



# 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 its 2013 society awards. The **Japan Association of Mineralogical Sciences Award for Young Scientist** is awarded to a maximum of two scientists per year who are under 37 years of age and have made exceptional contributions to the mineralogical and related sciences. The **Japan Association of Mineralogical Sciences Award for Applied Mineralogy** is awarded to one scientist who has made remarkable contributions to the field of applied mineralogy. The **Sakurai Medal**—named in honor of Dr. Kin-ichi Sakurai, famous for finding new minerals—is awarded to one scientist who has made great contributions to studies on new minerals. The **Japan Association of Mineralogical Sciences Research Paper Award** is awarded to the authors of two excellent publications in the *Journal of Mineralogical and Petrological Sciences (JMPS)* and *Ganseki-Kobutsu-Kagaku (GKK)* that were published in the previous three years. Congratulations to the awardees!

### JAMS Award for Young Scientist to Masaaki Miyahara and Atsushi Okamoto



Masaaki Miyahara

**Masaaki Miyahara** is an associate professor in the Department of Earth and Planetary Systems Science, Graduate School of Science, Hiroshima University, Hiroshima, Japan. He received his PhD from Hiroshima University under the supervision of Professor Ryuji Kitagawa. Miyahara has studied high-pressure polymorphs in shocked meteorites using a transmission electron microscope. He discovered a unique coexistence of wadsleyite and ringwoodite, replacing an original olivine in shocked ordinary chondrites. Given the large compositional gap between wadsleyite and ringwoodite (up to 32 mol% as the fayalite component), he proposed that the wadsleyite and ringwoodite formed through fractional crystallization from an olivine melt induced by a dynamic event. Olivine was believed to dissociate into silicate-perovskite and magnesio-wüstite under pressure and temperature conditions corresponding to around and below the transition zone of the Earth. However, no evidence had been found in natural samples. Dr. Miyahara found, for the first time, the natural evidence of an olivine dissociation reaction in a shocked Martian meteorite. He also discovered a high-pressure polymorph of silica, seifertite ( $\alpha$ - $\text{PbO}_2$  type), in a shocked lunar meteorite. He proposed that intense meteoroid collisions might have continued on the Moon until approximately 2.7 billion years ago, even after the late heavy meteorite bombardment.



Atsushi Okamoto

**Atsushi Okamoto** is an associate professor at the Graduate School of Environmental Studies, Tohoku University, Sendai, Japan. He obtained his PhD from the University of Tokyo under the supervision of Professor Mitsuhiro Toriumi. Okamoto has studied many aspects of water-rock interaction within the Earth's crust using analyses of metamorphic rocks and hydrothermal experiments. One of his notable research contributions is the petrologic analysis of amphibole zoning, in which he developed a method to obtain a continuous  $P$ - $T$  path from amphibole and evaluated progressive hydration of mafic schists during exhumation of the Sanbagawa belt. Based on hydrothermal experiments, he evaluated the kinetics of coupled hydration reactions of olivine and orthopyroxene,

documenting the importance of silica transport. He examined the systematics of vein textures in the Sanbagawa belt and estimated fluid flow rates in veins by applying a model of coupled crystallization and crystal settling. Dr. Okamoto also succeeded in growing quartz veins in supercritical water. This work provides new information on the roles of fluid compositions and fluid flow rates in the development of internal textures during vein growth. He is expanding his research on silica-water interaction to explore hydrological systems within the crust of subduction-related island arcs.

### JAMS Award for Applied Mineralogy to Masao Kimura



Masao Kimura

**Masao Kimura** has worked for Nippon Steel (26 years) and Nippon Steel & Sumitomo Metal (1 year) corporations in Japan in the Advanced Technology Research Laboratories. He has developed in situ and dynamic observation techniques, mainly using synchrotron radiation, to reveal reaction mechanisms in various systems and processes, such as

the atmospheric corrosion of steel, liquid sintering in iron-making processes, Pd/Sr-Fe-O perovskite catalysts for automotive emission control, and crystal growth of Ba-Y-Cu oxide superconductors. His unique approaches in terms of mineralogy and crystallography have succeeded in revealing the key phenomena of the reactions and contributed to the optimization of the processes and the development of new materials. This is an excellent example of how we can make the best use of a fundamental and scientific approach for the benefit of industry and society. He has been appointed professor at the Photon Factory, Institute of Materials Structure Science, High Energy Accelerator Research Organization, in Tsukuba, Japan. He is trying to develop techniques for in situ and dynamic observation and is carrying out research in various materials, such as metal and oxides, in terms of structural heterogeneity at various scales (nanometer to meter).

