

# Royal Society of Chemistry National Chemical Landmarks



Award Date	Honouree	Location	Inscription
8 May 2024	AstraZeneca, Macclesfield Campus	AstraZeneca, Silk Road Business Park, Macclesfield, Cheshire, SK10 2NA, UK	Since 1966, teams of scientists based on this site have developed and manufactured over thirty human, consumer health and veterinary medicinal products, helping millions of patients worldwide.
10 April 2024	Professor Amilra Prasanna de Silva	Queen's University Belfast, School of Chemistry and Chemical Engineering, David Keir Building, Stranmillis Road, Belfast, BT9 5AG, UK	Founded Fluorescent PET Sensing and Molecular Logic in the 1980s alongside associates at the University of Colombo, Sri Lanka, and at Queen's University Belfast. This enabled the development of the PET sensors in a line of innovative portable blood analysers by HR He, MJP Leiner, JK Tusa and colleagues in the 1990s. The analysers have helped save thousands of human and animal lives around the world.
17 June 2022	Sir Harry Kroto	Chichester Lecture Theatre Building, University of Sussex, Falmer, Brighton, BN1 9QJ, UK	In 1985, experiments initiated here at the University of Sussex led Kroto to discover a new form of carbon, which he named Buckminsterfullerene (C <sub>60</sub> or Buckyball), sparking many applications in material science, electronics and nanotechnology. Kroto, with US collaborators, shared the Nobel Prize for discovery of these 'Fullerenes' in 1996. Kroto also passionately promoted science engagement, founding the VEGA Science Trust and GEOSET.
10 December 2018	Institute of Cancer Research	The Institute of Cancer Research, Chester Beatty Laboratories, 237 Fulham Road, Chelsea Road, London, SW3 6JB, UK	ICR scientists on this site and elsewhere pioneered numerous new cancer drugs from the 1950s until the present day – including the discovery of chemotherapy drug carboplatin, prostate cancer drug abiraterone and the genetic targeting of olaparib for ovarian and breast cancer.
10 December 2018	Institute of Cancer Research	The Institute of Cancer Research, Royal Marsden Hospital, 15 Cotswold Road, Sutton, London, SM2 5NG, UK	ICR scientists on this site and elsewhere pioneered numerous new cancer drugs from the 1950s until the present day – including the discovery of chemotherapy drug carboplatin, prostate cancer drug abiraterone and the genetic targeting of olaparib for ovarian and breast cancer.
26 October 2016	John Dalton	Ape and Apple, 28-30 John Dalton Street, Manchester, M2 6HQ, UK	John Dalton Street was opened in 1846 by Manchester Corporation in honour of famous chemist, John Dalton, who in Manchester in 1803 developed the Atomic Theory which became the foundation of modern chemistry. President of Manchester Literary and Philosophical Society 1816-1844.

