

**Full list of all the articles published in Volumes 1-33 of Chemistry Review,  
arranged by feature**

**100 years ago**

| <b>Title</b>                                | <b>Vol.</b> | <b>Issue</b> |
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| Robert Wilhelm Bunsen (1811-1899)           | 8           | 3            |
| Edward Frankland (1825-1899)                | 9           | 2            |
| Henry Moseley: understanding atomic numbers | 23          | 1            |
| Niels Bohr and atomic structure             | 23          | 2            |

**200 years ago**

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| Joseph Black (1728-1799) | 9           | 1            |

## Answer back

| Title   | Exam Board  | Vol. | Issue |
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| The main features of the atomic spectrum of hydrogen                  | JMB   | 1    | 1     |
| A question of organic reactions                                       | JMB   | 1    | 2     |
| Chemistry from group V  | University of London Schools Examinations 1989  | 1    | 3     |
| A question of ideality  | JMB   | 1    | 4     |
| Rates and orders of reaction  | Oxford and Cambridge Examinations Board   | 1    | 5     |
| Acids and equilibria  | JMB   | 2    | 1     |
| Testing and estimating ions   | JMB   | 2    | 2     |
| Alternative fuels   | Salters' Advanced Chemistry   | 2    | 3     |
| Have you got redox potential  | JMB   | 2    | 4     |
| A question of applying knowledge                                      | Salters' Advanced Chemistry   | 2    | 5     |
| Silicone polymers   | University of London Examinations and Assessment Council, 1992 Nuffield A-level examination | 3    | 1     |
| Distinguishing between pairs of organic compounds                     | JMB Syllabus B paper 2, Section B, 1990   | 3    | 2     |
| The Chemistry of Life   | Nuffield Chemistry Special Study 1989   | 3    | 3     |
| Social Economic, Environmental and Technological aspects of Chemistry | Oxford & Cambridge, Paper 3 1992  | 3    | 4     |
| Born-Haber cycle and lattice energies                                 | Nuffield Paper 2, ULEAC 1988  | 3    | 5     |
| A Balancing Act   | JMB 1991, paper IIB   | 4    | 1     |
| Petroleum technology  | Salters' Advanced Level Chemistry   | 4    | 2     |
| The importance of revision  | Salters' Paper 1, 1992  | 4    | 3     |
| Directing aromatic substitution                                       | JMB Syllabus A and Syllabus B 1991  | 4    | 4     |
| Mr Midgeley's discovery CFCs  | Salters A level examinations 1994   | 4    | 5     |
| Tackling calculations   | Nuffield Chemistry 1993, Paper 1  | 5    | 1     |
| The mystery of the dead deer  | Salters A-level 1994  | 5    | 2     |
| Ammonia   | Oxford and Cambridge Paper 3, Section A 1992  | 5    | 3     |
| Transition Metals   | NEAB Paper B Section IIA, 1995  | 5    | 4     |
| An Unusual Beetle   | Salter A level Paper 1 1995   | 5    | 5     |
| Reactions of Halogenoalkanes with Potassium Hydroxide                 | NEAB  | 6    | 1     |
| A Potentially Dangerous Fertiliser                                    | Salters (OCR)   | 6    | 2     |
| Knocking Your Organic Chemistry into Shape                            | Oxford & Cambridge  | 6    | 3     |
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| Structures Equations & Mechanisms                                     | NEAB  | 7    | 1     |
| Kinetics  | NEAB  | 7    | 2     |
| Planning Your Chemistry   | Nuffield  | 7    | 3     |
| Periodic Pattern  | NEAB  | 7    | 4     |