### Sakurai Medal to Toshiro Nagase



Toshiro Nagase

The Sakurai Medal was presented to **Toshiro Nagase**, an associate professor at the Tohoku University Museum, Tohoku University, Sendai, Japan. Nagase has contributed significantly to the field of descriptive mineralogy through his investigations of new minerals using transmission electron microscopy (TEM). He obtained his PhD from Tohoku University, where he studied the origins of metastable phases of silica and ZnS minerals. He and his coworkers discovered a new Li analogue of serandite,

$\text{LiMn}_2\text{Si}_3\text{O}_8(\text{OH})$ , from the Tanohata Mine, Iwate Prefecture, Japan. In 2007, data on the mineral and the name tanohataite were approved by the IMA Commission on New Minerals, Nomenclature, and Classification (#2007-019). Tanohataite was found in a metamorphosed manganese ore deposit of the No. 3 (Matsumaezawa) Ore Body, which is composed mainly of rhodonite, rhodochrosite, braunite, and tephroite and includes lens-like veinlets with concentrations of alkali amphiboles. Various new lithium- and vanadium-bearing minerals, such as kôzulite, suzukiite, natronambulite, potassicleakeite, and watatsumiite, are found in the No. 3 Ore Body. Tanohataite occurs as an aggregation of fibrous crystals with quartz in the veinlets. Individual crystals exhibit an acicular shape a few micrometers in width and less than 1 mm in length. The crystal is transparent and pinkish white in color, with a

vitreous and silky luster. Further, Nagase and his coworkers also discovered shimazakiite (IMA CNMNC #2010-085a), a new calcium borate mineral from the Fuka area, Okayama Prefecture, Japan. His TEM technique has greatly contributed to the descriptions of submicron-scale minerals.

### Japan Association of Mineralogical Sciences Research Paper Award

TAKASHI YUGUCHI AND TADAO NISHIYAMA (2011) Three-dimensional cooling pattern of a granitic pluton I: The study of exsolution sub-solidus reactions in the Toki granite, Central Japan. *Journal of Mineralogical and Petrological Sciences* 106: 61-78



Takashi Yuguchi



Tadao Nishiyama

TAKASHI YUGUCHI AND TADAO NISHIYAMA (2011) Three-dimensional cooling pattern of a granitic pluton II: The study of deuteric sub-solidus reactions in the Toki granite, Central Japan. *Journal of Mineralogical and Petrological Sciences* 106: 130-141

### JOURNAL OF MINERALOGICAL AND PETROLOGICAL SCIENCES

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#### ORIGINAL ARTICLES

**Anisotropic garnet from the Yamansu ore deposit, Xinjiang, China** Shoichi KOBAYASHI, Ritsuro MIYAWAKI, Koichi MOMMA, Akiko FUJISAWA, and Hiroaki KANEDA

**Metamorphic pressure-temperature evolution of garnet-chloritoid schists from the Lake Zone, SW Mongolia** Otgonkhoo JAVKHLAN, Akira TAKASU, Dash BAT-ULZII, and Md. Fazle KABIR

**Structural change of alkali feldspar by ball milling** Hiromi NOJIRI, Masayuki OKUNO, Hiroki OKUDERA, Tomoyuki MIZUKAMI, and Shoji ARAI

**EBSD study of quartz c-axis orientations in the silicified host rocks of the Kasuga gold deposit, Southwest Japan** Tayyaba MATEEN, Hafiz Ur REHMAN, and Hiroshi YAMAMOTO

**Local structure of iron in tektites and natural glass: An insight through X-ray absorption fine structure spectroscopy** Ling WANG, Akira YOSHIIASA, Maki OKUBE, Tatsuya HIRATOKO, Yuan HU, Hiroshi ARIMA, and Kazumasa SUGIYAMA

#### LETTERS

**Compression behavior of manganite** Akio SUZUKI

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## Abstracts Open!

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- Environmental Mineralogy / Geochemistry
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