30 September 2016	Chemical structure of simple sugars, James Colquhoun Irvine and Thomas Purdie	College Gate, North Street, St Andrews, Fife, KY16 9AJ, UK	Near this site in 1903, James Colquhoun Irvine, Thomas Purdie and their team found a way to understand the chemical structure of simple sugars like glucose and lactose. Over the next 18 years this allowed them to lay the foundations of modern carbohydrate chemistry, with implications for medicine, nutrition and biochemistry.
10 June 2016	Beecham Research Laboratories	The Shop at Strood Green, 1 Tynedale Road, Betchworth, Surrey, RH3 7JD, UK	In 1957 scientists working for Beecham Research Laboratories at nearby Brockham Park discovered a chemical which they used to develop many new penicillins with unique properties for the treatment of bacterial infections. These medicines have relieved suffering and saved millions of lives worldwide.
01 April 2016	Sir John Cornforth	Kent Science Park, Broadoak Road, Sittingbourne, Kent, ME9 8XP, UK	Shell Research Ltd Milstead Laboratory of Chemical Enzymology. In recognition of the pioneering work carried out here when he was co-director of the laboratory. Cornforth led a team that revealed the detailed chemistry of how enzymes work, and explained how cholesterol builds up in the body. He was awarded the Nobel Prize in Chemistry in 1975.
03 November 2015	Sir Edward Frankland	Lancaster Royal Grammar School, East Road, Lancaster, LA1 3EF, UK	Professor of Chemistry. Attended this school 1837–1839. Discovered many new chemical compounds, made important contributions to chemical theory, and improved the quality of domestic water supplies. President of the Chemical Society and the Institute of Chemistry.
17 September 2015	Sir Humphry Davy	1 Market Place, Penzance, Cornwall, TR18 2JQ, UK	Apprentice apothecary to John Bingham Borlase in this building, 1795-1798. Progressed to the Medical Pneumatic Institution, Bristol, 1798 and to the Royal Institution, London, 1801. Davy established the nature of acids, identified 9 elements and invented the miner's safety lamp.
01 October 2014	Daniel Douglas Eley	School of Chemistry, University of Nottingham, Nottingham, NG7 2RD, UK	To mark the 100th birthday of Daniel Eley, pioneering physical chemist. His research, much of it conducted in Nottingham, bridges chemistry, physics and biology. It includes the Eley-Rideal mechanism of gas-surface reactions, organic semiconductors, discovery of the conductivity of DNA, ortho/para hydrogen conversion and understanding the structure of aqueous solutions.
23 September 2014	Saltend Chemicals Park	BP Chemicals Ltd, Saltend Chemicals Park, Saltend, East Yorkshire, HU12 8DS, UK	In recognition of 100 years of innovation in supplying the UK with transportation fuels and important base chemicals. Saltend has uniquely combined in one location the research, development and commercialisation of numerous new processes for the manufacture of organic acids, alcohols and their derivatives.

02 July 2014	Thomas Graham	Thomas Graham Building, University of Strathclyde, 295 Cathedral Street, Glasgow, G1 1XL, UK	Born in Glasgow and Professor of Chemistry at Anderson's University (now University of Strathclyde) from 1830–1837. His famous contributions to Science were Graham's Law of Diffusion and his pioneering work on dialysis. He founded the Chemical Society of London in 1841, and became Master of the Mint. He is commemorated by this building and by a statue in George Square.
20 June 2014	Johnson Matthey PLC	Johnson Matthey PLC, Orchard Road, Royston, Hertfordshire, SG8 5HE, UK	In recognition of the 40th anniversary of the world's first commercial autocatalysts being manufactured on this site, and the subsequent development of catalysts and filters for gasoline and diesel vehicles that have cleaned billions of tonnes of pollutants from the environment worldwide.
06 May 2014	Dorothy Hodgkin <sup>1</sup>	Department of Chemistry, University of Oxford, South Parks Road, Oxford, OX1 3TF, UK	Led pioneering work in this building from 1956–1972 and elsewhere in Oxford on the structures of antibiotics, vitamins and proteins including penicillin, vitamin B12 and insulin, using X-ray diffraction techniques for which she received the Nobel Prize in Chemistry in 1964.
21 November 2013	Ibuprofen, Dr Stewart Adams and Dr John Nicholson	BioCity Nottingham, Pennyfoot Street, Nottingham, NG1 1GF, UK	In recognition of the pioneering research work, here on Pennyfoot Street, by Dr Stewart Adams and Dr John Nicholson in the Research Department of Boots which led to the discovery of ibuprofen used by millions worldwide for the relief of pain.
21 November 2013	Ibuprofen and The Boots Company PLC	Building D6, Boots Beeston Factory Site, Dunkirk Industrial Estate, 1 Thane Road, Nottingham, NG90 1BS, UK	In recognition of the work during the 1980s by The Boots Company PLC on the development of ibuprofen which resulted in its move from prescription only status to over the counter sale, therefore expanding its use to millions of people worldwide.
15 October 2013	Thomas Andrews	Queen's University Belfast, University Road, Belfast, BT7 1NN, Northern Ireland	Close to this site, in 1869, Andrews discovered the 'critical temperature' for the liquefaction of carbon dioxide, the basis of cryogenics and of low temperature chemistry and physics.
24 July 2013	Surface enhanced Raman spectroscopy, Martin Fleischmann, Patrick J. Hendra and A. James McQuillan	Chemistry, University of Southampton, 12 University Road, Southampton, SO17 1BJ, UK	University of Southampton Chemistry. On this site in 1973, Martin Fleischmann, Patrick J. Hendra and A. James McQuillan recorded the first surface enhanced Raman spectra (SERS) leading to the development of a highly sensitive surface spectroscopic technique that is now used worldwide.