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| Does faster mean further?                     | WJEC               | 8  | 2 |
| Organic Chemistry                             | NEAB               | 8  | 3 |
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| Obtaining Marks from obtaining Methods        | NEAB               | 8  | 5 |
| Ethanol as a Fuel                             | Salters (OCR)      | 9  | 1 |
| Solving a chemical jigsaw puzzle              | NEAB               | 9  | 2 |
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| Phosphorus and friends                        | EdExcel            | 9  | 4 |
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| Testing much more than fertilizers            | EdExcel            | 10 | 1 |
| Knowledge and how to apply it                 | NEAB               | 10 | 2 |
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| From dolomite to magnesium oxide                  | 2    | 5     |
| Versatile silicones                               | 3    | 1     |
| Infrared spectrometry                             | 3    | 2     |
| Gold, frankincense and myrrh                      | 3    | 3     |
| History of the atmosphere                         | 3    | 4     |
| Chemistry can detect faulty genes                 | 3    | 5     |
| A prize collection (Nobel prize winners & stamps) | 4    | 1     |
| Gas chromatography                                | 4    | 2     |
| Water   | 4    | 3     |
| Molecular fossils                                 | 4    | 4     |
| The rocaglamide story                             | 4    | 5     |
| Getting your pinta from the cow                   | 5    | 1     |
| Salt of the earth                                 | 5    | 2     |
| Fractional Distillation                           | 5    | 3     |
| Nobel   | 5    | 4     |
| Nuclear magnetic resonance                        | 5    | 5     |
| First class organic chemistry                     | 6    | 1     |
| Ways of representing proteins                     | 6    | 2     |
| Chemistry in the open air                         | 6    | 3     |
| Mass spectrometry                                 | 6    | 4     |
| Water treatment                                   | 6    | 5     |
| A breath of fresh air                             | 7    | 1     |
| Chocolate   | 7    | 2     |
| Challenge of materials                            | 7    | 3     |
| Thermal analysis                                  | 7    | 4     |
| Seeing atoms                                      | 7    | 5     |
| pH: Who needs to know                             | 8    | 1     |
| Medicines in the garden                           | 8    | 2     |
| Chemistry under the microscope                    | 8    | 3     |
| Chemistry on track                                | 8    | 4     |
| The brewer's art                                  | 8    | 5     |
| Gemstones   | 9    | 1     |
| Fireworks   | 9    | 2     |
| Molecules of the millennium                       | 9    | 3     |
| Generating electricity                            | 9    | 4     |
| Testing air quality                               | 9    | 5     |
| Visual elements                                   | 10   | 1     |
| Phosphorus  | 10   | 2     |

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| It's a chiral world!   | 10 | 3 |
| Chemistry colour & light   | 10 | 4 |
| Food to dye for  | 11 | 1 |
| Antioxidants   | 11 | 2 |
| Biodiesel  | 11 | 3 |
| Polymer protected professionals                                  | 11 | 4 |
| Dyeing hair  | 12 | 1 |
| The barking dog  | 12 | 2 |
| Around the world with chemistry                                  | 12 | 3 |
| Modelling the double helix                                       | 12 | 4 |
| Machair  | 13 | 1 |
| The heat is on   | 13 | 3 |
| Molecules in a virtual world                                     | 13 | 4 |
| The Magnificent Seven: magic bullets of 21 <sup>st</sup> century | 14 | 1 |
| Science is art   | 14 | 2 |
| Antifreeze   | 14 | 3 |
| Magnetic resonance imaging                                       | 14 | 4 |
| Probably the most important reactions in the world               | 15 | 2 |
| Camping with chemistry   | 15 | 3 |
| Rocks that glow in the dark                                      | 15 | 4 |
| Stimulating chemistry  | 16 | 1 |
| Copper on tap?   | 16 | 2 |
| Seeing the nanoworld: atomic structures and reaction dynamics    | 17 | 2 |
| Getting plastered  | 17 | 4 |
| The disguises of carbon  | 18 | 1 |
| Hydrogen bonds: holding the world together                       | 18 | 4 |
| The Martian poles  | 19 | 1 |
| Atoms to patterns  | 19 | 2 |
| Chemistry in the atmosphere                                      | 19 | 3 |
| Magnetic marvel  | 20 | 2 |
| Chemistry of the cosmos  | 21 | 3 |
| Decoding skeletal secrets  | 22 | 1 |
| Kevlar: miracle material   | 22 | 4 |
| Hair-raising chemistry   | 23 | 1 |
| X-ray eyes on a molecular world                                  | 25 | 1 |
| Medicinal or murderous: Analysing a Victorian medicine cabinet   | 25 | 3 |
| Periodic table updated   | 26 | 1 |
| Is every snowflake unique?                                       | 26 | 2 |
| Mass, moles and gas equations                                    | 26 | 3 |
| Know your glassware  | 26 | 4 |
| The chemistry behind baking                                      | 27 | 1 |
| Raku pottery: Redox in action                                    | 27 | 3 |
| Saving SS <i>Great Britain</i> : Redox in action                 | 27 | 4 |
| Elements of smartphones  | 28 | 1 |
| Flying over fires  | 28 | 2 |
| Periodic table completed?  | 28 | 3 |
| What shape is my molecule?                                       | 28 | 4 |
| Cave chemistry   | 29 | 1 |
| The elephant's toothpaste experiment                             | 29 | 2 |
| Do you know your functional groups?                              | 29 | 3 |

