

THIS ISSUE

This issue presents the current state of science on the topic of CO₂ sequestration. Five thematic articles discuss the technical aspects and the logistical pros and cons of the various CO₂-storage options now being evaluated. This issue required extraordinary care and attention to detail because of its relevance to the ongoing debate about climate change, and Principal Editor Susan Stipp worked very hard with the guest editors and authors to ensure a timely and balanced coverage. We thank them all for their commitment and patience.

In this issue, our thematic coverage is preceded by three short pieces providing perspectives from industry, science, and the political domain. They set the stage for the articles that follow. We plan to use this format from time to time, when the subject matter would benefit from such a presentation.

ELEMENTS' 2007 IMPACT FACTOR AT 2.23

Since its first issue was published, in 2005, *Elements* has seen its impact factor climb from 0 to 2.23 in 2007. Considering the rate of increase, it is likely to continue its upward trend. Here is a list of the 10 most cited articles as of mid-September, 2008:

- Charlet L, Polya DA (2006) Arsenic in shallow, reducing groundwaters in southern Asia: An environmental health disaster. *Elements* 2: 91-96 (16 citations)
- Self S, Thordarson T, Widdowson M (2005) Gas fluxes from flood basalt eruptions. *Elements* 1: 283-287 (14)

- Harley SL, Kelly NM, Moller A (2007) Zircon behaviour and the thermal histories of mountain chains. *Elements* 3: 25-30 (13)
- Ohtani E (2005) Water in the mantle. *Elements* 1: 25-30 (13)
- Vaughan DJ (2006) Arsenic. *Elements* 2: 71-75 (12)
- Ferris JP (2005) Mineral catalysis and prebiotic synthesis: Montmorillonite-catalyzed formation of RNA. *Elements* 1: 145-149 (11)
- Morin G, Calas G (2006) Arsenic in soils, mine tailings, and former industrial sites. *Elements* 2: 97-101 (10)
- Campbell IH (2005) Large igneous provinces and the mantle plume hypothesis. *Elements* 1: 265-269 (10)
- Wignall P (2005) The link between large igneous province eruptions and mass extinctions. *Elements* 1: 293-297 (10)

SOCIETY NEWS HIGHLIGHTS

As managing editor, I get to read the society news pages several times, and I always find lots of interesting items. Here are some I found particularly interesting in this issue. The International Association of Geoanalysts reports that a new osmium isotope reference material is now available for distribution (page 346). The Mineralogical Society of Great Britain and Ireland announces that it will cease publication of *MinAbs Online* at the end of 2008. On page 343 you can read a succinct history of *Mineralogical Abstracts*, which has been published since 1920. The

Mineralogical Society of America reports on its plan for moving *American Mineralogist* to a paperless world (page 340). As most of the societies publishing a journal will eventually have to face this situation, we can take inspiration from their conclusions. I was also interested to read in the SFMC news (page 344) about the virtual gallery of mineralogy launched by the Museum National d'Histoire Naturelle. Relive or get a taste of the 2008 Goldschmidt Conference by checking the two-page spread provided by the Geochemical Society and the European Association for Geochemistry on pages 352 and 353.

MULTI-SOCIETY CATALOGUE

Our 2009 multi-society mineralogy/geochemistry catalogue is being mailed with this issue of *Elements*. This is the fourth catalogue we have published, and it is a collaborative effort among the participating societies. Please keep it as a reference for the coming year or give it to a colleague or student as an encouragement to join one of the participating societies. If each of us did this, the mineralogy-geochemistry-petrology community could double instantly. Imagine our impact! Membership in any of the participating societies includes a subscription to *Elements*.

Pierrette Tremblay, Managing Editor

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EDITORIAL (Cont'd from page 291)

Elements, we present ways to remove CO₂ from the atmosphere and sequester it in a way that minimises risk to life at the Earth's surface. Also in this issue, we introduce a new feature called "Perspectives". The short articles, written by well-respected leaders from industry, academia and government, are intended to provide a platform that will stimulate constructive and cooperative discussion and development of solutions.

Humankind has engineered its way out of its vulnerability in the hands of Nature. Now, we stand with fragile Nature under our feet. Global warming is a serious concern. Increased acidity in the oceans is changing biological habitats.

It will take a concerted effort, and there will be tough choices for society, science, government and industry, in both the developed and the developing worlds. We need to reduce personal consumption of goods and energy. Society needs to accept responsibility and bear the costs of a lower-CO₂ world. We need serious commitment, now, from government and industry, at a global scale, but particularly from the developed countries. Hard decisions will require political and industrial leaders with courage, who are steadfast, especially in the shadow of a financial crisis.

The best way to meet the CO₂ challenge is through fundamental understanding of how our world works, in order to (1) provide the fastest and most direct way to develop sustainable energy-production methods and more efficient manufacturing, heating/cooling and transport, and (2) capture CO₂ from fixed-source contributors such as power plants and industry and convert it back to rock form, stable for geological time. A key is basic understanding of how rocks weather in the biosphere and how new minerals are formed. Our scientific community is the only one with the necessary set of skills to tell the world how to transfer carbon from the atmosphere into a stable environment. This is THE geochemical/mineralogical/petrological theme of the decade! How can we focus more of our creativity, training and academic positions on solving this problem? We have the opportunity – and a heavy responsibility – to pass to our children a world that they will be able to live in.

Western society has been dozing for 30 years, choosing to ignore the warnings, or believing they were wrong. They are not wrong. It's time to wake up, get our heads out of the sand, and do something.

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