skills: introduction

7 December, online

This course is for people with little

In a safe, supportive environment

or no experience of presenting.

Presentation

£270 + VAT

## Technicians stepping into supervision and management

Online

£470 + VAT
This tailored course, delivering knowledge and skills, helps technicians to feel confident in stepping into supervision and management roles.

HEaTED

## Formulation and processing part 1

7-11 February 2022, online £3195 + VAT
Providing aspiring QPs and other professionals with the understanding of key quality requirements for non-sterile oral dosage forms.

NSF International

## Diploma in coatings for corrosion control

Online

£2300 + VAT

This diploma offers a qualification recognised internationally throughout the coatings industry. Delivered by distance learning this allows you to decide when to study.

Corrodere

## Formulation and processing part 2

7-11 March, York £3420 + VAT Providing aspiring QPs and other professionals with the knowledge

to understand the key quality

requirements of parenteral products.

NSF International

## eLearning good distribution practice

Online

£price on request
This self paced course, provides
an comprehensive and detailed
introduction to good distribution
practices in the pharmaceutical
industry.

Reading Scientific Services

## reutical they can practice skills and gain confidence.

Cambridge Network

#### **Teaching carbon chemistry**

Online £Free

This course explores the teaching of carbon, its compounds and the most important reactions. Access to activities and resources to support students' learning are included.

Royal Society of Chemistry

#### Influence

Online £49.50 + VAT

For new or etablished leaders.
Explore why influence is so important and learn how to create a win—win long term relationship with your team and colleagues.

Mazamo





## Analytical Chemistry Summer Studentships

#### **Application deadline 19th January 2022**

The Object of the Analytical Chemistry Trust Fund is to promote, assist and extend the science and study of Analytical Chemistry and of all questions relating to the analysis, nature and composition of natural and manufactured materials for the benefit of the public.

The purpose of the awards is to give experience of research to undergraduates with research potential and to encourage them to consider a career in Analytical Chemistry research on completion of their undergraduate degree. The awards provide support for the student at a rate of £270 per week (£320 per week in London), for a period of between 6 and 8 weeks during the 2022 summer vacation.

Further information can be found at https://www.rsc.org/membership-and-community/connect-with-others/through-interests/divisions/analytical/funding/summerstudentships/

All enquiries and correspondence should be addressed to Dr Ruth Hearn, **ruth@rhearn.net** 



### **Disruption Grant**

ACTF Trustees recognise the disruption that the COVID-19 pandemic has had on analytical science students. We are relaunching a disruption grant of £500 aimed at PhD students who are in the last 6 months of their PhD and need additional monetary support to complete their studies.

Note, this fund is to support personal costs to help enable students to complete their studies for example rent, or other caring or living costs, and cannot be used for laboratory research costs. Students must be resident in the UK or Republic of Ireland and registered at a University in the UK or Republic of Ireland

To apply use the link below. Applicants will be assessed upon receipt and the call will remain open until the budget has been allocated.

https://forms.gle/y6HddvK8iBPmNUoM7

## **Featured product** High intensity LED module for photochemical flow applications

Borealis from Uniqsis is a high intensity LED unit, available in a range of fixed wavelengths (370, 410, 440, 460 and 520nm), that converts the Cold

Coil standalone
flow reactor module for
photochemical applications.
Both the lamp and reactor module
require liquid cooling from either
a piped water supply or a closed
loop recirculator.