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| Acids and their uses                      | 29 | 4 |
| Bond movies                               | 30 | 1 |
| The chemistry of pearls                   | 30 | 2 |
| Polymers in the kitchen                   | 30 | 3 |
| Weather warning: rain                     | 30 | 4 |
| Walking inside cells with virtual reality | 31 | 1 |
| How to breath on Mars                     | 31 | 3 |
| Fire obsidian                             | 32 | 1 |
| Colourful chemistry                       | 32 | 4 |
| Breakfast chemistry                       | 33 | 3 |

## Lab page

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| Recrystallisation - purification of solids                           | 2    | 5     |
| Thin-layer chromatography TLC  | 3    | 1     |
| Making standard solutions  | 3    | 2     |
| Using a separating funnel  | 3    | 3     |
| Distillation   | 3    | 4     |
| Melting point determination  | 3    | 5     |
| Measuring pH   | 4    | 1     |
| Extracting and studying enzymes                                      | 4    | 2     |
| Measuring volume   | 4    | 3     |
| Solvent extraction   | 4    | 4     |
| Colorimeters   | 4    | 5     |
| Growing crystals   | 5    | 1     |
| Safe heating   | 5    | 2     |
| Observing  | 5    | 3     |
| Electrochemical cells  | 5    | 4     |
| Steam distillation   | 5    | 5     |
| Volumetric analysis  | 6    | 1     |
| Testing for metal ions   | 6    | 2     |
| Separating solids from liquids                                       | 6    | 4     |
| Handling gases   | 6    | 5     |
| Testing for gases  | 7    | 1     |
| Measuring the boiling point of a liquid                              | 7    | 5     |
| Measuring pH   | 8    | 1     |
| What is chromatography?  | 8    | 2     |
| Recrystallisation  | 8    | 4     |
| Refluxing and distillation   | 9    | 2     |
| Calorimetry  | 9    | 4     |
| Assessing the risks in practical work                                | 10   | 1     |
| Oxidation of alcohols  | 10   | 4     |
| Experimental error and error analysis                                | 11   | 2     |
| Making a standard solution   | 12   | 2     |
| Colorimetry  | 12   | 3     |
| Observing and recording  | 13   | 1     |
| Distillation   | 14   | 1     |
| Not all indicators are equal   | 14   | 2     |
| Thin layer chromatography  | 14   | 3     |
| Melting points and boiling points                                    | 14   | 4     |
| Electrode potentials   | 15   | 3     |
| How to be a lab success: using QuickFit apparatus                    | 16   | 1     |
| How to be a lab success: titrations, crystals, separating and mixing | 16   | 4     |
| Identifying an unknown organic compound                              | 17   | 3     |
| Planning your own experiment   | 19   | 3     |
| Heating under reflux   | 20   | 2     |
| Infrared spectrometers   | 21   | 2     |
| Flame tests and emission spectra                                     | 21   | 4     |
| Recrystallisation  | 22   | 2     |
| Determining the yield of a reaction                                  | 22   | 3     |