19 March 2013	The Reverend Ron Lancaster	Kimbolton School, Kimbolton, Huntingdon, Cambridgeshire, PE28 0EA, UK	For his contribution to fireworks research, development and displays and for services to the pyrotechnic industry.
21 November 2012	Professor The Lord George Porter of Luddenham	Wolfson Laboratories, Imperial College London, 7 Imperial College Road, Kensington, London, SW7 2AZ, UK	1985–2002 Chairman, Centre for Photomolecular Sciences and Visiting Professor, Imperial College. 1967 Nobel Laureate for the study of fast reactions by flash photolysis.
16 July 2012	Glucose Sensor, Allen Hill, Tony Cass and Graham Davis	Inorganic Chemistry Laboratory, University of Oxford, South Parks Road, Oxford, OX1 3QR, UK	In this laboratory on 20 July 1982, Allen Hill, Tony Cass and Graham Davis (Chemist) made the crucial discovery which led to the development of a unique electronic blood glucose sensor now used by millions of diabetics worldwide.
27 April 2012	James 'Paraffin' Young	Bennie Museum, 9-11 Mansefield Street, Bathgate, EH48 4HU, UK	In recognition of his outstanding contribution, started on a site close to here in Birniehill Bathgate, where in c. 1850 he processed torbanite ('cannel coal') to create the first commercial production of paraffin oil in the world, leading to the major shale oil industry in West Lothian.
08 December 2011	Royal Society of Chemistry Publishing	Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 2HY, UK	This plaque, at the home of the Royal Society of Chemistry's publishing operations, commemorates the 170th anniversary of the society's scientific publishing, which has made a profound contribution to the advancement of the chemical sciences.
28 October 2011	August Kekulé	University of Ghent, Aula Ugent, Voldersstraat 9, 9000, Ghent, Belgium <sup>2</sup>	Recognising his pioneering work at Ghent University (1858–1867) on structural and organic aromatic chemistry.
22 October 2011	ICI General Chemicals, Widnes Research Laboratory and Charles Suckling	Catalyst Science Discovery Centre, Mersey Road, Widnes, Cheshire, WA8 0DF, UK	In recognition of the outstanding scientific contribution made by Charles Suckling and others, close to this site in 1951, in the synthesis and subsequent commercial development of halothane, the world's first synthetic inhalation anaesthetic.
08 August 2011	Ernest Rutherford	Rutherford Building, University of Manchester, Coupland Street, Manchester, M13 9GP, UK	On the occasion of the 100th anniversary of the discovery of the atomic nucleus by Ernest Rutherford, a Nobel Laureate in Chemistry and pioneer in nuclear physics, at The University of Manchester.

