



Japan Association of Mineralogical Sciences

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The Japan Association of Mineralogical Sciences (JAMS) is proud to announce the recipients of its 2021 society awards. The **Japan Association of Mineralogical Sciences Award** is presented to a maximum of two scientists in any one year for exceptional contributions to mineralogy and related sciences. The **Manjiro Watanabe Award**—named in honor of Professor Manjiro Watanabe, a famous Japanese mineralogist, and founded by his bequest—is awarded every year to one scientist who has significantly contributed to mineralogical and related sciences over his or her career. [All locations below are in Japan unless otherwise stated.]

JAPAN ASSOCIATION OF MINERALOGICAL SCIENCES AWARD TO TAKASHI MIKOUCHI



Takashi Mikouchi is a professor at the University Museum of the University of Tokyo. He specializes in the mineralogy and crystallography of extraterrestrial materials, especially differentiated meteorites and spacecraft-returned samples. He began his academic career by studying meteorites at the University of Tokyo, researching Angrites (one of the oldest known achondrites) in collaboration with

researchers at NASA's Lyndon B. Johnson Space Center (Texas, USA), and soon became involved in the study of Martian meteorites. Since

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Tao Luo was made an associate professor at the China University of Geosciences in Wuhan after receiving his PhD degree. He investigates elemental and isotopic fractionation by using laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS), and he develops novel non-matrix-matched methods for U–Th–Pb dating of accessory minerals.

Tao started to work in geoanalytical research during his master's degree and was responsible for running an LA-ICP-MS laboratory as a student-assistant. He investigated ICP-induced fractionation behaviours in LA-ICP-MS machines and evaluated the influence of argon and helium carrier gases on signal intensities and elemental fractionation in analysis by both nanosecond and femtosecond LA-ICP-MS. In addition, Tao has developed a novel, water vapour-assisted method for non-matrix-matched determinations of U–Th–Pb ages in accessory minerals (Luo et al. 2020). This method greatly broadened the application of in situ U–Th–Pb geochronology to diverse accessory minerals without the strict requirement of matrix-matched reference materials (Luo et al. 2018). He applied this water vapour-assisted method to develop a new in situ LA-ICP-MS method by which to date wolframite by the U–Pb method. This then solved a very challenging question concerning the timing and duration of hydrothermal W mineralisation.

Currently, he is working on the development of new reference materials for microbeam analysis of U–Pb geochronology and Hf–O isotopes. When not working in the lab, Tao enjoys hiking and cycling.

Luo T and 7 coauthors (2018) Water vapor-assisted “universal” nonmatrix-matched analytical method for the in situ U–Pb dating of zircon, monazite, titanite, and xenotime by laser ablation-inductively coupled plasma mass spectrometry. *Analytical Chemistry* 90: 9016–9024, doi: 10.1021/acs.analchem.8b01231

Luo T and 8 coauthors (2020) Non-matrix-matched determination of Th–Pb ages in zircon, monazite and xenotime by laser ablation-inductively coupled plasma mass spectrometry. *Geostandards and Geoanalytical Research* 44: 653–668, doi: 10.1111/ggr.12356

then, he has collaborated with researchers from Japan, the USA, and Europe, and he combines isotopic and chemical data with his mineralogical and crystallographic work for various extraterrestrial materials. In his early work, Takashi Mikouchi used crystallization experimental results to deduce that some shergottite Martian meteorites had experienced magma undercooling and that they represented parent magma compositions. He also revealed that nakhlite Martian meteorites had a petrography and mineralogy that could be explained by crystallization at different burial depths in a common cooling cumulate pile. His study of Angrites pointed out the importance of olivine xenocrysts in quenched Angrites and showed that bulk compositions of quenched Angrites were controlled by resorption degrees of these xenocrysts. He is one of the first meteoriticists to apply electron backscatter diffraction (EBSD) analysis to characterize new minerals in meteorites, and he and his coworkers found several new minerals by this technique, such as dmitryivanovite, andreyivanovite, and kushiroite. He has been also involved in studying particles from comet Wild 2 and particles from the Itokawa asteroid, strengthening the interpretations of the origins of these bodies by using electron beam and synchrotron radiation analyses. At present, as a preliminary analysis team member, he is analyzing Ryugu samples returned by the *Hayabusa2* spacecraft.