A safety interlock prevents accidental exposure to high



sensor and safety cut-out protect the LEDs from overheating, and an inert gas purge input is provided for low temperature use.

https://www.uniqsis.com/ paProductsDetail.aspx?ID=Borealis

## **Featured product** Customised glass laboratory reactors

Asynt has the indepth knowledge and glassware manufacturing expertise to offer bespoke glass reactor vessels to meet the exact demands of any application or project. Bespoke glass laboratory reactors designed

and manufactured by Asynt have ranged from tens of millilitres to 50 litres in capacity. A contract research organisation,

A contract research organisation specialising in the synthesis

of photosensitive molecules, tasked Asynt to design a 1-litre glass laboratory reactor to minimise light degradation of its high-value molecules during reaction. This was achieved by manufacturing the complete reactor system using

amber-stained glass.

https://www.asynt.com/ product/bespoke-scientificglassware/

## **Featured product** Benchtop evaporator for DMSO or DMF solution samples

The Smart Evaporator C1 from BioChromato is a compact system that delivers rapid concentration or complete drying of samples in even high boiling solvents such as DMSO, DMF or water. Drawing upon BioChromato's patented spiral plug evaporation technology, the compact, benchtop Smart Evaporator C1 offers fast and effective evaporation in tubes or vials without solvent bumping thereby eliminating risk of sample loss, cross contamination and saving researchers time. The Smart Evaporator C1 is optimised



to handle solvent volumes in any tube or vial up to 40ml which can be extremely useful for concentrating compounds after organic synthesis or drying analytical samples at relatively high speeds.

https://biochromato.com/smartevaporator/

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#### November 2021 solutions and winners

## 

#### Wordoku

The French chemist was Karine PHILIPPOT

#### Science scramble

**1** Jade

**2** Jaded

3 Aujureu

**4** Adjourned

5 Jennifer Doudna

November winners

Wordoku Keith Simmonds Dartford, UK

Science scramble Daniel Delgado Rosas Impington, UK

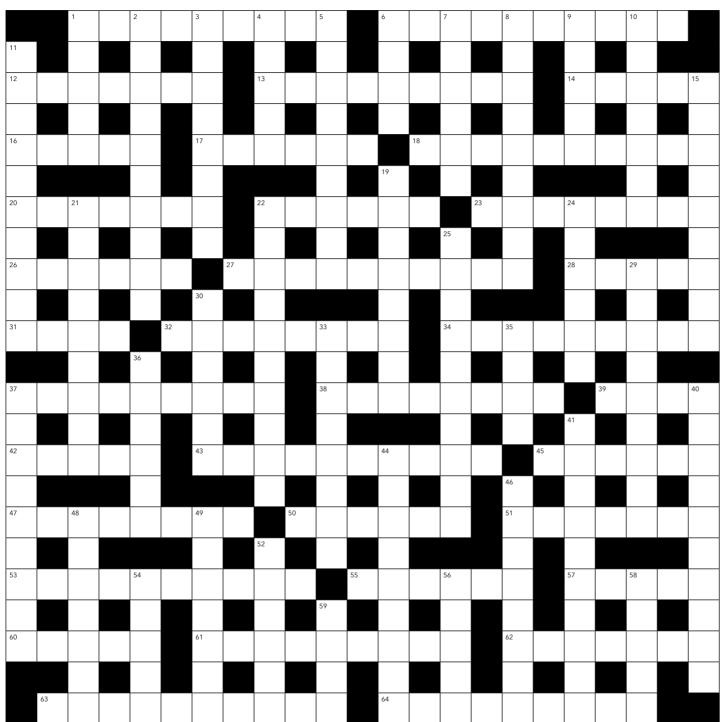
Cryptic crossword Andy Lynn Hedon, UK

Quick crossword Peter Ham Cardiff, UK

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PUZZLES PUZZLES

#### December 2021 Jumbo CrOsSWORd



#### Entry form

This month there are only two prize puzzles: the cryptic elements crossword and the quick regular crossword. For each crossword, a winner will be selected from all the correct entries received. Each winner will receive a hamper just in time for Christmas.

You can enter both of the prize draws, but each entrant is only eligible to win one puzzle prize

Please enter your details and email a scan or photograph of this page with your completed entries to us by **14 December 2021**. The winners of this month's puzzles will be published in the January 2022 issue, along with the solutions.

Email: chemistryworld@rsc.org

ame	
ddress	

Participants are advised that any personal information supplied will be processed in connection with this competition and only in accordance with our privacy statement (www.chemistryworld.com/privacy).