30 March 2011	Unilever Research & Development Port Sunlight Laboratory	Unilever Research & Development Port Sunlight Laboratory, Wood Street, Birkenhead, Wirral, CH62 4UY, UK	In recognition of the outstanding scientific contribution to the home and personal care industry made by Unilever Port Sunlight's laboratory since 1911. 100 years on, the people on site continue to deliver innovative products to enhance the lives of billions of consumers around the world.
30 November 2010	Inorganic Chemistry Laboratory Oxford, John B. Goodenough with Koichi Mizushima, Philip C. Jones and Philip J. Wiseman	Inorganic Chemistry Laboratory, South Parks Road, Oxford, OX1 3QR, UK	Inorganic Chemistry Laboratory. Where in 1980, John B. Goodenough with Koichi Mizushima, Philip C. Jones and Philip J. Wiseman identified the cathode material that enabled development of the rechargeable lithium-ion battery. This breakthrough ushered in the age of portable electronic devices.
14 October 2010	Pfizer Sandwich	Pfizer, Discovery Park, Ramsgate Road, Sandwich, Kent, CT13 9ND, UK	In recognition of the significant and enduring contribution made by Pfizer Scientists to health and quality of life through the discovery, development and manufacture of novel medicines for human and animal use. Sandwich Research laboratories established 1957.
02 July 2010	Sanofi-Aventis Dagenham Site	Sanofi-Aventis, Rainham Road South, Dagenham, Essex, RM10 7XS, UK	In recognition of the pioneering research and manufacturing work carried out at the May & Baker (sanofi-aventis) Dagenham site in a wide range of chemical and pharmaceutical fields since 1934. These products continue to benefit patients and their quality of life around the world.
19 December 2009	Dr Elsie Widdowson	MRC Human Nutrition Research Unit, 120 Fulbourn Road, Cambridge, CB1 9NL, UK	This plaque is in recognition of the pioneering work in the nutrition science carried out by Dr Elsie Widdowson (1906–2000). Her research provided a foundation for the work which continues in this laboratory today to improve the health of the population.
25 November 2009	Harwell Laboratory	Harwell Campus Management HQ Building, Thomson Avenue, Oxford, OX11 0GD, UK	In recognition of the pioneering research and development work performed by scientists at Harwell since 1946. Their work has provided fundamental support in the development of nuclear power in the UK and a greater understanding of the chemistry of the actinide elements.

23 October 2009	Professor Edward Hughes	School of Chemistry, Bangor University, Bangor, Gwynedd, LL57 2DG, UK	Professor Edward (Ted) D Hughes FRS, who conducted ground breaking work on kinetics and mechanisms in organic chemistry 1943-48, played a prominent role in the 125 year history (1884-2009) of Chemistry at Bangor. Gwnaeth yr Athro Edward (Ted) D Hughes FRS waith arloesol ar gineteg a mecanwaith ym maes cemeg organig rhwng 1943 a 1948, gan chwarae rhan amiwg yn hanes cemeg ym Mangor (1884-2009).
04 August 2009	Professor Joseph Black	Joseph Black Building, University of Edinburgh, David Brewster Road, Edinburgh, EH9 3FJ, UK	Graduate of Medicine 1754. Professor of Chemistry 1766-1799. Discovered the Properties of Fixed Air (Carbon Dioxide). Promoter of the Scottish Chemical Industry.
04 August 2009	Professor Joseph Black	School of Chemistry, University of Glasgow, Joseph Black Building, University Avenue, Glasgow, G12 8QQ, UK	Student 1744-1752. Lecturer in Chemistry 1756-1766. Professor of Medicine 1757-1766. Discoverer of Latent Heat in the Old College, High Street.
03 February 2009	Sir Joseph Swan	The Literary & Philosophical Society of Newcastle, 23 Westgate Road, Newcastle-Upon-Type, NE1 1SE, UK	Chemist, physicist and inventor of the incandescent light bulb which he first demonstrated at a public lecture here on 3 February 1879. Nearby Mosley Street was the first street in the world to be lit by such electric bulbs.
28 November 2008	Professor Sir Christopher Ingold	The Chemistry Department, University College London, 20 Gordon Street, London, WX1H 0AJ, UK	During the period 1930–1970 Professor Sir Christopher Ingold pioneered our understanding of the electronic basis of structure, mechanism and reactivity in organic chemistry, which is fundamental to modern-day chemistry.
22 September 2008	Alderley Park	AstraZeneca, Alderley Park, Cheshire, SK10 4TF, UK	In recognition of the pioneering work carried out by chemists at the Alderley Park site since 1957 which has led to the discovery of therapeutic medicines, including beta-blockers and cancer therapies, that continue to provide benefits for patients throughout the world.
25 June 2008	Académie des Sciences, Paris and Sir Humphry Davy	Académie des Sciences, 23 Quai de Conti, 75006 Paris, France <sup>2</sup>	In tribute to the Institut de France for honouring British Chemist Sir Humphry Davy in 1808 and encouraging the international exchange of scientific knowledge.

