

Contents

SSR in Depth

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The ASE's peer-reviewed journal for 11–19 science education

- 4 Editorial**
Fiona Williams
- 5 ASE Presidential Address: Science education at a time of existential risk**
How important are such existential risks as asteroid impacts, climate change, artificial intelligence, genetically modified organisms, pandemics, nuclear war and ecosystems collapse, and should school science address them?
Michael J. Reiss
- 11 'Really disliked it at A-level. Never truly understood it.' Identifying topics in which chemistry teachers lack confidence**
A discussion on the results of a survey into how confident teachers are when teaching A-level chemistry
David Read and Stephen M. Barnes
- 19 A glimpse into the future: using deep eutectic solvents for environmentally compatible extraction and recycling of important E-metals**
This article discusses the potential use of a greener technology for extracting and recycling metals
Andy Markwick, Elena Bulmer and Phoebe Smith-Barnes
- 25 Unpacking procedural and conceptual difficulties of grade 13 students in solving problems in genetics crosses**
The conceptual and procedural difficulties that A-level students face in problem-solving in genetics crosses
Sheyne Moodelly, Michael J. Reiss and Anwar Rumjaun
- 32 Scientific language: how important should it be to teachers of science?**
The importance of using precise scientific language to avoid misunderstanding
James D. Williams
- 37 Reviews**
Maria Kettle
- 40 Science websearch**
Jon Tarrant

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The ASE's peer-reviewed journal for
science education 11–19

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We welcome contributions for all sections of *SSR in Depth*. For reference, a full page of A4 text in the journal is about 800–850 words; including two small figures on a page would bring that down to about 600 words. Articles should be no longer than 4000 words in total, including references.

These can be emailed to the Editors, ssreditor@ase.org.uk. Detailed advice on the submission of articles and *Science notes* is available on the ASE website at www.ase.org.uk/submission-guidelines.

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Health & Safety

For all practical procedures described in *SSR in Depth*, we have attempted to ensure that:

- the requirements of UK health & safety law are observed;
- all recognised hazards have been identified;
- appropriate precautions are suggested;
- where possible procedures are in accordance with commonly adopted model risk assessments;
- if a special risk assessment is likely to be necessary, this is highlighted.

However, errors and omissions can be made, and employers may have adopted different standards. Therefore, before any practical activity, teachers and technicians should always check their employer's risk assessment. Any local rules issued by their employer must be obeyed, whatever is recommended in *SSR in Depth*.

Unless the context dictates otherwise it is assumed that:

- practical work is conducted in a properly equipped laboratory;
- any mains-operated and other equipment is properly maintained;
- any fume cupboard operates at least to the standard of CLEAPSS Guide G9;
- care is taken with normal laboratory operations such as heating substances or handling heavy objects;
- eye protection is worn whenever there is any recognised risk to the eyes;
- good laboratory practice is observed when chemicals or living organisms are handled;
- fieldwork takes account of any guidelines issued by the employer;
- pupils are taught safe techniques for such activities as heating chemicals or smelling them, and for handling microorganisms.

Readers requiring further guidance are referred to:

Safeguards in the School Laboratory, 12th edn, ASE, 2020.

Be Safe! Health and Safety in School Science and Technology for Teachers of 3- to 12-year-olds, 4th edn, ASE, 2011.

Topics in Safety, ASE, latest version on the ASE website: www.ase.org.uk/resources/topics-in-safety (login required).

Hazcards, CLEAPSS, latest version, and other relevant publications, on the CLEAPSS website: www.cleapss.org.uk (almost all schools, colleges and teacher training establishments in the UK outside Scotland are members, as are many overseas).

Hazardous chemicals database, SSERC, latest version on the SSERC website: www.sserc.org.uk/health-safety/chemistry-health-safety/hazchem_database-2/ (schools, colleges and teacher training establishments in Scotland).

Preparing Risk Assessments for Chemistry Project Work in Schools & Colleges, SSERC, 2020.

Editorial

Fiona Williams, SSR Content Editor

Welcome to the November issue of SSR. As you will see, there has been a lot of activity behind the scenes to apply the new brand to the journal. There is a great mix of articles in this issue – I hope that there is something for everyone.

SSR's inaugural photo competition ran over the summer break. Thank you, everyone, who took part in the competition. We had some stunning entries, and you can see the winning and runner up photographs on page 35 of *SSR in Practice*. I would like to showcase the striking pictures taken by twins Charlotte and Patrick, aged 9½. Our youngest entrants have done a splendid job in capturing 'light in the natural world'. Well done!



Photo by Charlotte Hoath

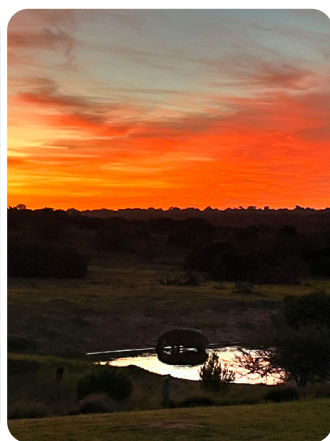


Photo by Patrick Hoath

In *SSR in Practice*, we have included a selection of book reviews written by students on books with a chemistry theme that they have chosen themselves. These reviews have been written by students who are studying science at post-16 and would like to study a scientific discipline at university. It can be difficult to keep abreast of the various popular science books that might be of interest to our students. We hope that you can share this centrefold with your students.

In the area of real-world science, Andy Markwick's articles provide insight into some recent developments in the extraction and recycling of E-metals using deep eutectic solutions. E-metals are those that are used in electronic-based technologies such as batteries, electric motors and smart phones. As we look to move away from fossil fuels, this is an important area, given our increased use of transportation, technology and communication. The article in *SSR in Practice* contains an overview of the extraction and recycling of E-metals and provides great context for teaching, while, in *SSR in Depth*, the use of deep eutectic solution chemistry is explained as an environmentally friendly way of extracting and recycling important E-metals.

In *SSR in Depth*, David Read and Stephen Barnes report the findings of their study into topics that chemistry teachers find difficult, one of these being electrochemistry, while, in *SSR in Practice*, Jennifer Marchant brings to life the topic of electrochemistry with some real-world examples.

Inclusion is very topical at present. Fiona Roberts shares some practical adaptations for students with SEND – a vital read for all as we strive to make our classrooms and teaching inclusive for students with a range of individual needs. In a second article on inclusion, Carole Kenrick writes about her experiences of putting into practice the IOP guidance on inclusive science teaching; it is a very relevant article for teachers of all the sciences.

Finally, on page 36 of *SSR in Practice*, Helen Harden (Commissioning Editor) writes about ways that you can contribute to SSR.

This is your journal. As such, we want to read about and share in your knowledge and practice. If you have never written for SSR before and are unsure whether your article idea is suitable then please get in touch with Helen at helenhardenase@gmail.com

Fiona Williams

Read more in *SSR in Practice*

SSR in Practice is available at: www.ase.org.uk/ssr-in-practice/issue-389

