



# Mineralogical Association of Canada

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## THE CANADIAN MINERALOGIST NEWS

### Highlights

The highlights of our September issue include a taxonomic assessment of mineral occurrences based on their rarity and uniqueness of paragenesis, a study on the effects of mineral variability on Li contents in the Whabouchi pegmatite, and an assessment on how to correct for mass bias in H and O isotopic analyses in tourmalines by SIMS. In addition, a slew of new minerals are characterized, including two featuring lead, nitroplumbite ( $[\text{Pb}_4(\text{OH})_4](\text{NO}_3)_4$ ) and matthiasweilite ( $\text{PbTe}^{4+}\text{O}_3$ ), plus two featuring siderophile transition metals, pseudodickthomssenite ( $\text{Mg}(\text{VO}_3)_2 \cdot 8\text{H}_2\text{O}$ ) and menegite ( $\text{Ba}(\text{Mg}, \text{Mn}^{2+})\text{Mn}^{3+}(\text{PO}_4)_4(\text{OH})_4 \cdot 4\text{H}_2\text{O}$ ).

Our recently most-read publications according to GeoScience World include the following.

**PGE distribution in Merensky wide-reef facies of the Bushveld Complex, South Africa: Evidence for localized hydromagmatic control**, by Stephen Prevec, Savvas Largatzis, William Brownscombe, and Tobias Salge (Vol. 59, 2021).

**The Magmatic-Hydrothermal Transition in Lithium Pegmatites: Petrographic and Geochemical Characteristics of Pegmatites from the Kamativi Area, Zimbabwe**, by Richard Shaw, Kathryn Goodenough, Eimear Deady, Paul Nex, Brian Ruzvidzo, Jeremy Rushton, and Ian Mounteney.

**Development of Tourmaline-Bearing Lithologies of the Peraluminous Tusaquillas Composite Granitic Batholith, NW Argentina: Evidence from Quartz and Tourmaline**, by Darrell Henry, Eduardo Zappettini, and Barbara Dutrow.

Our most cited recent publications are headed by the following.

**The classification of granitic pegmatites revisited**, by Petr Černý and Scott Ercit.

**$\text{U}^{6+}$  minerals and inorganic compounds: insights into an expanded structural hierarchy of crystal structures**, by Peter Burns.

## OUR ASSOCIATE EDITORS

As a means of both gratefully acknowledging and promoting the efforts of researchers in the mineralogical and geoscience community who donate their time to the necessary task of facilitating effective peer review, we would like to use this space to feature our Associate Editors (AEs). In this issue, we feature two of our longest-standing contributors from our crystallographic expertise base. Both have provided editorial services to TCM since (at least) 2010.

### Charles Geiger



Charles Geiger is currently associated with the Departments of Chemistry and Physics of Materials at the University of Salzburg and Mineralogy and Crystallography at the University of Vienna (Austria). He worked previously in Germany at several universities. His formative years in terms of study were spent in the U.S. at the Universities of Michigan (BS), Wisconsin (MS), and Chicago (PhD). His research interests are in the fields of mineral and materials

science. In terms of the former, they include investigating silicate solid solutions, microporous phases, and general structure-property

relations. His materials research has focused on fast-ion conductors for use in solid-state Li-ion batteries. This has involved collaboration with the Toyota Motor Corporation. Charles is one of our longest-serving associate editors, having served TCM in this capacity since 2007. He is also presently serving as an associate editor for *American Mineralogist* and *Mineral Magazine*.