16 June 2008	Dr John Snow	John Snow Public House, 39 Broadwick Street, Soho, London, W1F 9QJ, UK	Founding father of Epidemiology. In 1854 his research linked deaths to the water pump near this site and thus determined that cholera is a water borne disease.
23 November 2007	Jealott's Hill International Research Centre	Jealott's Hill International Research Centre, Bracknell, Berkshire, RS42 6EY, UK	This plaque is in recognition of the pioneering work carried out by scientists on this site since 1928. Research at Jealott's Hill has led to global developments in agriculture which have helped feed people and improve their quality of life.
24 September 2007	Clarendon Laboratory and H. G. J. Moseley	Clarendon Laboratory, University of Oxford, South Parks Road, Oxford, OX1 3PU, UK	Clarendon Laboratory where H. G. J. Moseley (1887-1915) completed his pioneering studies on the frequencies of X-rays emitted from the elements. His work established the concept of atomic number and helped reveal the structure of the atom. He predicted several new elements, and laid the ground for a major tool in chemical analysis.
07 June 2007	John Dalton	John Dalton Cottage, Eaglesfield, Cockermouth, Cumbria, CA13 0SD, UK	1778 -1793: Teacher (Eaglesfield, Pardshaw, Kendal). 1793 -1844: Scientist and Educator (Manchester). 1817 -1844: President, Manchester Lit & Phil Soc. Laws of Partial Pressures and Multiple Proportions, recognised Colour Blindness and revolutionised Chemistry through his Atomic Theory.
03 May 2007	Professor Sir Derek Barton	Imperial College London, South Kensington Campus, London, SW7 2AZ, UK	1938–1942 Student, 1957–1978 Professor, Imperial College. 1969 Nobel Laureate for new concept of organic conformational analysis. Erected in the Centenary Year of Imperial College London.
03 May 2007	Professor Sir Geoffrey Wilkinson	Imperial College London, South Kensington Campus, London, SW7 2AZ, UK	1939–1943 Student, 1956–1996 Professor, Imperial College 1973 Nobel Laureate for pioneering studies on organometallic compounds. Erected in the Centenary Year of Imperial College London.
19 October 2006	Sir William H. Perkin	Sudbury Neighbourhood Centre, 809 Harrow Road, Wembley, Middlesex, HA0 2LP, UK	The sale of his Perkin and Sons dyeworks in Greenford enabled him to build here in 1876 the New Hall, a meeting place for the people of Sudbury, and a precursor of this Neighbourhood Centre.
19 October 2006	Sir William H. Perkin	The site of original Perkin and Sons Dyeworks, Oldfield Lane, Greenford, Middlesex	Sir William H. Perkin (1838-1907) discovered mauveine, the world's first synthetic dyestuff, in 1856. He and his brother Thomas produced mauveine from a factory on this site in 1857, and later alizarin, thus laying the foundations of the organic chemicals industry. This replaces a centenary plaque unveiled by Sir R Robinson in 1957.

