SCOPE OF THE JOURNAL

Mineralogical Magazine is an international journal of mineral sciences, published six times a year, which covers the fields of mineralogy, crystallography, geochemistry, petrology, environmental geology and economic geology. The journal has been published continuously since the founding of the Society in 1876 and is a leading journal in its field. As well as research papers the journal also includes book reviews.

SUBMISSION OF MANUSCRIPTS

Authors wishing to submit a paper to Mineralogical Magazine should first consult the Society's Notes for Authors Submitting Papers to the Mineralogical Magazine which can be found on the web site at https://www.cambridge.org/ MGM. All manuscripts are to submitted online at http://www.editorialmanager.com/minmag All authors are allowed, free of charge, an e-print of their papers published in the journal.

JOIN THE MINERALOGICAL SOCIETY TODAY

If you are a regular reader of Mineralogical Magazine consider joining the Society and receiving your own copy six times a year at very modest cost. Membership currently starts at £55 per annum. For this, you will receive bimonthly copies of Elements, our international membership magazine (in full colour) on mineralogy, geochemistry and petrology as well as online access to Mineralogical Magazine, Clay Minerals and Elements. You may also opt to pay an additional premium in order to continue receiving paper copies of our journals. Full details on how to join the Society and an application form can be found on the Society's web site at www.minersoc.org. Membership of the Society introduces you to a vibrant community of those interested in the mineral sciences. Through membership of one or more of the Society's eight special interest groups you can take an active part in the Society's numerous scientific meetings and conferences as described on the website.

Mineralogical Magazine

MINERALOGICAL SOCIETY JOURNALS

International journal of mineral sciences which covers the fields of mineralogy, crystallography, geochemistry, petrology, environmental geology and economic geology. This journal is available primarily as an e-journal.

Clay Minerals

International journal of clay minerals and fine particle science, published four times a year, including research papers about clays, clay minerals and related materials, natural or synthetic. The journal includes papers on Earth processes, soil science, geology/mineralogy, chemistry/material science, colloid/surface science and applied science and technology. The journal is available primarily as an e-journal.

COPYRIGHT

For both the paper and electronic versions, copyright of all papers accepted shall be assigned to The Mineralogical Society before publication, except where Crown Copyright is reserved.

Typeset by Nova Techset Private Limited, Bengaluru and Chennai, India Printed by Henry Ling Ltd., Dorchester, Dorset, UK Published by Cambridge University Press, Shaftesbury Road, Cambridge, UK

CONTENTS

EDITORIAL

ANATOLY N. ZAITSEV, ANTON R. CHAKHMOURADIAN, SERGEY V. KRIVOVICHEV AND VICTOR N. YAKOVENCHUK : Mineralogy and petrology of alkaline rocks and carbonatites: Celebrating the life and work of Gregory Yu. Ivanyuk (1966–2019)

ARTICLES

EKATERINA P. REGUIR, EKATERINA B. SALNIKOVA, PANSEOK YANG, ANTON R. CHAKHMOURADIAN, MARIA V. STIFEEVA, IRINA T. RASS AND ALEKSANDR B. KOTOV: U–Pb geochronology of calcite carbonatites and jacupirangite from the Guli alkaline complex, Polar Siberia, Russia	469
ROGER H. MITCHELL AND J. BARRY DAWSON: Mineralogy of volcanic calciocarbonatites from the Trig Point Hill debris flow, Kerimasi volcano, Tanzania: implications for the altered natrocarbonatite hypothesis	484
MARIA A. SITNIKOVA, VICKY DO CABO, FRANCES WALL AND SIMON GOLDMANN: Burbankite and pseudomorphs from the Main Intrusion calcite carbonatite, Lofdal, Namibia: association, mineral composition, Raman spectroscopy	496
LOIC Y. LE BRAS, ROBERT BOLHAR, LUNGA BAM, BRADLEY M. GUY, GRANT M. BYBEE AND PAUL A.M. NEX: Three-dimensional textural investigation of sulfide mineralisation from the Loolekop carbonatite–phoscorite polyphase intrusion in the Phalaborwa Igneous Complex (South Africa), with implications for ore-forming processes	514
ANATOLY N. ZAITSEV, JOHN SPRATT, ALEXANDER G. SHTUKENBERG, ANDREI A. ZOLOTAREV, SERGEY N. BRITVIN, SERGEY V. PETROV, ALINA V. KUPTSOVA AND ANTON V. ANTONOV: Oscillatory- and sector-zoned pyrochlore from carbonatites of the Kerimasi volcano, Gregory rift, Tanzania	532
SHRINIVAS G. VILADKAR AND NATALIA V. SOROKHTINA: Evolution of pyrochlore in carbonatites of the Amba Dongar complex, India	554
MONOJIT DEY, ROGER H. MITCHELL, SOURAV BHATTACHARJEE, ANIKET CHAKRABARTY, SUPRIYO PAL, SUPRATIM PAL AND AMIT KUMAR SEN: Composition and genesis of albitite-hosted antecrystic pyrochlore from the Sevattur carbonatite complex, India	568
MONOJIT DEY, SOURAV BHATTACHARJEE, ANIKET CHAKRABARTY, ROGER H. MITCHELL, SUPRIYO PAL, SUPRATIM PAL AND AMIT KUMAR SEN: Compositional variation and genesis of pyrochlore, belkovite and baotite from the Sevattur carbonatite complex, India	588
TARAS L. PANIKOROVSKII, VICTOR N. YAKOVENCHUK, NATALIYA YU. YANICHEVA, YAKOV A. PAKHOMOVSKY, VLADIMIR V. SHILOVSKIKH, VLADIMIR N. BOCHAROV AND SERGEY V. KRIVOVICHEV: Crystal chemistry of ivanyukite-group minerals, $A_{3-x}H_{1+x}[Ti_4o_4(SiO_4)_3](H_2O)_n$ ($A = Na, K, Cu$), ($n = 6-9, x = 0-2$): crystal structures, ion-exchange, chemical evolution	607
SERGEY V. KRIVOVICHEV, TARAS L. PANIKOROVSKII, VICTOR N. YAKOVENCHUK, EKATERINA A. SELIVANOVA	007
AND GREGORY YU. IVANYUK: Trigonal variation in the garnet supergroup: the crystal structure of nikmelnikovite, Ca ₁₂ Fe ²⁺ Fe ³⁺ ₃ Al ₃ (SiO ₄) ₆ (OH) ₂₀ , from Kovdor massif, Kola Peninsula, Russia	620
NATALIA V. ZUBKOVA, IGOR V. PEKOV, NIKITA V. CHUKANOV, VASILIY O. YAPASKURT, ANNA G. TURCHKOVA, TATIANA S. LARIKOVA AND DMITRY YU. PUSHCHAROVSKY: A highly hydrated variety of elpidite from the Khibiny alkaline complex, Kola Peninsula, Russia	627
IMA Commission on New Minerals, Nomenclature and Classification (CNMNC)	
RITSURO MIYAWAKI (CHAIRMAN, CNMNC), FRÉDÉRIC HATERT (VICE-CHAIRMAN, CNMNC), MARCO PASERO (VICE-CHAIRMAN, CNMNC) AND STUART J. MILLS (SECRETARY, CNMNC): Newsletter 62	634

Cambridge Core For further information about this journal please go to the journal website at: cambridge.org/mgm



CAMBRIDGE UNIVERSITY PRESS

465