

ПМ
A47/m



American Mineralogist

Vol. 99, No. 5-6

An International Journal of Earth and Planetary Materials

May-June 2014

LETTERS

- 1171 Microporous gold: Comparison of textures from Nature and experiments**
Victor M. Okrugin, Elena Andreeva, Barbara Etschmann, Allan Pring, Kan Li, Jing Zhao, Grant Griffiths, Gregory R. Lumpkin, Gerry Triani and Joël Brugger
- 1175 Valence state partitioning of V between pyroxene and melt for martian melt compositions Y 980459 and QUE 94201: The effect of pyroxene composition and crystal structure**
James J. Papike, Paul V. Burger, Aaron S. Bell, Charles K. Shearer, Loan Le, John Jones and Paula Provencio

HIGHLIGHTS AND BREAKTHROUGHS

- 877 Absence of pressure-induced electron spin-state transition of iron in silicate glasses upon compression**
Sung Keun Lee
- 879 Dolomite discloses a hidden history of subducting slabs**
Stefano Poli

CROSSROADS IN EARTH AND PLANETARY MATERIALS

- 881 Crystal structures of laihunite and intermediate phases between laihunite-1M and fayalite: Z-contrast imaging and ab initio study**
Huifang Xu, Zhizhang Shen, Hiromi Konishi, Pingqiu Fu and Izabela Szlufarska

MINERALS IN THE HUMAN BODY

- 890 A novel technique for fluorapatite synthesis and the thermodynamic mixing behavior of F-OH apatite crystalline solutions**
Guy L. Hovis, Francis M. McCubbin, Hanna Nekvasil, Gokce Ustunisik, William R. Woerner and D.H. Lindsley

VOLCANIC ROCKS

- 898 The cooling kinetics of plagioclase feldspar as revealed by electron-microprobe mapping**
Gianluca Iezzi, Silvio Mollo, Edisa Shahini, Andrea Cavallo and Piergiorgio Scarlato

SPINELS RENAISSANCE—PAST, PRESENT, AND FUTURE

- 908 High-pressure behavior of thiospinel CuCr_2S_4**
Matteo Alvaro, Fabrizio Nestola, Nancy Ross, M. Chiara Domeneghetti and Leonid Reznitsky

MARTIAN ROCKS AND SOIL

- 914 Mössbauer parameters of iron in phosphate minerals: Implications for interpretation of martian data**
M. Darby Dyar, Erica R. Jawin, Elly Breves, Gerard Marchand, Melissa Nelms, Melissa D. Lane, Stanley A. Mertzman, David L. Bish and Janice L. Bishop
- 943 A temperature-controlled sample stage for in situ micro-X-ray diffraction: Application to Mars analog mirabilite-bearing perennial cold spring precipitate mineralogy**
Michael S. Bramble, Roberta L. Flemming, Jeffrey L. Hutter, Melissa M. Battler, Gordon R. Osinski and Neil R. Banerjee
- 948 Detection of iron substitution in natroalunite-natrojarosite solid solutions and potential implications for Mars**
Thomas M. McCollom, Bethany L. Ehlmann, Alian Wang, Brian M. Hynek, Bruce Moskowitz and Thelma S. Berquó

ARTICLES

- 965 Harmunite CaFe_2O_4 : A new mineral from the Jabel Harmun, West Bank, Palestinian Autonomy, Israel**
Irina O. Galuskina, Yevgeny Vapnik, Biljana Lazic, Thomas Armbruster, Mikhail Murashko and Evgeny V. Galuskin
- 976 An assessment of the reliability of melt inclusions as recorders of the pre-eruptive volatile content of magmas**
Rosario Esposito, Jerry Hunter, James D. Schiffbauer, Nobumichi Shimizu and Robert J. Bodnar
- 999 Beryllium mineral evolution**
Edward S. Grew and Robert M. Hazen
- 1022 Incorporation of Y and REEs in aluminosilicate garnet: Energetics from atomistic simulation**
William D. Carlson, Julian D. Gale and Kate Wright
- 1035 Role of silica for the progress of serpentinization reactions: Constraints from successive changes in mineralogical textures of serpentinites from Iwanaidake ultramafic body, Japan**
Akane Miyoshi, Tetsu Kogiso, Naoto Ishikawa and Kenji Mibe

(Contents continued from front cover)