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| Performing the perfect titration                           | 23 | 2 |
| Steam distillation   | 23 | 3 |
| Chromatography   | 24 | 3 |
| Extracting caffeine from tea leaves                        | 25 | 1 |
| How to make skin cream                                     | 25 | 2 |
| Esterification   | 25 | 3 |
| Synthesising aspirin                                       | 26 | 1 |
| Nitration of an arene                                      | 26 | 2 |
| Make your own dye  | 26 | 3 |
| Volumetric analysis  | 27 | 2 |
| Testing turmeric   | 27 | 4 |
| Constructing an electrochemical cell                       | 28 | 4 |
| Analysing limescale remover by acid-base titration         | 29 | 2 |
| Performing your own chemistry research                     | 30 | 1 |
| Titrating white wine                                       | 30 | 3 |
| Iron in white wine   | 30 | 4 |
| How did lockdown affect air quality?                       | 31 | 1 |
| Error and uncertainty                                      | 31 | 4 |
| Chemistry in the kitchen: determining an activation energy | 32 | 3 |
| Extracts from a garden                                     | 32 | 4 |
| Ultraviolet-visible spectroscopy                           | 33 | 2 |

## Making and doing

| Title                                      | Vol. | Issue |
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| Model of buckminsterfullerene              | 1    | 1     |
| Models of Clay                             | 1    | 2     |
| Elementary crossword                       | 1    | 3     |
| Asymmetric crystals of tartaric acid salts | 1    | 4     |
| Spreadsheets for calculations              | 1    | 5     |
| Gas testing crossword                      | 2    | 1     |
| Models of zeolites                         | 2    | 2     |
| Wordsearch                                 | 2    | 3     |
| Cooking with dough                         | 2    | 4     |
| Crossword                                  | 3    | 1     |
| Puzzle page                                | 3    | 2     |
| Solid liquid                               | 3    | 4     |
| Model of DNA molecule                      | 3    | 5     |
| Elementary spelling                        | 4    | 1     |
| History of the Bunsen burner               | 4    | 3     |
| Using natural dyes                         | 4    | 5     |
| Chemical definitions                       | 5    | 1     |
| Crystal-growing challenge                  | 5    | 2     |
| The sweet smell of danger                  | 5    | 3     |
| Quiz                                       | 5    | 4     |
| Chemical dingbats                          | 5    | 5     |
| Polymer word search                        | 6    | 1     |
| Anagrams                                   | 6    | 2     |
| Dr Beaker                                  | 6    | 5     |
| Element search                             | 7    | 1     |
| Chemistry is fun                           | 7    | 2     |
| Surface tension                            | 7    | 3     |
| Logical chemistry                          | 8    | 1     |
| Neils Bohr puzzle                          | 8    | 2     |
| Gakistuf                                   | 9    | 1     |
| Dr Beaker                                  | 9    | 2     |
| Dr Beaker                                  | 9    | 4     |
| Fun with hydrogels                         | 10   | 2     |
| 3D models                                  | 10   | 3     |
| Fizz: making sherbet                       | 11   | 1     |
| Calculating carbon dioxide                 | 11   | 2     |
| Popcorn explosions                         | 12   | 1     |
| Bubbles                                    | 12   | 3     |
| DIY DNA                                    | 12   | 4     |
| Chemical dingbats                          | 14   | 1     |
| More chemical dingbats                     | 14   | 2     |
| Inkvestigation                             | 15   | 1     |
| Chemical crossword                         | 15   | 2     |
| Chemical sudoku                            | 15   | 3     |
| Elemental sudoku                           | 15   | 4     |
| Poetic chemistry                           | 16   | 1     |
| Elementary crossword                       | 17   | 1     |