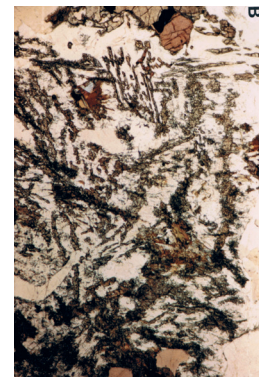
### Ru Cheng Wang



Dr Ru Cheng Wang is a member of the School of Earth Sciences & Engineering and the State Key Laboratory for Mineral Deposits Research at Nanjing University (Nanjing, China). He has particular research interests in pegmatite-hosted mineralization, including Li, As, and rare metals, including those facilitated by hydrothermal fluids, but has also published extensively on HFSE-minerals, zircon chemistry, and isotopic studies (including Lu-Hf as a tracer, and light element isotope fractionation in hydrothermal settings). Dr Wang is also interested in the crystal chemistry of clay minerals. He has over 150 publications and over 3000 total citations and has been an AE for TCM since 2010.

## FEATURED MINERAL/TEXTURE

Our featured mineral texture for this article is the mineral osumilite, a rare high-temperature cyclosilicate mineral first characterized by Myashiro in 1953. It is often found with sapphirine, indicative together of both high temperature and pressure, and has broken down to form a complex pseudomorphic assemblage of quartz, orthoclase, cordierite, and highly pleochroic orthopyroxene, along with associated sillimanite and biotite. The host rock here is granulite-facies charnockitic paragneiss from the Grenville Province in eastern Labrador.



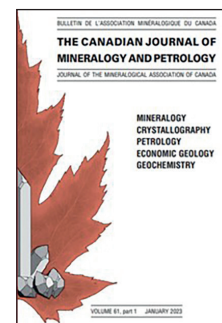
The breakdown assemblage of osumilite. Field of view is around 4 mm wide, in plane-polarized light. IMAGE COURTESY OF S. PREVEC.

## 50 years ago, in The Canadian Mineralogist

Interestingly, the August 1972 issue of *The Canadian Mineralogist* featured not one, but eight papers on the Tanco pegmatite (Manitoba, Canada), all coauthored by Petr Černý, noteworthy as his 2005 paper on granitic pegmatite classification, from 32 years later, currently stands as the most cited output from this journal (as noted above). These were amongst the late Dr Černý's earliest publications in our journal and account for about 10% of his eventual output, a fertile pegmatite indeed.

## JOURNAL NAME CHANGE

- Starting with the January 2023 volume, our journal name will change from 'The Canadian Mineralogist' to 'The Canadian Journal of Mineralogy and Petrology'.
- The name change had been recommended by our editors to better reflect the breadth of the journal (petrology, crystal chemistry, ore deposits and applied mineralogy).



The numbering will continue from the last issue published under the former name; the first issue published under the new name will be numbered Volume 61, Number 1, January 2023.

- A new ISSN will be assigned shortly, and notification of the name change to Clarivate will trigger a new record to be created for the new title to ensure continuation of our Journal Web of Science Indexing and publishing of our Impact Factor in the Journal Citation Reports. The new title will remain in coverage during the course of the review or editorial evaluation.

Crossref DOI Identifier Referencing, allowing citation linking using Digital Object Identifiers (DOIs) will not be affected by this change of our journal title or ISSN—we'll be able to continue registering DOIs for the updated title. The registration of our first DOI for the new title (with the new ISSN) will create a new title record for the journal.

- Geoscience World (GSW), where our journal is hosted, is in the process of creating a new page for the journal under the new title. There will be a clear and complete bibliographic reference form presented in all locations with the new title. They will keep listing both titles and putting notes on each one to explain the name change and provide links to the two. The archive will remain under the previous title and the new issues going forward will appear under the new title. Of course, all content will be available in search engines, etc.

## SUDBURY 2023 GAC-MAC-SGA JOINT ANNUAL MEETING

24–27 May 2023

Laurentian University, in Sudbury,  
Ontario, Canada

*Discovering Ancient to Modern Earth –  
Découvrir la Terre Ancienne à Moderne*



The geoscience community is invited to attend the Joint Annual Meeting of the **Geological Association of Canada (GAC)**, **Mineralogical Association of Canada (MAC)**, and **Society for Geology Applied to Ore Deposits (SGA)**, which will be held at Laurentian University in Sudbury, Ontario, Canada, on **24–27 May 2023**, with pre- and post-meeting workshops and field trips.