31 July 2006	Hexagon Site	Hexagon Site, Crumpsall Vale, Blackley, Manchester, M9 8GQ, UK	This plaque recognises Hexagon Site as a Chemical Landmark. Since 1786, this site has been at the heart of dyestuffs development and production in the UK.
09 December 2005	Natural Product Chemistry and Lord Alexander Todd	Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge, CB2 1EW, UK	Research in the Department of Chemistry at Cambridge over more than 50 years has established the structures and many principles of the synthesis of molecules that control the processes of life. Notably, Lord Alexander Todd FRS and his co-workers invented the chemical synthesis of nucleotides, which led to the elucidation of the chemical structure of DNA.
07 November 2005	Liquid Crystal Research and Professor George Gray	Department of Chemistry, University of Hull, Salmon Grove, Hull, HU6 7SZ, UK	Research in the Department of Chemistry at Hull over more than 50 years has established many principles of the design, synthesis and properties of liquid crystals for applications in display devices. Notably, Professor George Gray FRS, CBE and his co-workers invented the cyanobiphenyl class of materials, which were key to developing the first successful liquid crystal display devices.
10 December 2004	Sir William Ramsay	University College London, Gower Street, London, WC1E 6BT, UK	Between 1894 and 1910, in a laboratory near this site, William Ramsay discovered and characterised the noble gases, completing the structure of the Periodic Table of Elements.
04 November 2004	Reginald Gibson and Eric Fawcett	Winnington Laboratory, Winnington Hall, Northwich, Cheshire, CW8 4DU, UK	To commemorate the discovery of polyethylene (better known as polythene) by R O Gibson and E W Fawcett on 27 March 1933 working in the former ICI research laboratory close to this site discovery of polyethylene (better known as polythene) by R O Gibson and E W Fawcett on 27 March 1933 working in the former ICI research laboratory close to this site.
24 September 2004	Dyson Perrins Laboratory	Dyson Perrins Laboratory, University of Oxford, South Parks Road, Oxford, OX1 3QY, UK	The laboratory was a major centre for Organic Chemistry from 1916-2003. It had four Heads in that time, the Waynflete Professors W H Perkin Jnr, Sir Robert Robinson OM, Sir Ewart Jones, and Sir Jack Baldwin. Sir Robert was awarded the Nobel Prize in 1947 for work done here on natural products.
17 March 2004	Professor Frederic S. Kipping	School of Chemistry, University of Nottingham, Nottingham, NG7 2RD, UK	Commemorating the pioneering work into the development of silicone polymers conducted by Professor Frederic S. Kipping, FRS, first Sir Jesse Boot Professor of Chemistry, at the University College laboratories in Shakespeare Street, Nottingham (1897-1928), and the Trent Building laboratories, University Park (1928-1936). His research formed the basis for the worldwide development of the synthetic rubber and silicone-based lubricant industries.



14 October 2003	John Dalton <sup>3</sup>	Peace Garden, Mosley Street, Manchester, M40 9NB, UK	John Dalton 1766-1844 taught natural philosophy and mathematics at the Academy on this site 1793–1800. His Atomic Theory was first presented on 21 October 1803 to the Manchester Literary and Philosophical Society of which he was President 1816–1844.
01 July 2003	Sir William Henry Bragg and Sir William Lawrence Bragg	School of Chemistry, University of Leeds, Leeds, LS2 9JT, UK	Near this site, between 1912 and 1914, Sir William H. Bragg and his son Sir W. Lawrence Bragg carried out research that led to the Nobel Prize in Physics in 1915. Their work formed the basis of crystal structure determination by X-ray diffraction which has made an outstanding contribution to chemical science.
22 May 2003	Former site of the Royal College of Chemistry	299 Oxford Street, London, W1C 2DZ, UK	The College was modelled on Liebig's Laboratory at Giessen, Germany by AW Hofmann. Here, Hofmann inspired the young to do great things in chemistry, and relate them to both academic and everyday life.
01 May 2003	Rosalind Franklin, Maurice Wilkins, Raymond Gosling, Alexander Stokes and Herbert Wilson	Strand Campus, King's College London, WC2R 2LS, UK	Near this site Rosalind Franklin, Maurice Wilkins, Raymond Gosling, Alexander Stokes and Herbert Wilson performed experiments that led to the discovery of the structure of DNA. This work revolutionised our understanding of the chemistry behind life itself.
12 September 2002	Professor Sir Alec Jeffreys	Department of Genetics, University of Leicester, Leicester, LE1 7RH, UK	In 1984 the principles behind DNA fingerprinting were discovered in the building by Professor Sir Alec Jeffreys and his research group.
17 April 2002	Royal Gunpowder Mills	Royal Gunpowder Mills, Waltham Abbey, Beaulieu Drive, EN9 1JY, UK	For over 300 years explosives and propellants were developed and produced on this site. Work performed here has been influential in the development of the Bouncing Bomb, Kevlar and Ejector Seat technology.
23 November 2001	Archer Martin and Richard Synge	Bass Brewers plc, Longfield House, Headingley Park, Leeds, LS6 1JF, UK	Close to this site, in the Torridon Laboratories of the Wool Industries Research Association between 1940 and 1943, Dr Archer John Porter Martin and Dr Richard Laurence Millington Synge developed the technique of partition chromatography. Originally developed for the separation of amino acids from wool proteins, the technique became the basis for future widespread chromatographic analysis in research and development in many branches of chemistry. Drs Martin and Synge were jointly awarded the Nobel Prize for Chemistry in 1952 for this research.