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| Trace elements                                    | 17 | 2 |
| Radioactive sudoku                                | 17 | 3 |
| Hydrogen bonds: experiments to try at home        | 18 | 4 |
| Wonder in carbon land: build your own bucky balls | 19 | 2 |
| Numbercross                                       | 20 | 1 |
| Transition metal riddles                          | 20 | 3 |
| Build your own spectroscope                       | 21 | 4 |
| Summing up fertilisers                            | 22 | 1 |
| Chemical conundrum                                | 23 | 1 |
| Elementary clues                                  | 24 | 1 |
| Chemword  | 24 | 2 |
| Isogram   | 25 | 1 |
| Elemental acrostic                                | 25 | 2 |
| Who said that?                                    | 25 | 3 |
| Molecular crossword                               | 26 | 1 |
| Chemword  | 26 | 2 |
| Chemical vocabulary                               | 27 | 2 |
| Does warm water freeze faster than cold water?    | 27 | 3 |
| Chemical conundrum                                | 27 | 4 |
| Systematic names                                  | 28 | 3 |
| Scrambled scientists                              | 29 | 1 |
| Chemistry in knots                                | 29 | 1 |
| Mystery metal                                     | 29 | 3 |
| Red cabbage indicators                            | 29 | 3 |
| Chemical crossword                                | 29 | 4 |
| Crossword chemistry                               | 30 | 2 |
| Element Hunt                                      | 30 | 4 |
| Chemistry crossword                               | 31 | 2 |
| Crossword chemistry                               | 31 | 3 |
| Revision crossword                                | 31 | 4 |
| Chemistry crossword                               | 32 | 1 |
| Chemistry crossword                               | 32 | 2 |
| Chemistry crossword                               | 32 | 3 |
| Chemistry crossword                               | 32 | 4 |
| Chemistry crossword                               | 33 | 1 |
| Chemistry crossword                               | 33 | 2 |
| Chemistry crossword                               | 33 | 3 |
| Chemistry crossword                               | 33 | 4 |

## People / All in a day's work / Careers in chemistry

| Name                  | Job   | Vol. | Issue |
|-----------------------|---|------|-------|
| Hart, Judith          | Freelance Journalist  | 1    | 3     |
| Knight, Barry         | Ancient Monument Laboratories (English Heritage)  | 1    | 4     |
| Gregory, Peter        | Senior Scientist (ICI Specialty Colours Group)  | 2    | 3     |
| Hamer, Pam            | Forensic Scientist  | 2    | 5     |
| Senior, Clare         | Analytical Chemist in Packaging Research  | 3    | 4     |
| Crawley, Frank        | Chemical Engineer (ICI, BP), Authority on safety of industrial processes                                | 4    | 3     |
| Tarasova, Natalia     | Radiation Chemist, Professor of Industrial Ecology, Mendeleev University of Chemical Technology, Moscow | 4    | 4     |
| Hutchinson, Ann       | Process Chemist (Rhone-Poulenc Agriculture)   | 5    | 1     |
| Sutton, Jane          | Press and Publicity Officer (Royal Society of Chemistry)  | 5    | 2     |
| Osman, Robert         | Plant Manager, Pigment Dispersion Plant, Yorkshire Chemicals  | 5    | 3     |
| Owen, Nick            | Innovations Marketing Manager, Hickson & Welch  | 5    | 4     |
| Hewitt, Chris         | Brand Manager, Aldrich UK   | 5    | 5     |
| Hazel, Nick           | Issues Manager, BP Chemicals  | 6    | 1     |
| Hodgson, Anne         | University Chemistry Department   | 6    | 3     |
| Levitt, Melissa       | Commissioning Editor  | 6    | 5     |
| Hockley, Sian         | Patent Agent  | 7    | 5     |
| Julie Hall            | Antarctic Research  | 8    | 2     |
| Louise Scarry         | Granular Detergent Technology   | 8    | 5     |
| O'Brien, Peter        | University Lecturer   | 9    | 3     |
| Walker, Karen         | Agrochemical Registration Specialist  | 9    | 5     |
| Tinkler, Suzanne      | Confectionery product developer   | 11   | 4     |
| Wevill, Dave          | Antarctic Survey  | 13   | 2     |
| Barnham, Rachel       | Forensic Scientist  | 14   | 3     |
| Macdonald, Anthony    | Biomedical researcher   | 18   | 4     |
| Hardy, Jeff           | UK Energy Research Centre   | 19   | 4     |
| Davison, Rachael      | Cosmetic scientist  | 29   | 2     |
| Gomes Chagas, Luciana | Battery Technologies Researcher   | 30   | 2     |
| Georgina Cuckston     | Science communication manager, Mars Global Food Safety Centre (GFSC)                                    | 31   | 2     |
| Hodgson, Anne         | Chemistry: your future  | 33   | 1     |