#### Prize entry 1: Cryptic elements crossword

Each crossword square can have one or two letters, which must be letters of an elemental symbol, or the letters D or T (for deuterium or tritium). For example, Dalton could be written D(Al)TON.

#### Across

- 1 See 63 Across
- 6 On arrangement, Ford tests radar scientist (6.8)
- 12 Oh, I refuse to play this American station (9)
- 13 Cringe about endless cocaine causing cancer (12)
- 14 Clocks the posters (7)
- 16 Teacup so broken, repurposed into another piece of kitchenware (8)
- 17 Organ included in skin test in England? (9)
- 18 Puzzler rearranges verbal circuits (14)
- 20 Ray back north after a makeover (9)
- 22 Spreads befitting barriers you might
- 23 List ferries shifting agricultural supplies (11)
- 26 Fashion scout oddly traps the vagabonds (8)
- 27 Sick photos upset the bridge game (10)
- 28, 1 Down Physicist arranged newer tolerances (6, 1, 8)
- 31 Weak part of bridges of Tokyo (4)
- 32 Engineer once costing authorities (11)
- 34 I revisit sites abroad for properties (13) 37 American writer rearranged unspoilt
- cairn (5, 8) 38 Boss cross poet about the letter drops? (9)
- 39 Something lofty in the latticework (5)
- 42 Run around Uncle Sam for a heavenly body? (6)
- 43 Surprising sit-in tuition for discerning ethicist (12)
- 45 Getting back together on the island (7)
- 47 Noticed his turning decadent (10)
- 50 Ordered neat suite made of alloy (9)
- 51 Weapons to wound women? (9)
- 53 Science of modern yachts I'm developing? (14)
- 55 Medical practitioner treated spare tooth right away (9)
- 57 Spirits in club Heft out (6)
- 60 Make money from Caracas hinterland (4, 2)
- 61 Sits a final test, getting endless stick about maths (10)
- 62 Egging on oddly ignored duet playing viola (9)
- 63, 1 Across Mechanics rule, but not the first! (7, 6, 3, 2, 6)
- 64 Pro costs eye alteration for binocular vision (11)

#### Down

- 1 See 28 Across
- 2 Tools not bad around cell (11)
- 3 Computer commands misuse clock somehow (11)
- 4 Inspire intuition reportedly (6)
- 5 Top technician developed a way to quit smoking (8, 5)
- 6 Borderline finger break (6)
- Perhaps apply rouge to nose? Very suggestive! (9
- 8 Something fishy about pert haircuts (12)
- 9 Nerd in trouble, making a meal of
- 10 Swedish biochemist realises unit needs treatment (4, 8)
- 11 Cousin faints around such darkenings (12)
- 15 Medical implements test pooches' initial stamina after a fashion (12)
- 19 On arrangement etherises cat and empties bladder (12)
- 21 Fun to tow Oscar around the countryside (3, 2, 4)
- 22 I turn pro's profits into drinks (5, 7)
- 24 Stable in middle of garret reportedly (9)
- 25 Crib sheet about oddly strained mineral (13)
- 29 Modified a guitarist's sign (11)
- 30 Japanese bacteriologist out of fashion we hear (7)
- 33 Prepared pepsins in the cold (9)
- 35 Goats cross about initially irritating bees (6)
- 36 Turns down sister's cocktail (7)
- 37 Nice aunt smashes hut. Unreal! (11)
- 40 Stall fools canines surprisingly (12)
- 41 Volcano smashed a French utopian tomb (5.8)
- 44 Whispers about town's oddly ignored possessions (10)
- 46 Skin complaint is so itchy starts healing after treatment (10)
- 48 Put an end to row about TV here (9)
- 49 I redesign seniors' purifiers (8)
- 52 Nice kit broadcast a type of energy (7)
- 54 Monday-ordered generator (6)
- 56 Vague course set around Beachy Head (7)
- 58 Extremely inhuman duty turned messy (6)
- 59 Stoned around the seaport (6)

#### Prize entry 2: Quick crossword

This one is your regular type of crossword, no element symbols are needed.

