ABOUT THIS ISSUE – INFLAMMABLE AIR

Long before the scientific revolution, the belief was that the material world could be classified into four “elements”: earth, fire, air, and water. Thanks to the work of the ancient alchemists (who questioned the notion of the “elements” in their search for immortality) and of the modern chemists and metallurgists, we now know that there are 92 natural elements. Hydrogen (H) is the smallest element, having just one proton and one electron, and is also the most abundant element in the solar system.

Despite being abundant, hydrogen wasn’t isolated and characterized until the late 1700s. Henry Cavendish (1731–1810) was an English physicist and chemist who explored all areas of science, including chemistry, geology, astronomy, and electricity. Cavendish, like many before him, noticed that a gas was produced when metal was placed into an acid. He called this gas “inflammable air”. Using precise methodologies, he distinguished this “inflammable air” from ordinary air and investigated its specific properties, such as how it produced water when burned in the presence of “dephlogisticated air” (oxygen). Although Cavendish was the first to publish findings on “inflammable air” (Cavendish 1766, Philosophical Transactions, vol 56, p 141–184, doi: 10.1098/rstl.1766.0019), it was Antoine Lavoisier (1743–1794) who coined the name “hydrogen”, which means “water former.”

Whether it is the “clean fuel” of the future (e.g., the hydrogen economy) or an essential element for life (being present in water and almost all the molecules in living things), hydrogen continues to draw our attention. It is for these reasons, and many others, that the authors of the articles in this issue of Elements explore this remarkable element and other abiotic organic molecules.

MEET OUR NEW PRINCIPAL EDITOR – RICHARD J. HARRISON

The start of a new decade sees Richard Harrison joining the Elements team as a principal editor for mineralogy, following in the footsteps of Nancy Ross. Richard may be a familiar name to Elements readers as he was the guest editor for the August 2009 (v5n4) issue “Mineral Magnetism: From Microbes to Meteorites”.

Richard is Professor of Earth and Planetary Materials and Head of the Department of Earth Sciences at the University of Cambridge (UK). He obtained his PhD at Cambridge in 1997, spent time in Münster (Germany) working with Andrew Putnis, before moving back to Cambridge as a teaching fellow and lecturer in 2001.

His research focusses on all things magnetic. He uses an innovative combination of experimental and computational techniques to study the magnetism in natural materials, with particular emphasis on nanoscale processes. His pioneering “nanopaleomagnetic” approach is used to interpret the magnetic signals carried by ancient or severely altered rocks, opening up new possibilities of performing paleomagnetic studies on even the most challenging terrestrial and extra-terrestrial samples.

His research in the field of magnetism and microscopy has been recognized with the Mineralogical Society of Great Britain and Ireland’s Max Hey Medal (2003), the Geomagnetism and Paleomagnetism section of the American Geophysical Union’s William Gilbert Award (2006), the Mineralogical Society of America’s MSA Award (2007), and the European Mineralogical Union’s Medal for Research Excellence (2012). He was one of the Mineralogical Society of Great Britain and Ireland’s Distinguished Lecturers in 2010.

ELEMENTS AT EGU AND GOLDSCHMIDT IN 2020

Each year, Elements hosts exhibitor booths at scientific conferences to give you an opportunity to learn about the magazine, to meet with our editors, to discuss future topics, and so much more. Elements also uses this as an opportunity to promote our 18 participating societies and encourage conference participants to become society members.

The 2020 European Geophysical Union General Assembly is a prominent annual event that brings together geoscientists from all over the world into one meeting that covers all disciplines of the Earth, planetary, and space sciences. This meeting attracts ~16,000 participants. The EGU2020 meeting will be held 3–8 May in Vienna (Austria). See https://www.egu2020.eu/ for more information.

Goldschmidt®, organized by the Geochemical Society and the European Association of Geochemistry, is the foremost annual, international conference on geochemistry and related subjects. This meeting attracts ~4,000 participants. All participants receive Elements magazine post conference. The Elements editorial team will also gather for their annual meeting on Sunday, June 21. Goldschmidt2020 will be held 21–26 June in Honolulu (Hawaii, USA). See https://goldschmidt.info/2020/ for more information.

NEW PLATFORM FOR ELEMENTS

Elements has published ~90 thematic issues to date. Each issue is a compact, one-stop-shop for learning about a thematic topic; for reading about current events and news from our participating societies; and for connecting with innovators and the distributors of the products, services, and technologies that are used in our research. You have several options for reading the magazine: print copies shipped to your address; web pages and PDFs available at the Elements website; and, if your institution has a subscription, web pages and PDFs at GeoScienceWorld. Beginning with the February 2020 issue of Elements, we are providing you with an additional option for viewing the magazine: an online digital magazine.

The HTML-based digital edition includes active hyperlinks, animated page turning, interactive table of contents for ease of navigation, controls to magnify the text/images, and much more. The digital edition will only be accessible to our members/subscribers via the Elements website. To access this “member only” content, you will need your society member number and your e-mail address.

Jon Blundy, John Eiler, Richard Harrison, and Jodi Rosso