

# Elements

An International Magazine of Mineralogy, Geochemistry, and Petrology



Volume 3, Number 3 • June 2007

*Elements* is published jointly by the Mineralogical Society of America, the Mineralogical Society of Great Britain and Ireland, the Mineralogical Association of Canada, the Geochemical Society, The Clay Minerals Society, the European Association for Geochemistry, the International Association of Geochemistry, the Société Française de Minéralogie et de Cristallographie, the Association of Applied Geochemists, the Deutsche Mineralogische Gesellschaft, the Società Italiana di Mineralogia e Petrologia, the International Association of Geoanalysts, and the Polskie Towarzystwo Mineralogiczne (Mineralogical Society of Poland). It is provided as a benefit to members of these societies.

*Elements* is published six times a year. Individuals are encouraged to join any one of the participating societies to receive *Elements*. Institutional subscribers to any of the following journals—*American Mineralogist*, *Clay Minerals*, *Clays and Clay Minerals*, *MINABS Online*, *Mineralogical Magazine*, and *The Canadian Mineralogist*—will also receive *Elements* as part of their 2007 subscription. Institutional subscriptions are available for US\$125 a year in 2007. Contact the managing editor (tremblpi@ete.inrs.ca) for information.

Copyright 2007 by the Mineralogical Society of America

All rights reserved. Reproduction in any form, including translation to other languages, or by any means—graphic, electronic or mechanical, including photocopying or information storage and retrieval systems—without written permission from the copyright holder is strictly prohibited.

Publications mail agreement no. 40037944

Return undeliverable  
Canadian addresses to:  
PO Box 503  
RPO West Beaver Creek  
Richmond Hill, ON L4B 4R6

Printed in Canada  
ISSN 1811-5209 (print)  
ISSN 1811-5217 (online)

[www.elementsmagazine.org](http://www.elementsmagazine.org)

## Energy: A Geoscience Perspective

Allison M. Macfarlane, Guest Editor



165

### Energy: The Issue of the 21<sup>st</sup> Century

Allison M. Macfarlane



171

### Confronting the Climate-Energy Challenge

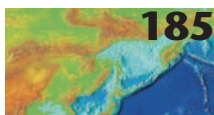
Daniel P. Schrag



179

### Geological Carbon Dioxide Sequestration

S. Julio Friedmann



185

### Nuclear Energy and Uranium Resources

Allison M. Macfarlane and Marvin Miller



193

### Tapping Methane Hydrates for Unconventional Natural Gas

Carolyn Ruppel

**ABOUT THE COVER:**  
A growing need for electricity in the developed and developing world will have a large impact on climate change, energy security, and energy supply in the 21<sup>st</sup> century. This photo was taken near Golden, Colorado, USA. PHOTO COURTESY DOE/NREL

## Departments

<b>Editorial</b> – Science and the Policymakers . . . . .	<b>155</b>
<b>From the Editors</b> . . . . .	<b>156</b>
<b>Letters to the Editors</b> . . . . .	<b>156</b>
<b>Introducing the Advisory Board</b> . . . . .	<b>157</b>
<b>Triple Point</b> – Looking Glass Worlds . . . . .	<b>160</b>
<b>Obituary</b> – Joseph V. Smith . . . . .	<b>161</b>
<b>People in the News</b> – Lomonosov Medalists . . . . .	<b>162</b>
<b>Meet the Authors</b> . . . . .	<b>163</b>

<b>Society News</b>	
Mineralogical Society of America . . . . .	200
European Association for Geochemistry . . . . .	202
Geochemical Society . . . . .	204
Mineralogical Society of Great Britain and Ireland . . . . .	206
The Clay Minerals Society . . . . .	208
Mineralogical Association of Canada . . . . .	210
Société Française de Minéralogie et de Cristallographie . . . . .	212
Association of Applied Geochemists . . . . .	213
Deutsche Mineralogische Gesellschaft . . . . .	214
Società Italiana di Mineralogia e Petrologia . . . . .	215
International Association of Geoanalysts . . . . .	216
International Association of GeoChemistry . . . . .	217
Mineralogical Society of Poland . . . . .	218
<b>Reviews</b> . . . . .	<b>219</b>
<b>Calendar</b> . . . . .	<b>221</b>
<b>Advertisers in this Issue</b> . . . . .	<b>222</b>
<b>Parting Shot</b> . . . . .	<b>223</b>

