

Elements

An International Magazine of Mineralogy, Geochemistry, and Petrology



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 of 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 Geonanalysts, the Polskie Towarzystwo Mineralogiczne (Mineralogical Society of Poland), the Sociedad Española de Mineralogía, the Swiss Society of Mineralogy and Petrology, the Meteoritical Society, and the Japan Association of Mineralogical Sciences. 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*, *Mineralogical Magazine*, and *The Canadian Mineralogist*—also receive one copy of *Elements* as part of their 2017 subscription. Institutional subscriptions are available for US\$165 (US\$180 non-US addresses) a year in 2017. Contact the executive editor (jross@elements@gmail.com) for information.

Copyright 2017 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

Printed in USA

ISSN 1811-5209 (print)

ISSN 1811-5217 (online)

elementsmagazine.org

www.elements.geoscienceworld.org

GeoScienceWorld
Participating Publisher



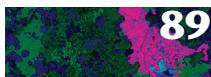
Volume 13, Number 2 • April 2017

Sulfides

Guest Editors: **Ekaterina S. Kiseeva** and **Marie Edmonds**



81



89



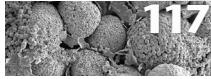
97



105



111



117

Mineralogy of Sulfides

David J. Vaughan and Claire L. Corkhill

Magmatic Sulfide Ore Deposits

Stephen J. Barnes, David A. Holwell, and Margaux Le Vaillant

Sulfide Minerals in Hydrothermal Deposits

Lluís Fontboté, Kalin Kouzmanov, Massimo Chiaradia, and Gleb S. Pokrovski

Volcanic Sulfides and Outgassing

Marie Edmonds and Tamsin A. Mather

Chalcophile Elements and Sulfides in the Upper Mantle

Ekaterina S. Kiseeva, Raúl O. C. Fonseca, and Duane J. Smythe

Sedimentary Sulfides

David Rickard, Marc Mussmann, and Jeffrey A. Steadman

DEPARTMENTS

Editorial – Little Black Blobs in the Background	75
From the Editors	76
Meet the Authors	78
Society News	
Association of Applied Geochemists	123
Mineralogical Society of Great Britain and Ireland	124
Meteoritical Society	126
Mineralogical Society of America	127
European Association of Geochemistry	128
Clay Minerals Society	130
Deutsche Mineralogische Gesellschaft	131
Geochemical Society	132
European Mineralogical Union	134
International Association of GeoChemistry	135
Mineralogical Association of Canada	136
Japan Association of Mineralogical Sciences	138
IMA Sponsored Society News – Austrian Mineralogical Society	139
Life in Science – On Implementing a Workplace Cultural Survey	140
Book Review – <i>Marine Geochemistry</i>	141
People in the News – Dominique Weis, Graham Pearson, Rodney Ewing	142
Calendar	143
Advertisers in this Issue	143