#### Across

- 1 Discoverer of the electron (1, 1, 7)
- 6 SI units of radioactivity (10)
- 12 Intermingled (7)
- 13 Chemicals used in a reaction (9)
- 14 Single piece of information (5)
- 16 'I often think in \_\_\_\_\_' (Albert Einstein) (5)
- 17 Units of mass (6)
- 18 Plant pigments (10)
- 20, 42 Across Danish polymath who gave his name to the first law of crystallography (7, 5)
- 22 Groups containing two acyl groups bound to nitrogen (6)
- 23 Bright yellow compound found in turmeric used as a food colouring (8)
- 26 Harm (6)
- 27 American singer, actor and comedian (4 6)
- 28 Channel on the surface of the moon (5)
- 31 Rotate (4)
- 32 One of the non-lupac names for benzene-1,3-diol (8)
- 34 Back injections for pain relief (9)
- 37 Isotope of hydrogen (9)
- 38 Lacking colour (8)
- 39 Chelating agent (abbrev) (4) 42 See 20 Across
- 43 Text listing of commands for a computer program (6, 4)
- 45 See 46 Down
- 47 Categorise (8)
- **50** Fuel (3, 3)
- 51 Thermodynamic property symbolised by the letter S (7)
- 53 Containing NH<sub>2</sub> (10)
- 55 Elementary particle of half-integer
- 57 Spherical or near-spherical bacteria (5)
- 60 Having prongs like a fork (5)
- 61 Space traveller (9)
- 62 Genus of ants and also the tradename of a laminated composite material (7)
- 63, 6 Down Cleaning apparatus that employs high-frequency sound waves (10, 4)

64 Admin (9)

#### Down

- 1, 52 Down One of the scientists who elucidated the structure of DNA (5, 6)
- 2 Study of poisons (10)
- 3 Language of the Vikings (3, 5)
- 4 Organophosphorus nerve agent (5)
- 5 Tidying (9)
- 6 See 63 Across
- 7 The Chemical History of a \_\_\_ series of six lectures given by Michael Faraday at the Royal Institution (6)
- 8 Revolting (9)
- 9 Radioactive noble gas (5)
- 10 Alkali metal used in the treatment of bipolar disorder, and the title of a single by Nirvana (7)
- 11 Ancient Greek philosopher born in Elea, Italy (10)
- 15 Insects that use mud or similar material to build their nests (5, 4)
- 19 Economise (8)
- 21 Pulverise (9)
- 22 Alloy of elements 76 and 77 (10)
- 24 Element discovered in 1803 and named after a dwarf planet discovered two years earlier (6)
- 25 Describing a small rocky body orbiting the sun (10)
- 29 North Wales seaside resort (9)
- 30 Array (6)
- 33 Black carbon produced by heating wood in little oxygen (8)
- 35 Greek winged goddess of the rainbow who gives her name to a transition metal (4)
- 36 Subatomic particles (6)
- 37 Drying agent (9)
- 40 Describing a chemist who tests rather than synthesises (10)
- 41 Type of simulation used to model the probability of different outcomes, named after an area of Monaco (5, 5)
- 44 Suffocating gas found in mines (9)
- 46, 45 Across Co-recipient of the 2020 Nobel prize in chemistry for work on Crispr gene editing (8, 6)
- 48 Explosive made of ammonium nitrate and powdered aluminium (7)
- 49, 58 Down One of the scientists who elucidated the structure of DNA (7, 5)
- 52 See 1 Down
- **54** Low point (5)
- 56 Tally (3, 2) 58 See 49 Down
- 59 Metal neck ring (4)

#### November 2021 solutions and winners

Solutions to last month's puzzles and November's winners can be found on page 57.

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