Japan Association of Mineralogical Sciences

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JAPAN ASSOCIATION OF MINERALOGICAL SCIENCES AWARDEES

The Japan Association of Mineralogical Sciences (JAMS) is proud to announce the recipients of the 2018 society awards. The **JAMS Award for Young Scientists** is presented to two scientists under 37 years of age who have made exceptional contributions to mineralogical and related sciences. The **JAMS Award for Applied Mineralogy** is awarded to one scientist who has made remarkable contributions in the field of applied mineralogy. The **JAMS Research Paper Award** is awarded to authors of exceptional papers published in the *Journal of Mineralogical and Petrological Sciences* (*JMPS*) and *Ganseki-Kobutsu-Kagaku* (*GKK*) in the past three years.

JAMS Award for Young Scientists: Masahiro Kayama

Masahiro Kayama

Masahiro Kayama is an assistant professor at the Frontier Research Institute for Interdisciplinary Sciences at Tohoku University. He received his PhD from the Okayama University of Science under the supervision of Professor Hirotsugu Nishido. Masahiro Kayama used quantitative analytical methods to investigate the nature of mineral cathodoluminescence. The goal was to use mineral cathodoluminescent phenomena to better understand hydrothermal metasomatism in syenite feldspars, shock metamorphism in quartz, feldspar and glasses from impactites and meteorites, and natural radiation exposure in feldspar and zircon from granite. A recent research topic involved interpreting the evolution of the Moon from the viewpoint of lunar water history and to utilize lunar water as a resource in future human lunar exploration. He also used Raman spectroscopy, synchrotron X-ray diffraction, and transmission electron microscopy to discover that moganite (a monoclinic polymorph of quartz) from a lunar meteorite requires water under high pressure to form. The existence of moganite in a lunar meteorite, therefore, supports the possibility that abundant water remains as ice in the subsurface of a local crater within the Moon's Procellarum KREEP Terrane. He also plans to study traces of water derived from the solar wind and from asteroid/comet impacts with the Moon, from volcanic rocks returned from NASA's Apollo missions and from Russia's Luna missions.

JAMS Award for Young Scientists: Ryosuke Sinmyo

Ryosuke Sinmyo

Ryosuke Sinmyo is an associate professor at the University of Tokyo (Japan). He received his PhD from Tokyo Institute of Technology under the supervision of Professor Kei Hirose. Sinmyo uses high-pressure and high-temperature experiments to study the physical and chemical properties of the materials of Earth's mantle. He has intensively examined the crystal structure, physical properties, and electronic state of iron and the phase relationships of minerals at lower mantle conditions. Sinmyo found that the partitioning and valence state of iron between minerals dramatically changes upon reaching the post-perovskite phase transition at the lowermost mantle. This may explain very sharp D'' discontinuity observed above core–mantle boundary. This research was achieved by a successful combination of diamond anvil cell and transmission electron microscope techniques. Sinmyo also used a multi-anvil apparatus to discover a new iron-oxide phase that might exist in the lower mantle. Relics of this phase may be found as inclusions in diamonds formed in the deep mantle. Sinmyo developed in situ high-pressure/high-temperature electrical conductivity measuring system to experimentally investigate further Earth's internal structure. In addition to electrical conductivity, he investigated the valence state, substitution site, and spin state of iron in lower mantle minerals by means of single crystal X-ray diffraction and Mössbauer spectroscopy. He found that the pyrolitic chemical model is consistent with the electrical conductivity of the 'average' lower mantle. In addition, he examined sound velocity of ferropericlase by nuclear resonant inelastic X-ray scattering spectroscopy to determine the effect of iron concentration on seismic wave velocity. Other experiments undertaken by Sinmyo include the electrical conductivity of NaCl-bearing water up to 1 GPa to constrain the transportation path of seawater in a subduction zone. Sinmyo is now developing a new resistive heating technique for use in diamond anvil cells that will, hopefully, guarantee homogeneous and stable heating.

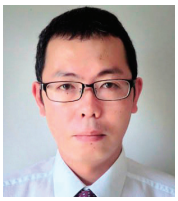
JAMS Award for Applied Mineralogy: Kazuya Morimoto

Kazuya Morimoto

Kazuya Morimoto is a researcher at the Geological Survey of Japan and the National Institute of Advanced Industrial Science and Technology (AIST) in Tsukuba. He obtained his PhD from Hokkaido University (Japan) under the supervision of Professor Tsutomu Sato. Morimoto has studied the functionality of layered hydroxide minerals, such as brucite and hydrotalcite-like compounds, in order to utilize these minerals as adsorbents and environmentally friendly materials. He has evaluated the adsorption mechanisms of anions on positively charged hydrotalcite surfaces by zeta potential measurements. His experimental work has revealed that oxyanions with low ionic potential (such as arsenate and phosphate) have a tendency to form inner-sphere complexes with hydrotalcite surfaces, causing the solubility of hydrotalcite to be reduced. He has also investigated the photodegradation properties of anionic dyes by Zn-substituted hydrotalcite-like compounds and reported that the presence of Zn-substituted hydrotalcite certainly accelerates degradation reactions of dyes under ultraviolet irradiation. In addition, he has investigated the expansion properties of brucite by using sugar alcohols (xylitol and *D*-sorbitol) through melt intercalation processes. The results suggest that organic–brucite hybrids could be utilized as a biocompatible material for medical applications. Morimoto's research findings have contributed to applications of minerals composed of ubiquitous elements as functional materials.

