

THIS ISSUE

Geoscientists impact society. They find new mineral resources, mitigate environmental problems, create designer materials for industrial applications, advance medical testing methods, track food industry products, aid in law enforcement activities, and so much more. One can't say that "the sky is the limit" for geoscientists, for they are also studying the worlds beyond our planet and applying that knowledge to benefit society. The authors in this issue present several exciting facets of the seemingly limitless potential of our science. Ludden et al. (pp 253–258) also remind us that a geoscientist's job involves more than expanding the scientific knowledge base. It is our responsibility to effectively communicate our knowledge and, ultimately, to translate it into answers and solutions that can be used by industry, society, and policymakers. It is a difficult job but, if done well, the outcome will surely be beneficial to the future of our science and society.

THE IMPACT OF ELEMENTS

This issue is focused on the impacts of geochemistry, so it is a good occasion to update our readers on the "impact" of *Elements*. *Elements* was designed to impact our community by delivering a high-quality scientific magazine that delivers thematic review articles, opinion pieces, society news articles, advertisements for products and services related to our community, job postings, book reviews, and topical features (see below).

The standard yardstick by which to measure "impact" is Thomas Reuters' Impact Factor and article citation rates. The 2015 Journal Citation Reports®, released in June, indicated that *Elements'* 2014 impact factor is 4.463, which makes it rank 3rd among mineralogy journals and 7th among geochemistry and geophysics journals. In 2014, our 379 citable articles had 1866 citations, giving an average of 4.9 per article. *Elements* has had over 8600 citations since its inaugural issue in 2005.

As of August 2015, the most highly cited issues since the time of publication are:

- v3n1 – "Zircon, Tiny but Timely" (754)
- v2n2 – "Arsenic" (451)
- v4n5 – "CO₂ Sequestration" (403)
- v1n5 – "Large Igneous Provinces" (356)
- v3n4 – "Frontiers in Textural and Microgeochemical Analysis" (340)



These numbers, along with the continued commitment of the 17 participating societies to produce this magazine, the high-quality products and services advertised in our issues, and the over 15,000 members who continue to receive each issue are just a few indicators that *Elements* magazine is making a positive impact on our scientific community.

ELEMENTS FEATURES

Elements is your magazine, and you can contribute to the many features—some published regularly, others from time to time. Unless otherwise indicated, send your ideas and contributions to Jodi Rosso (jrosso.elements@gmail.com).

People in the News highlights the accomplishments of members of our community: awards they have received, especially outside our community, or exciting new projects in which they are engaged.

Triple Point raises issues of broad interest to the readers of *Elements* and explores different aspects of our science (teaching, publishing, historical aspects, etc.), our societies, funding, policy, and political issues.

The ***Elements'* Toolbox** presents new technological developments of interest to our readers. You can send your ideas and suggestions for coverage to Michael Wiedenbeck (michawi@gfz-postdam.de).

CosmoElements keeps us in touch with exciting discoveries in cosmochemistry, provides short articles that can be used in the classroom, and offers reports on space missions that carry geochemical and mineralogical instruments. Contact Cari Corrigan (corrigan@si.edu).

A Life in Science is dedicated to supporting the career aspirations and progress of geoscientists, from students to retired professionals. It focuses on ways to make your life easier and to help you establish a satisfying career in the geosciences. Contact Penny King (penny.king@anu.edu.au).

Travelogue: Have you done fieldwork in, or traveled to, an exotic location? Consider writing an account of your experiences.

Parting Shots fills one of the back pages, and its job is to entertain, to provide something lighter than all the serious stuff in the earlier pages. Intriguing, beautiful, or baffling photographs take the reader on a relaxing voyage into the web of connections that makes the realm of *Elements* so enthralling. Contact Ian Parsons (ian.parsons@ed.ac.uk).

Mineralogy Matters is dedicated to promoting the importance of the subject of mineralogy. Contact David Vaughan (david.vaughan@manchester.ac.uk).

Jodi Rosso, Executive Editor

EDITORIAL *Cont'd from page 227*

follow the progress of human diseases such as cancer. An overriding message in these articles is the importance of analytical methods that can detect low concentrations of elements and isotopes and map their distribution in solids, soils, water, air, food, and human tissue. These articles illustrate very well the impact that geochemistry is having on modern society through well-chosen examples and case studies.

In closing, let's consider cement, one of the most important commodities derived from natural raw materials. Portland cement, the most common variety, is made by heating impure limestone (i.e. containing aluminosilicates) with additives such as shale, sand, slag, fly ash, bauxite, and iron ore, all of which then produces a material called klinker. A small amount of gypsum or anhydrite (typically 5% of the total) is added to the klinker, and the mixture is finely ground and mixed with water. Complex chemical reactions occurring in the klinker–water mixture result in new phases, including needle-shaped crystals of ettringite, a sulfate that adds great strength to Portland cement (Cotterill 2008). It's somewhat mind-boggling to find out that 4,180,000,000 metric tonnes of cement (mostly Portland cement) was used by humans in 2014 (USGS 2015), with the three largest producers—China, India, USA—responsible for consuming 59.8%, 6.7%, and 2.0%, respectively.

Earth's bounty of natural resources will continue to be utilized by humans to build our infrastructure and transportation systems, to power our society, and to develop even more useful personal devices than the cell phone. However, we must continue developing and practicing environmentally sound methods of extracting this bounty.

Gordon Brown, Stanford University

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