynamics, Massachusetts, USA

Formation and Control of Ultracold Molecules

2018: Ultracold Group II Atoms, Beijing, China

Progress towards the formation of ultracold CsYb molecules

2019: Harvard/ITAMP Workshop on New Frontiers in Cold Molecules, Cambridge, Massachusetts

Do non-reactive ultracold molecules decay via complex formation?

2019: Waterloo Chemical Physics Symposium, Waterloo, Ontario

Roger E. Miller Lecture on Controlling ultracold molecules with magnetic and microwave fields