## Project page

| <b>Title</b>                            | <b>Vol.</b> | <b>Issue</b> |
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| Decomposing hydrogen peroxide           | 5           | 1            |
| What's in water?                        | 5           | 2            |
| The reactions of metals with acids      | 5           | 3            |
| Making light of Project work            | 5           | 4            |
| There's more to Vitamin C than Brussels | 5           | 5            |
| Reactions that don't add up             | 6           | 1            |
| Clock reactions                         | 6           | 2            |
| Aspirin                                 | 6           | 3            |
| Investigating enzymes                   | 6           | 4            |
| How accurate are titrations?            | 7           | 1            |
| What's in wine                          | 7           | 3            |
| Ion exchange resins                     | 7           | 4            |
| Oscillating reactions                   | 8           | 3            |
| Adsorption and inclusion                | 8           | 4            |
| Concentration of copper ions            | 9           | 1            |
| Dyes and dyeing                         | 10          | 1            |
| A Reaction that speeds itself up        | 11          | 3            |
| Anyone for spaghetti and peas?          | 11          | 4            |
| How quickly does bleach deteriorate?    | 16          | 3            |

## Remember remember

| <b>Title</b>           | <b>Vol.</b> | <b>Issue</b> |
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| Using mnemonic methods | 8           | 1            |
| The story system       | 8           | 2            |
| The loci system        | 8           | 3            |
| The peg method         | 8           | 4            |

## Research team

| <b>Title</b>                                   | <b>Vol.</b> | <b>Issue</b> |
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| Are you part of a research team?               | 8           | 1            |
| Naphthazarin, PDT and the fight against cancer | 8           | 2            |
| The problem with PET                           | 8           | 4            |
| Are you part of a research team?               | 9           | 1            |
| Nitric oxide as a synthetic reagent            | 9           | 5            |
| Pushing back the frontiers...                  | 10          | 1            |

## Revision note

| Title  | Vol. | Issue |
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| Bonding between molecules                              | 1    | 1     |
| Spectroscopy   | 1    | 2     |
| Electrolysis   | 1    | 3     |
| Shapes of molecules and electron pair repulsion theory | 1    | 4     |
| Interpreting mass spectra                              | 1    | 5     |
| What makes a reaction go?                              | 2    | 1     |
| Redox (and oxidation numbers)                          | 2    | 2     |
| Energy profiles  | 2    | 3     |
| An overview of organic reactions                       | 2    | 4     |
| Acids  | 2    | 5     |
| The Periodic Table                                     | 3    | 1     |
| Testing for functional groups                          | 3    | 2     |
| A new angle on bonding                                 | 3    | 3     |
| Solidification of solutions                            | 3    | 4     |
| Melting point determination                            | 3    | 5     |
| The transition metals                                  | 4    | 1     |
| Naming aliphatic organic compounds                     | 4    | 2     |
| Keeping track of energy changes                        | 4    | 5     |
| Drawing organic compounds                              | 5    | 1     |
| Born-Haber cycles and lattice energies                 | 5    | 2     |
| Melting and boiling points                             | 5    | 3     |
| Keeping things short                                   | 5    | 4     |
| Acids & bases  | 5    | 5     |
| Acid-base indicators and buffer solutions              | 6    | 1     |
| Ultraviolet and visible spectra                        | 6    | 2     |
| Kinetics   | 6    | 4     |
| Group 4  | 6    | 5     |
| Identifying gasses                                     | 7    | 1     |
| Intermolecular bonds                                   | 7    | 2     |
| Isomerism  | 7    | 3     |
| Halogens   | 8    | 1     |
| Spider diagrams  | 8    | 2     |
| The alkanes  | 8    | 3     |
| Changing state   | 9    | 1     |
| Exam tactics   | 9    | 2     |
| Transition metal complexes I                           | 9    | 3     |
| Transition metal complexes II                          | 9    | 4     |
| Organic synthetic pathways                             | 9    | 5     |
| What is isomerism?                                     | 10   | 3     |
| Amines   | 10   | 4     |
| Gases Part 1   | 11   | 1     |
| Calculations involving masses                          | 11   | 2     |
| Gases Part 2   | 11   | 3     |
| Trends in period 3 elements                            | 11   | 4     |
| The elements in group 2                                | 12   | 2     |
| Titrations   | 12   | 3     |
| Nucleophiles   | 12   | 4     |