The meeting is being hosted by the **Harquail School of Earth Sciences and Mineral Exploration Research Centre at Laurentian University**.

### Registration

#### Important Dates

**01 April 2023:** Deadline for early registration; deadline for field trip, workshops, and short course registrations

**24 April 2023:** Deadline for hotel “block” bookings

**23 May 2023:** Deadline for online registration

**24–27 May 2023:** On-site registration

For additional information not found on the website (<https://event.fourwaves.com/sudbury2023/pages>), contact us at: [Sudbury2023@laurentian.ca](mailto:Sudbury2023@laurentian.ca).

Hoping to see you in Sudbury!

## MAC SCHOLARSHIP WINNERS

We congratulate **Alicia Escribano** and **Philippe Mongeau**, each of whom received a 2022 Mineralogical Association of Canada Scholarship.



**Alicia Escribano** completed her BSc at the University of Concepcion (Chile). She then worked as an exploration geologist in the mining industry in Chile, including at the CODELCO Chuquibambilla Mine (northern Chile), where her team created a 3D structural model of the deposit that linked the rock strength with the different types of mineralization and alteration. To grow as an investigator, she obtained an MSc in Geology at Acadia

University (Nova Scotia, Canada), under the supervision of Dr Sandra Barr. Using whole-rock and zircon chemistry and geochronology, she studied Neoproterozoic Avalonian rocks of southern New Brunswick (Canada). Following her masters, she commenced a PhD at Memorial University under the supervision of Dr Stephen Piercey. In her research, she studies the role and importance of magmatism in controlling the metal input among different styles of VMS deposits. Using whole-rock and zircon chemistry including Nd-Hf isotopes in zircon, she investigates the relative roles of the recycled crust and/or juvenile components in magma genesis and how these affect the metal budget and style of VMS formation. This includes the use of zircon chemistry, which serves to understand potential metal enrichment processes, and the physico-chemical conditions of magma formation and relationships with VMS deposits. Geochronology will help determine how the magmatism and VMS formation vary in time and if the timing has any impact on the metal budgets in VMS deposits. This has important implications for VMS in similar peri-continental settings and for understanding the role of magmatism in VMS deposit genesis, globally.



**Philippe Mongeau** started his undergraduate studies in computer science before completing his BSc in geological engineering at Laval University (Canada) in 2021. During this time, he started working with Dr Crystal Laflamme on the role of fluid-rock reactions for the gold endowment of the Meliadine Gold District in Nunavut, Canada, which is now part of his MSc research.

Under the supervision of Dr Laflamme and Dr Mercier-Langevin and in collaboration with Agnico Eagle Mines, his project aims to develop new methods for near-mine exploration by completing the  $\delta^{34}\text{S}$  and  $\Delta^{33}\text{S}$  combined with trace element chemistry of gold-associated sulfides to track fluid-rock reactions at the district scale. These reactions induce physiochemical changes that affect the auriferous fluids. The most important of these in mid-crustal orogenic gold systems is oxidation of the fluid, which promotes gold precipitation, inducing a traceable shift in the  $\delta^{34}\text{S}$  of gold associated sulfides. On the other hand, the  $\Delta^{33}\text{S}$  value fingerprints an Archean sedimentary reservoir, granting insight into the source of mineralizing fluids. By using multiple sulfur isotopes, both in bulk and in situ, Philippe aims to test sulfur isotope vectors leading to high gold grades in the district, the results of which could be applied to orogenic gold deposits worldwide to improve predictive targeting for exploration.

To achieve this, key analytical work on samples collected at the mine site includes the study of sulfide zonation and habit of gold using backscatter imaging and WDS elemental maps and in situ analysis of trace elements and  $\delta^{34}\text{S}$  through LA-ICP-MS-(QQQ) and SIMS, as well as high-precision bulk  $\text{SF}_6^+$  IRMS analyses of multiple sulfur isotopes. After completing his MSc, Philippe aims to further develop predictive targeting methods by combining his computer science background with his current research.