



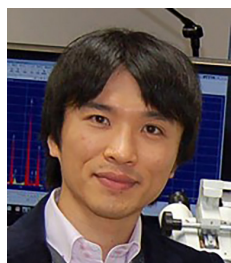
# Japan Association of Mineralogical Sciences

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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 2017 society awards. The **Japan Association of Mineralogical Sciences Award** is conferred each year to a maximum of two scientists for their exceptional contributions to the mineralogical and related sciences. The **Manjiro Watanabe Award**, named in honour of Professor Manjiro Watanabe, a famous Japanese mineralogist, and founded by his bequest, is awarded every year to a scientist who has significantly contributed to the mineralogical and related sciences over his or her long career.

### Japan Association of Mineralogical Sciences Award: Hiroaki Ohfuji



**Hiroaki Ohfuji** of the Geodynamics Research Center at Ehime University (Japan) is a mineralogist who uses electron microscopy to help understand the crystallization and self-organization mechanism of minerals at the nano- and micrometre scales. His first research project was the study of the structure and formation process of framboidal pyrite, a raspberry-like aggregate of pyrite microcrystals, under the supervision of Prof. Junki Akai (at Niigata University) and Prof. David Rickard

(at Cardiff University, UK). Through detailed scanning electron microscopy and electron backscatter diffraction analysis, he revealed the 3-D packing structure of the microcrystals in framboidal pyrite and discovered their unique "icosahedral packing." After he started his career at Ehime University, he expanded his interest to the study of the crystallization and texturing processes that occur during chemical reactions and phase transitions of various synthetic minerals/materials. One of his major achievements is the elucidation of the texturing mechanism of ultrahard nano-polycrystalline diamond (NPD), which is synthesized by direct conversion of graphite under high pressure and high temperature. This led to the microtexture control of NPD to further strengthen its hardness and mechanical properties and to create new varieties, such as layered NPD. Furthermore, he has recently identified a natural counterpart of NPD in the diamonds produced by the large meteoritic impact in the Popigai crater (Russia). He is currently working on the origin of mantle diamonds, including polycrystalline varieties such as ballas and carbonado, and on volatile recycling in subduction zones.

### Japan Association of Mineralogical Sciences Award: Tatsuhiko Kawamoto



**Tatsuhiko Kawamoto** of the Institute for Geothermal Sciences at Kyoto University (Japan) studies the behaviour of hydrous magmas and aqueous fluids. He started his research as a petrology student supervised by Shohei Banno and Yoshiyuki Tatsumi at Kyoto University. He described every phenocryst in a single thin section in an attempt to explain enigmatic plagioclase morphologies. He began conducting high-pressure and high-temperature (HPHT) experiments as a postdoc at the

Ikuo Kushiro's lab at the University of Tokyo, where he conducted partial-melting experiments of hydrous mantle peridotite with Kei Hirose and duplicated andesite-dacite-rhyolite magmas by crystal fractionation of a hydrous arc basalt. He then joined the Depths of the Earth led by John Holloway of Arizona State University (USA), and became the first Japanese person to learn how to use the multi-anvil-

type HPHT apparatus in the United States. He proposed a choke point for subducting hydrous minerals, a hydrous mantle transition, and a method by which to generate komatiite and kimberlite magmas. He then went on to learn the Bassett-type diamond anvil cell from H el ene Bureau, Nikolay Zotov, and Hans Keppler at the Bayerisches Geoinstitut (Germany), after which he moved back to Kyoto University. With Kenji Mibe, Masami Kanzaki, Shigeaki Ono, and Kyoko Matsukage, he identified the critical end-points between various magmas and aqueous fluids by using X-ray radiography, and suggested new hypothesis for subduction zone magmatism. He has found seawater-like saline fluid inclusions in mantle xenoliths beneath Mount Pinatubo (Philippines) and other volcanoes, proposing the importance of being salty in subduction zone fluids.

### Manjiro Watanabe 2017 Award: Kichiro Koto



**Kichiro Koto** was appointed to an academic position at the Institute of Scientific and Industrial Research, Osaka University (Japan), in 1963 when he was still a graduate student at the University of Tokyo (Japan). He received a doctor of science degree in 1969 from the University of Tokyo with his thesis, "Description, Stability, and Crystal Structure of Anilite  $\text{Cu}_7\text{S}_4$ , a New Mineral." He then focused on mineral crystallography using X-ray diffraction and X-ray absorption fine

structure (XAFS) spectroscopy. He studied the crystal structures, phase relations, and transition mechanisms of natural and synthetic silicates and oxides. He also studied iron and copper sulfides (e.g. pyrrhotite, digenite, and bornite) and successfully analyzed incommensurate superstructures with nonstoichiometric composition. From 1977 to 1979, he worked with Prof. H. Schulz at the Max-Planck-Institut f ur Festk orperforschung (Stuttgart, Germany) as a "guest-scientist." During this time, he studied the superionic conductors of silver iodide and lead fluoride. The crystallographic investigation of ion motion, based on precise electron density distributions in situ, and especially at high temperatures, provided important information on the diffusion path and mechanism of ions in solids. He also studied the various superionic conductors of spinel-, fluorite- and perovskite-type structures. And he studied physically important substances, such as ferroelectric compounds, with colleagues from other scientific fields. From 1984 to 1985, he oversaw the project "Microstructures and Thermal-Pressure Hysteresis of Minerals." He continued his crystallographic studies on minerals and superionic conductors after moving to Tokushima University in 1988.

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### Original Articles

XAFS study on the location of Cu and Mn in a greenish blue elbaite from Alto dos Quntos mine, Brazil – Kazumasa SUGIYAMA, Hiroshi ARIMA, Hayato KONNO and Takashi MIKOUCHI

Pinkish colored epidotes found in a geothermal exploration well NB-1, Noboribetsu, Hokkaido – Atsuyuki INOUE and Minoru UTADA

Kurchatovite from the Fuka mine, Okayama Prefecture, Japan – Ayaka HAYASHI, Koichi MOMMA, Ritsuro MIYAWAKI, Mitsuo TANABE, Shigetomo KISHI, Shoichi KOBAYASHI and Isao KUSACHI

Ilvaite–manganilvaite series minerals in jasper and iron–manganese ore from the Northern Chichibu belt, central Shikoku, Japan – Shunsuke ENDO

Uncertainty in pressure difference of empirical geobarometers –Takeshi IKEDA, Kazuhiro MIYAZAKI and Hirohisa MATSUURA