Takashi Mikouchi has, thus, made many major contributions to our understanding of the formation processes and evolution of solid materials in the early Solar System, as well as in large bodies such as Mars and the Moon.

JAPAN ASSOCIATION OF MINERALOGICAL SCIENCES AWARD TO TATSUKI TSUJIMORI



Tatsuki Tsujimori is a professor of geological sciences at Tohoku University's Center for Northeast Asian Studies. His PhD was supervised by Prof. Akira Ishiwatari at Kanazawa University and was awarded in 1999. He then completed post-doc fellowships at Okayama University of Science (2000–2002) and Stanford University (California, USA) (2002–2006). From 2006 to 2015, he was a faculty member of Okayama

University at Misasa and has been a Tohoku University faculty member since 2015. Prof. Tsujimori's research specialties are in the fields of petrology and tectonic processes, with a particular emphasis on high-pressure–ultra-high-pressure (HP–UHP) metamorphic rocks, such as blueschists, eclogites, and jadeitites. His early research focused on the petrotectonic characterization of the Japanese Paleozoic serpentinite-matrix mélanges that enclose blocks of various HP metamorphic/metasomatic rocks. As a part of this research, he reconstructed the fossilized mantle wedge–slab interface that contained blueschist, jadeite, and a newly discovered eclogite. Since joining Tohoku University, his research program has focused on better understanding the geodynamic and geochemical processes of Proterozoic and Phanerozoic active convergence margins at different scales as deduced from mineral equilibrium up to plate tectonic levels. Additionally, his work seeks to link the HP–UHP metamorphism of ancient subduction zones to geophysical observations of modern analogs by evaluating hydration and dehydration from within the subduction interface and the subsequent slab–mantle interactions.

Prof. Tsujimori has an extensive record of research in metamorphic petrology, geochemistry, and tectonics, including collaborative research projects with local (Japanese) and overseas researchers, such as Tetsumaru Itaya, J.G. Liou, Gary Ernst, Ruth Zhang, George Harlow, Sorena Sorensen, Jinny Sisson, Bob Stern, and the late Bob Coleman. Also, as a faculty member of Okayama University's International

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Joint Usage/Research Center, he was involved in numerous scientific research exchanges and academic cooperation programs that included many visiting overseas scholars and student intern participants. Prof. Tsujimori was named a 2013 Mineralogical Society of America Fellow and a 2014 Geological Society of America Fellow as a result of his valuable contributions to the field metamorphic petrology. His ongoing research into lawsonite eclogites and jadeitites has had a significant influence on the geoscience community. Most notably, his research has led, in part, to the designation by JAMS of jadeitite as the national stone of Japan. Currently, Prof. Tsujimori is the Editor-in-Chief of the journal *Island Arc* and sits on the editorial boards of several scientific journals.

MANJIRO WATANABE AWARD TO TADATO MIZOTA



Tadato Mizota received his doctor of science degree in 1977 from Tohoku University; his thesis title was, "The Transformation of Cubanite". The research theme of cubanite (CuFe_2S_3) had been first suggested by Prof. Nobuo Morimoto while Mizota was at Osaka University, but the research was only completed when Mizota became a lecturer at Yamaguchi University, being supervised there by Prof. Ichiro Sunagawa of Tohoku University.

His research interests cover three categories. The first is of the X-ray crystal structure analysis of minerals. He, along with Dr. Masayuki Komatsu and Prof. Kazuya Chihara, found the new mineral ohmilite at Ohmi (Niigata Prefecture, Japan) and they determined and refined the crystal structure by means of X-ray diffraction. The second area of research is the calorimetry of minerals. Mizota made an original adiabatic calorimeter for measuring heat capacity at temperatures from room temperature to 600 °C. The heat capacity associated with a thermal anomaly around the irreversible phase transition of cubanite was thereby clarified. The third interest is in developing an adiabatic hydration calorimeter and a zeolite heat-pump. So-called zeolitic water is generally considered to be in an energetic state, analogous to the states between free water and ice. Mizota developed an adiabatic hydration calorimeter and clarified that the entropy values of zeolitic water are extremely low compared to such values of water at temperatures near 0 K. He applied this phenomena to develop a "zeolite heat-pump" and succeeded in making ice by using heat sources in the temperature range between 25 °C and 100 °C.