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| Moles – the basics   | 13 | 1 |
| Calculating pH   | 13 | 2 |
| Carboxylic acids   | 13 | 3 |
| Establishing a rate equation                               | 14 | 2 |
| Aliphatic organic compounds                                | 15 | 1 |
| Summary of reactions for benzene/aromatic compounds        | 15 | 2 |
| From creaking joints to saving a steamship                 | 15 | 3 |
| Bonding: sticking atoms together                           | 16 | 1 |
| Interpreting infrared spectra                              | 16 | 2 |
| Classifying organic reactions                              | 16 | 3 |
| Trends in ionisation energy                                | 17 | 3 |
| Acids and bases: a whistle-stop tour                       | 18 | 2 |
| Acids and bases: developing ideas further                  | 18 | 3 |
| Oxides of carbon   | 20 | 1 |
| Solid foundations: part 1                                  | 21 | 3 |
| Solid foundations: part 2                                  | 21 | 4 |
| Tackling stretch and challenge questions                   | 22 | 4 |
| Copper sulfate and ammonia: stretch and challenge question | 23 | 4 |
| Understanding NMR spectra                                  | 24 | 4 |
| Nucleophilic substitution                                  | 26 | 3 |
| Electrophilic substitution of aromatic rings               | 26 | 4 |
| Know your units  | 27 | 3 |
| The continuum of bonding                                   | 28 | 1 |
| Disentangling polarity                                     | 28 | 2 |
| Maxwell-Boltzmann distribution curves                      | 29 | 4 |
| Types of isomerism   | 30 | 1 |
| The versatility of alcohol                                 | 30 | 2 |
| Substitution reactions                                     | 30 | 3 |
| Substitution and aliphatic compounds                       | 30 | 4 |
| Buffers  | 31 | 1 |
| Mastering units  | 31 | 4 |
| Electrophilic addition reactions                           | 32 | 1 |
| Equilibrium  | 33 | 4 |

## Scientists of substance

| Title   | Vol. | Issue |
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| Mendeleev, creator of the chemists' logo                                    | 13   | 1     |
| John Newlands   | 13   | 2     |
| Harry Moseley   | 13   | 3     |
| Fritz Haber   | 13   | 4     |
| John Priestly   | 14   | 1     |
| Sir William Ramsay  | 14   | 2     |
| Sir Humphry Davy  | 14   | 4     |
| Linus Pauling   | 15   | 1     |
| Thomas Midgely  | 15   | 2     |
| Gilbert N. Lewis: his acids and bases                                       | 15   | 3     |
| Glenn T. Seaborg: creator of elements                                       | 15   | 4     |
| Lise Meitner: radiochemist, physicist and co-discoverer of nuclear fission  | 16   | 1     |
| Ida Tacke-Noddack: co-discoverer of rhenium and nuclear fission             | 16   | 2     |
| Rosalind Franklin: physical chemist, X-ray crystallographer and DNA pioneer | 16   | 3     |
| Marguerite Perey: discoverer of francium                                    | 16   | 4     |
| Organic growth from Deutsche Chemiker                                       | 17   | 1     |
| More organic growth from Deutsche Chemiker: Liebig and Wöhler               | 17   | 2     |
| Seeds of structural organic chemistry: August Kekulé                        | 17   | 3     |
| Adolf von Baeyer and Victor Meyer   | 17   | 4     |
| Avogadro: count and counting chemist  | 18   | 1     |
| John Dalton: Quaker scientist and law maker                                 | 18   | 2     |
| van der Waals: famous for recognising feeble forces                         | 18   | 3     |
| Michael Faraday   | 18   | 4     |
| Dorothy Crowfoot Hodgkin: great discoveries in X-ray crystallography        | 19   | 4     |
| Carothers: inventor of nylon  | 20   | 1     |
| Kwolek: creator of Kevlar   | 20   | 2     |
| Benerito: the chemist who banished ironing                                  | 20   | 3     |
| Marie Curie: probing the atom   | 21   | 2     |
| The fascinating Fenton reaction   | 22   | 1     |
| Rachel Louise Carson: Environmental champion                                | 27   | 2     |
| George Washington Carver: pioneering agricultural scientist                 | 31   | 3     |

