



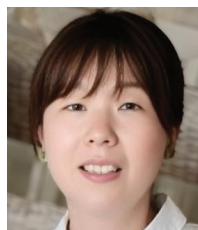
# Japan Association of Mineralogical Sciences

[http://jams.la.coocan.jp/e\\_index.html](http://jams.la.coocan.jp/e_index.html)

## AWARDS

The Japan Association of Mineralogical Sciences (JAMS) is proud to announce the recipients of its 2023 society awards. The JAMS Award for Young Scientists is awarded to two scientists who are under 37 years of age and have made exceptional contributions to mineralogical and related sciences. The JAMS Award for Applied Mineralogy is awarded to one scientist who has made a remarkable contribution to the field of applied mineralogy. The JAMS Research Paper Award is awarded to the authors of one or more excellent papers that were published in the *Journal of Mineralogical and Petrological Sciences (JMPS)* and/or *Ganseki-Kobutsu-Kagaku (GKK)* in the past three years.

### JAMS Award for Young Scientists to Megumi Matsumoto



Megumi Matsumoto is an assistant professor in the Earth Science department at Tohoku University. She started microscopic studies on carbonaceous chondrites under the supervision of Professor Kazushige Tomeoka at Kobe University. After her PhD, she moved to Kyoto University and started synchrotron X-ray CT studies of carbonaceous chondrites in collaboration with Professor Akira Tsuchiyama. She applied combined analyses using electron

microscopy and synchrotron X-ray CT to primitive carbonaceous chondrites and made important findings. One of the notable achievements is a discovery of "ultra-porous lithology (UPL)," namely, fossil asteroidal ice, in Acfer 094 carbonaceous chondrite. UPL is a remnant of solid ice-silicate dust aggregate originally formed in the

early solar nebula by sintering of fluffy ice-silicate dust via sublimation and recondensation of H<sub>2</sub>O ice at the H<sub>2</sub>O snow line. Her study on UPL revealed how the asteroidal ice was distributed in the Acfer 094 parent body and provided important insights on the formation of icy small bodies in the early Solar System. After relocating to Tohoku University, she applied combined analysis to asteroid Ryugu samples collected by the *Hayabusa 2* sample return mission and discovered fluid inclusions of carbonated water and evidence of impacts of cometary dust on the asteroid Ryugu surface from the samples. These findings contributed to interpretation of formation and evolution of asteroid Ryugu in the Solar System based on material evidence. She is extending her study to recent and upcoming returned extraterrestrial samples, aiming to better understanding of origin of our Solar System.

### JAMS Award for Young Scientists to Takayuki Ishii

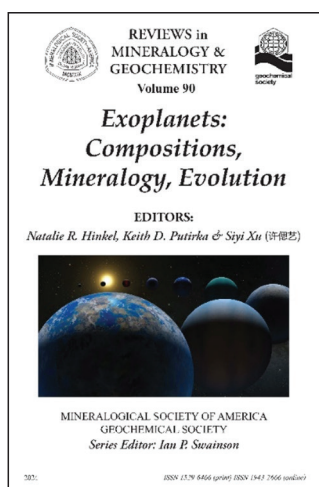


Takayuki Ishii is an associate professor at the Institute for Planetary Materials, Okayama University, Japan. He received his PhD degree from Gakushuin University under the supervision of Professor Masaki Akaogi. He is interested in understanding the structure and dynamics of the Earth's interior by means of high-pressure experiments using a Kawai-type multi-anvil press. One of his achievements is the development of multi-anvil technology and its applications to

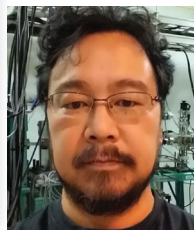
deep-Earth science. He achieved pressure generation to 65 GPa ( $\approx 1500$  km depth), which is  $\sim 2.5$  times higher than obtained using conventional technology. He investigated the chemistry of bridgmanite under lower mantle conditions with this technique. He found that oxygen vacancies in bridgmanite decrease with depth and disappear around  $\sim 1000$  km depth, possibly explaining the viscosity jump observed at that depth. He also developed in-situ X-ray diffraction techniques in a multi-anvil press to precisely and accurately determine phase boundaries of bridgmanite-forming reactions, explaining 660-km discontinuity structures, slab stagnation, and plume invisibility around 1000 km depth. Another achievement includes phase relations of minerals and element partitioning between minerals under hydrous conditions. He found strong water partitioning to hydrous minerals compared with coexisting nominally anhydrous minerals. The results suggest a metastable olivine wedge, even in a wet subducting slab, and explain deep-focus earthquakes and slab stagnation caused by the dry transformations of olivine. He also revealed weight percent levels of water in CaCl<sub>2</sub>-type aluminous silica even at hot-plume temperatures, suggesting a new model for the deep water cycle by this phase.

## EXOPLANETS

MSA is pleased to offer *Reviews in Mineralogy & Geochemistry* Volume 90: *Exoplanets: Compositions, Mineralogy, Evolution*. Volume editors are Natalie R. Hinkel, Keith D. Putirka, and Siyi Xu. The series editor is Ian P. Swainson, and *American Mineralogist* Managing Editor Rachel Russell is responsible for production. The volume is available in both hard copy and online via a subscription to the *Reviews* series. For more information, visit the Publications section of the MSA website: [www.msaweb.org](http://www.msaweb.org). While there, you can also view the list of MSA's other publications. This volume was accompanied by a short course at the Goldschmidt Conference in Chicago, IL, USA in August.