JAMS Research Paper Award: Yasuhito Osanai, Nobuhiko Nakano, Ippei Kitano, and Tatsuro Adachi

Yasuhito Osanai



Nobuhiko Nakano

Ippei Kitano

Tatsuro Adachi

The above-named awardees of Yasuhito Osanai, Nobuhiko Nakano, Ippei Kitano and Tatsuro Adachi were co-authors, along with others, on the following two papers:

UHT granulites of the Highland Complex, Sri Lanka I: Geological and petrological background. *Journal of Mineralogical and Petrological Sciences* (2016), vol. 111, pp 145-156

UHT granulites of the Highland Complex, Sri Lanka II: Geochronological constraints and implications for Gondwana correlation. *Journal of Mineralogical and Petrological Sciences* (2016) vol. 111, pp 157-169

Société Française de Minéralogie et de Cristallographie

www.sfmc-fr.org

FIELD TRIP TO THE FRENCH MASSIF CENTRAL

The SFMC organized a five-day field trip (22–26 June 2018) to investigate the Variscan geology of the Eastern French Massif Central. Twenty-five participants from six countries enjoyed sunny weather, good food, a relaxed and friendly atmosphere, and excellent outcrops. Topics of geological interest that were discussed included orogenic evolution, partial melting processes, and the sometimes-contradictory records of crustal evolution and differentiation (isotopic versus petrologic archives). The next SFMC field trip will be to Groix Island (Morbihan, France), 28–29 March 2019, to investigate the mineralogy, metamorphism, and structural geology of the outstanding greenschist-to-blueschist-to-eclogite facies rocks of this Island.

Happy geologists at the end of the SFMC field trip in the French Massif Central. Photo: A. Villaros

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Original Articles

Compositional variation of olivine related to high-temperature serpentinization of peridotites: Evidence from the Oeyama ophiolite – Toshio NOZAKA

Structure of calcite-aqueous NaCl solution interfaces from ambient to elevated temperatures – Hiroshi SAKUMA, Henning O. SØRENSEN, Jun KAWANO, Nicolas BOVET, Keisuke FUKUSHI, Naoki NISHIYAMA and Hironori NAKAO

Kannanite, a new mineral from Kannan Mountain, Japan – Daisuke NISHIO-HAMANE, Mariko NAGASHIMA, Nobuhiro OGAWA and Tetsuo MINAKAWA

Crystal chemistry of poppiite, V-analogue of pumpellyite, from the Komatsu mine, Saitama Prefecture, Japan – Mariko NAGASHIMA, Takashi MATSUMOTO, Takashi YAMADA, Minoru TAKIZAWA and Koichi MOMMA

Letters

Pressure-induced phase transitions of Zn_2SiO_4 III and IV studied using in-situ Raman spectroscopy – Masami KANZAKI

Evolution of permeability and fluid pathways in the uppermost oceanic crust inferred from experimental measurements on basalt cores – Kenta KAWAGUCHI and Ikuo KATAYAMA

RECRYSTALLIZATION AND GRAIN GROWTH

Recrystallization is the process that leads to the formation of new crystals by ductile fragmentation of the pre-existing crystals that comprise either a rock, a metal alloy, or an ice volume in a glacier without loss of continuity. It is also the main research topic of a multidisciplinary French research group (Groupement de Recherche, GDR) of the Centre National de la Recherche Scientifique (CNRS) entitled Recrystallization and Grain Growth. This group is coordinated by Maurine Montagnat (Institut des Géosciences de l'Environnment, Grenoble, France), Andréa Tommasi (Géosciences Montpellier), Romain Quey (École des Mines de St. Étienne, France), and Nathalie Bozzolo (MINES ParisTech, Paris, France). The Recrystallization and Grain Growth group brings together more than 14 CNRS and CEA (Commissariat à l'Énergie Atomique) research teams and 5 industrial partners.

The participants of the Recrystallization Thematic School in the Villa Clythia in Fréjus (France)

Recrystallization and grain growth processes drastically alter the textures and microstructures of the rocks in the constantly deforming mantle of the Earth, in the deeper levels of the crust, in ice during glacier flow, and in metals during shaping or production conditions. In natural systems, recrystallization processes are usually governed by the temperature and strain-rate conditions that operate both during and after deformation. However, these processes can be controlled and used as a tool to change the properties of materials in materials engineering. The GDR Recrystallization and Crystal Growth group has been active since 2006. For 2017–2020, the group has a mission to better organise the community of French researchers who are working on different aspects of recrystallization by setting up collaborations between theoreticians, modelers, and experimentalists who have either academic or industrial backgrounds. The aim is to bridge fundamental and applied research and to ensure the transfer of the most recent results in the field of recrystallization to young researchers and to the industrial sector, favouring the emergence of collaborative projects. The group also carries out training activities such as the workshop called the Recrystallization Thematic School, which was held 24–28 September 2018 in Fréjus, South of France (https://gdr-rex2018.sciencesconf.org/).

Check out the forthcoming 7th International Conference on Recrystallization and Grain Growth, to be held 4–9 August 2019 in Ghent (Belgium) (http://www.rexgg2019.org/ehome/index.php?eventid=295177&).