- 1045 Ophirite, $\text{Ca}_2\text{Mg}_4[\text{Zn}_2\text{Mn}_3^{2+}(\text{H}_2\text{O})_2(\text{Fe}^{3+}\text{W}_9\text{O}_{34})_2]\cdot 46\text{H}_2\text{O}$, a new mineral with a heteropolytungstate tri-lacunary Keggin anion**
Anthony R. Kampf, John M. Hughes, Barbara P. Nash, Stephen E. Wright, George R. Rossman and Joe Marty
- 1052 Bubble formation during decompression of andesitic melts**
Adrian Fiege, François Holtz and Sarah B. Cichy
- 1063 Manganese carbonate formation from amorphous and nanocrystalline precursors: Thermodynamics and geochemical relevance**
A.V. Radha and Alexandra Navrotsky
- 1071 Insights into the crystal chemistry of Earth materials rendered by electron density distributions: Pauling's rules revisited**
G.V. Gibbs, Nancy L. Ross, David F. Cox and Kevin M. Rosso
- 1085 Adsorption of sulfur dioxide on volcanic ashes**
Deborah Schmauss and Hans Keppler
- 1095 Sulfidation of native gold**
Galina Palyanova, Nick Karmanov and Natalie Savva
- 1104 Electrical conductivity of synthetic mullite single crystals**
Mohammed Malki, Jürgen Schreuer and Hartmut Schneider
- 1109 In situ Raman spectroscopy identification of the S_3^- ion in S-rich hydrothermal fluids from synthetic fluid inclusions**
Nicolas Jacquemet, Damien Guillaume, Antoine Zwick and Gleb S. Pokrovski
- 1119 Melting phase equilibria of model carbonated peridotite from 8 to 12 GPa in the system $\text{CaO-MgO-Al}_2\text{O}_3\text{-SiO}_2\text{-CO}_2$ and kimberlitic liquids in the Earth's upper mantle**
Shantanu Keshav and Gudmundur H. Gudfinnsson
- 1127 Effect of orientation on ion track formation in apatite and zircon**
Weixing Li, Patrick Kluth, Daniel Schauries, Matias D. Rodriguez, Maik Lang, Fuxiang Zhang, Maxim Zdorovets, Christina Trautmann and Rodney C. Ewing
- 1133 Major, minor, and trace element composition of pyromorphite-group minerals as recorder of supergene weathering processes from the Schwarzwald mining district, SW Germany**
Gregor Markl, Michael A.W. Marks, Johannes Holzäpfel and Thomas Wenzel
- 1147 Toward an accurate ab initio estimation of compressibility and thermal expansion of diamond in the [0, 3000 K] temperature and [0, 30 GPa] pressures ranges, at the hybrid HF/DFT theoretical level**
Mauro Prencipe, Marco Bruno, Fabrizio Nestola, Marco De La Pierre and Paolo Nimis
- 1155 Vanadio-oxy-chromium-dravite, $\text{NaV}_3(\text{Cr}_4\text{Mg}_2)(\text{Si}_6\text{O}_{18})(\text{BO}_3)_3(\text{OH})_3\text{O}$, a new mineral species of the tourmaline supergroup**
Ferdinando Bosi, Leonid Reznitskii, Henrik Skogby and Ulf Hålenius
- 1163 Grațianite, MnBi_2S_4 , a new mineral from the Băița Bihor skarn, Romania**
Cristiana L. Ciobanu, Joël Brugger, Nigel J. Cook, Stuart J. Mills, Peter Elliott, Gheorghe Damian and Floarea Damian

MSA AWARD PRESENTATIONS

- 1179 Presentation of the Mineralogical Society of America Award for 2013 to Wendy Li-Wen Mao**
Gordon E. Brown Jr.
- 1180 Acceptance of the Mineralogical Society of America Award for 2013**
Wendy Mao
- 1181 Presentation of the 2013 Roebling Medal of the Mineralogical Society of America to Frank C. Hawthorne**
Norman M. Halden
- 1183 Acceptance of the 2013 Roebling Medal of the Mineralogical Society of America**
Frank C. Hawthorne
- 1185 Presentation of the Distinguished Public Service Award for 2013 of the Mineralogical Society of America to Pierrette Tremblay**
Rodney C. Ewing
- 1186 Acceptance of the Distinguished Public Service Award for 2013 of the Mineralogical Society of America**
Pierrette Tremblay
- 1188 Presentation of the Dana Medal of the Mineralogical Society of America for 2014 to Patricia Dove**
Alexandra Navrotsky
- 1189 Acceptance of the Dana Medal of the Mineralogical Society of America for 2014**
Patricia M. Dove
- 1190 BOOK REVIEW**



GeoScienceWorld

Participating Publisher

SPONSORING BENEFACTORS

Cargille Laboratories
Excalibur Mineral Corporation
ExxonMobil Upstream Research Co.
Gemological Institute of America
The Hudson Institute of Mineralogy
Vulcan Materials—Corporate Office
W.R. Grace & Co.

CONTRIBUTING BENEFACTORS

Blake Industries
Bruker AXS Inc. (WI)
Microtrace LLC
R.T. Vanderbilt Company, Inc.
The Ash Grove Charitable Foundation
WW Norton & Company, Inc.