14 May 2001	Dorothy Hodgkin	Department of Chemistry, University of Oxford, South Parks Road, Oxford, OX1 3TF, UK	To recognise the work of Nobel-prize winning X-ray Crystallographer Dorothy Hodgkin. She elucidated the structures of the antibiotic penicillin and vitamin B12, a treatment for pernicious anaemia, thereby augmenting the synthesis and production of these compounds. Together with her colleagues she also discovered the structure of insulin, the hormone responsible for carbohydrate metabolism and employed therapeutically in the management of diabetes
21 March 2001	Johnson Matthey Technology Centre	Johnson Matthey Technology Centre, Blounts Court Road, Sonning Common, Reading, Berkshire, RG4 9NH, UK	Pioneering work has been carried out in these laboratories since 1970 on the chemistry of Platinum Group Metals for the development of car exhaust catalysts and the design of platinum anti-cancer drugs. Exhaust catalysts are fitted to most modern vehicles and make a global contribution to air quality. Platinum-based drugs play a major role in cancer therapy.
07 August 2000	The Discovery of Oxygen by Joseph Priestley	Bowood House, Old Road, Derry Hill, Calne, Wiltshire, SN11 0LZ, UK	Unitarian minister, teacher, author, and natural philosopher — was the Earl of Shelburne's librarian and tutor to his sons. In this room, then a working laboratory, Priestley pursued his investigations of gases. On 1 August 1774 he discovered oxygen. Twenty years later he emigrated to America where he continued his research at his home and laboratory in Northumberland, Pennsylvania.
19 November 1999	Development of Penicillin <sup>4</sup>	The Alexander Fleming Laboratory Museum, St Mary's Hospital, 135a Praed Street, Paddington, London, W2 1QY, UK	In 1928, at St. Mary's Hospital, London, Alexander Fleming discovered penicillin. This discovery led to the introduction of antibiotics that greatly reduced the number of deaths from infection. Howard W. Florey, at the University of Oxford working with Ernst B. Chain, Norman G. Heatley and Edward P. Abraham, successfully took penicillin from the laboratory to the clinic as a medical treatment in 1941. The large-scale development of penicillin was undertaken in the United States of America during the 1939-1945 World War, led by scientists and engineers at the Northern Regional Research Laboratory of the US Department of Agriculture, Abbott Laboratories, Lederle Laboratories, Merck & Co., Inc., Chas. Pfizer & Co. Inc., and E.R. Squibb & Sons. The discovery and development of penicillin was a milestone in twentieth century pharmaceutical chemistry.
24 November 1997	The discovery of histamine H2-receptor antagonists <sup>4</sup>	GlaxoSmithKline, New Frontiers Science Park, Third Avenue, Harlow, Essex, CM19 5AW, UK	Pioneering work by scientists in the laboratories of this company led to the first clinically effective inhibitor of gastric acid secretion. The worldwide introduction of cimetidine (Tagamet) revolutionized the treatment of peptic ulcers by dramatically reducing the need for surgical intervention. The work is recognized as the classic example of the systematic modification of a natural messenger substance (histamine) to create a therapeutically useful blocking agent. Effective commercialization of this discovery was greatly facilitated by the subsequent investigation and design of novel synthetic routes, which led to the development of an efficient chemical manufacturing process.

1980	Joseph Priestly <sup>5</sup>	St Michael's Catholic Church, Moor Street, Birmingham, B4 7UG, UK	On this site in the former New Meeting House Joseph Priestley LLD FRS scholar, scientist, theologian and discoverer of oxygen ministered to his congregation from 1870 to 1791.
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<sup>1</sup> This plaque was awarded to re-honour Dorothy Hodgkin, and the plaque replaces the original 2001 plaque.

<sup>2</sup> International Chemical Landmark Award.

<sup>3</sup> Awarded in jointly with Manchester Literary and Philosophical Society.

<sup>4</sup> Awarded jointly with The American Chemical Society (ACS) as part of the ACS International Historic Chemical Landmark scheme.

<sup>5</sup> Awarded jointly with the Birmingham Civic Society.