### JAMS Award for Applied Mineralogy to Kentaro Uesugi



Dr. Kentaro Uesugi is a chief scientist at the Japan Synchrotron Radiation Research Institute (JASRI), where he has made significant contributions to the field of mineral science through his work at synchrotron radiation facility, SPring-8. Over the years, he has been instrumental in developing X-ray imaging techniques, particularly X-ray computed tomography (CT), and has participated in numerous collaborative studies in Earth and planetary materials research. His expertise has

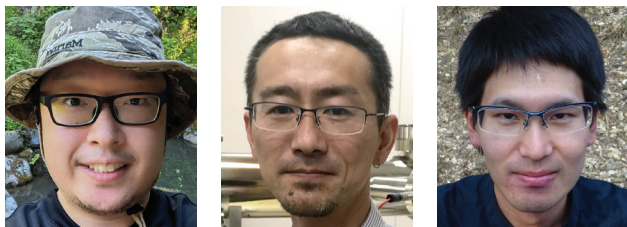
extended beyond mineral science, finding applications in materials science, medical and biological sciences, paleontology, and archaeology. As a result, he has become a key figure in promoting interdisciplinary and international research, with over 600 co-authored papers to his name. Since joining JASRI in 2000, Dr. Uesugi has been involved in the development of various X-ray imaging techniques at multiple beamlines,

## UPCOMING MEETING

2025 Tucson Mineral Symposium Call for Papers: The call for papers is now open for the 2025 joint Friends of Mineralogy/Tucson Gem and Mineral Society/MSA Symposium. The symposium will be held on Saturday, February 15, 2025. For more information, visit <https://www.friendsofmineralogy.org/call-for-papers/>.

including BL47XU, BL20B2, and BL20XU. His work encompasses a wide range of imaging methods, such as X-ray micro-CT/laminography, nano-CT, phase contrast CT, real-time imaging, high-speed imaging, and X-ray diffraction CT. The current capabilities of these imaging techniques are impressive, with CT images achieving pixel sizes of about 20 nm, approaching the spatial resolution of typical scanning electron microscopes. By combining absorption and phase contrast, it is now possible to identify mineral phases. Additionally, high-speed CT imaging allows for the three-dimensional tracking of crystal formation and deformation processes in real-time, enabling high temporal resolution 4D CT studies.

### JAMS Research Paper Award to Raiki Yamada, Toshiro Takahashi, and Yasuhiro Ogita



The JAMS Research Paper Award goes to authors **Raiki Yamada**, **Toshiro Takahashi**, and **Yasuhiro Ogita** for their paper "Petrogenesis of Oligocene to Miocene volcanic rocks from the Toyama basin of the SW Japan arc: Temporal change of arc volcanism during the back-arc spreading in the Japan Sea", which was published in the 2023 JMPS (118:026, <https://doi.org/10.2465/jmps.221219a>).

### JOURNAL OF MINERALOGICAL AND PETROLOGICAL SCIENCES

#### Vol. 119, Issue Antarctica, 2024

Recent advances in mineralogy, petrology, geochemistry, and geochronology in East Antarctica. Tomokazu HOKADA, M. SATISH-KUMAR, Tetsuo KAWAKAMI.

#### Vol. 119, Issue 1, 2024

#### ORIGINAL ARTICLE

Deformation microstructures in shock-compressed single crystal and powdered rutile. Yuhei UMEDA, Yuma NAGAI, Naotaka TOMIOKA, Toshimori SEKINE, Masashi MIYAKAWA, Takamichi KOBAYASHI, Hitoshi YUSA, Takuo OKUCHI.

Petrography and geochronology of the Kuki granite, Kitakami Mountains, northeastern Japan: Shallow crustal intrusion and emplacement processes of granitic magma. Satoshi SUZUKI, Takashi YUGUCHI, Keito ISHIGURO, Kyoka ENDO, Asuka KATO, Kosuke YOKOYAMA, Yasuhiro OGITA, Tatsunori YOKOYAMA, Shuhei SAKATA, Takeshi OHNO, Eiji SASAO.

Mineralogical aspects of asteriscus of goldfish (*Carassius auratus*) consisting of vaterite. Gen TAKAHASHI, Taiga OKUMURA, Takayoshi NAGAYA, Michio SUZUKI, Toshihiro KOGURE.

## From an Idea to a Published Issue

Every year, *Elements* publishes six thematic issues on subjects related to the general disciplines of mineralogy, geochemistry, and petrology. The editorial team looks for topics that

- are broadly related to mineralogy, geochemistry, and petrology
- are interdisciplinary
- represent established but progressing fields
- would be of interest to a broad cross section of readers
- have not been adequately represented by *Elements* before or have advanced considerably since the topic was previously covered

Each proposal is carefully evaluated by our editorial team for thematic scope, content, and authorship. Feedback is then provided to the proposers.

Once a proposal is accepted and included in the *Elements* lineup, the fun really begins! Over the subsequent 15–20 months, timelines and deadlines are set, authors are invited by the guest editors to write articles, and articles go through several stages of review (by external reviewers, by the guest and principal editors, and by the *Elements* editorial team). At the end of this process, the issue goes to press and is shipped to our over 16,000 readers.

The journey from an idea to a published magazine involves many steps. The goal? A lineup of well-written thematic issues that readily conveys the exciting aspects of mineralogy, petrology, and geochemistry to specialists and non-specialists alike.

## Call for Thematic Proposals

Would you like to read about a certain topic in *Elements*?  
Do you think your research area would make a great thematic issue?  
Submit a thematic proposal!

*Elements* has two annual submission deadlines each year:  
**March 25** and **September 25**.



For more information, visit:  
<https://elementsmagazine.org/publish-in-elements/>

We look forward to receiving your proposal!