## Substances

| Title  | Vol. | Issue |
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| Tin and lead                                       | 4    | 1     |
| Iodine   | 4    | 2     |
| Methyl mercaptan                                   | 4    | 3     |
| Sodium carbonate                                   | 4    | 4     |
| Argon - in the spotlight                           | 4    | 5     |
| Helium   | 5    | 1     |
| Platinum   | 5    | 2     |
| Nitric Acid  | 5    | 3     |
| Propanone  | 5    | 4     |
| Iodine   | 5    | 5     |
| Hydrogen peroxide                                  | 6    | 1     |
| Alumina  | 6    | 2     |
| Silica   | 6    | 3     |
| Nitric oxide                                       | 6    | 4     |
| Mixed oxides                                       | 6    | 5     |
| Chlorides  | 7    | 1     |
| Potassium chloride                                 | 7    | 2     |
| Aluminium chloride                                 | 7    | 3     |
| Cl <sub>4</sub> and SiCl <sub>4</sub> <sup>+</sup> | 7    | 4     |
| HCl  | 7    | 5     |
| Butane   | 8    | 3     |
| Ethanoic acid                                      | 8    | 4     |
| Phenol   | 8    | 5     |
| Aluminium  | 9    | 2     |
| Caesium  | 9    | 3     |
| Sulfur   | 9    | 4     |
| Cyanides   | 10   | 1     |
| Chlorine   | 10   | 2     |
| A bitter isomerisation                             | 10   | 3     |
| Carbon monoxide                                    | 10   | 4     |
| Strontium  | 11   | 1     |
| Gallium  | 11   | 2     |
| Selenium   | 11   | 3     |
| Hydrogen   | 12   | 1     |
| Chromium   | 12   | 3     |
| Bromine  | 12   | 4     |
| Hydrogen sulfide                                   | 13   | 1     |
| Titanium   | 13   | 3     |
| Nitrogen oxides                                    | 14   | 1     |
| Ozone  | 14   | 2     |
| Carbohydrates                                      | 14   | 4     |
| Carboxylic acids                                   | 15   | 1     |
| Hydrogen: alkali metal or halogen?                 | 15   | 2     |
| Lithium  | 15   | 3     |
| Supercritical carbon dioxide                       | 16   | 3     |
| Silicones and silanes                              | 16   | 4     |
| Platinum: not just for jewellery                   | 17   | 4     |

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| The fight against bacteria: every cloud has a silver lining | 18 | 1 |
| Deadly beauty   | 18 | 3 |
| Finding a fix   | 19 | 1 |
| Graphene  | 19 | 2 |
| Vanadium  | 19 | 4 |
| Calcium carbonate   | 20 | 3 |
| Water water everywhere                                      | 20 | 4 |
| Iridium: life-saving transition element                     | 21 | 2 |
| Cocaine: atoms of addiction                                 | 21 | 3 |
| Aerogel: 'frozen smoke'                                     | 21 | 4 |
| Tetrodotoxin: famously deadly poison                        | 22 | 2 |
| All things ice  | 22 | 3 |
| Iodine in medicine  | 23 | 1 |
| Magnesium   | 23 | 3 |
| Looking into glass  | 23 | 4 |
| Hydrogen cyanide: Poison and precursor                      | 25 | 2 |
| Barium  | 25 | 4 |
| Analgesics  | 27 | 1 |
| Turmeric: Medicinal applications                            | 27 | 4 |
| Sugar: A bittersweet tale?                                  | 29 | 4 |
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