After retiring, he has been working as a volunteer member in three organizations: the Ube Network for Climate Change Actions; the non-profit company Civic Cooperate Power-Generation Ube; and the Ube Boys and Girls Invention Club.

JOURNAL OF MINERALOGICAL AND PETROLOGICAL SCIENCES

Volume 116, Number 4, August 2021

Original Articles

Crystal structure refinement and crystal chemistry of parasymplesite and vivianite – Hidetomo HONGU, Akira YOSHIASA, Ginga KITAHARA, Yumiko MIYANO, Karin HAN, Koichi MOMMA, Ritsuro MIYAWAKI, Makoto TOKUDA, Kazumasa SUGIYAMA

SiO₄ network structure changes and crystallization of diatom shells in diatomaceous earth by heat treatment – Naoya SASAKI, Akane ARASUNA, Masayuki OKUNO

Synthesis of transparent polycrystalline jadeite under high pressure and temperature – Keisuke MITSU, Tetsuo IRIFUNE, Hiroaki OHFUJI, Akihiro YAMADA

Study on magnetite oxidation using synchrotron X-ray diffraction and X-ray absorption spectroscopy: vacancy ordering transition in maghemite ($\gamma\text{-Fe}_2\text{O}_3$) – Ibuki KINEBUCHI, Atsushi KYONO

U–Pb geochronology, REE and trace element geochemistry of zircon from El Fereyid monzogranite, south Eastern Desert, Egypt – Sergey G. SKUBLOV, Ahmed E. ABDEL GAWAD, Ekaterina V. LEVASHOVA, Mohamed M. GHONEIM

A WARM WELCOME TO OUR NEW COUNCIL MEMBERS

Treasurer

The Mineralogical Association of Canada (MAC) Executive has approved the nomination of the following candidate for the treasurer position. As no additional nominations were received from the membership, the nominated candidate was declared elected by acclamation.

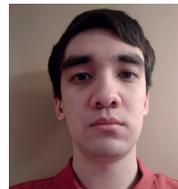


Mr. Rémy Poulin (LabMaTer at l'Université du Québec à Chicoutimi)

Rémy is currently the laboratory manager of LabMaTer at the Université du Québec à Chicoutimi (Canada). He obtained his BSc with Honours in geology from the University of Ottawa (Canada), followed by an Earth sciences MSc from Laurentian University (2016) in the field of applied mineralogy. From 2017 to 2021, he was a sessional lecturer and research scientist at the Harquail School of Earth Sciences (Laurentian University, Canada) where he taught mineralogy, geochemistry, and supervised undergraduate theses. Mr. Poulin is an applied mineralogist and has been involved in numerous projects, focusing on the development of analytical methods (trace elements, cathodoluminescence) and the application of mineral chemistry to investigate complex geologic processes in a wide variety of earth systems. Recently, Mr. Poulin has published a series of articles in *The Canadian Mineralogist* and was the recipient of the 2018 Hawley Medal for his work on scheelite ("Assessing scheelite as an ore-deposit discriminator using its trace-element and REE chemistry"). In addition, Mr. Poulin is an active member of the geological community and has been a reviewer of many submissions to various journals (e.g., *Ore-Geology Reviews*, *American Mineralogist*, and *Geochemistry: Exploration, Environment, Analysis*). Within the MAC framework, he has been the Financial Chair (2018–2020), is the Chair of the Student Travel Grants and Awards, and is Chair of the MAC Scholarship Committee. He has also served as a member on various other committees, including those for the Hawley Medal, Berry Medal, and Pinch Medal.

Financial Chair

The MAC Executive appointed the following candidate for the position of Financial Chair.



Mr. David McDonald (Canada Revenue Agency)

David is currently an Assessments, Accounts and Benefits Processing Officer with the Canada Revenue Agency. He graduated Cum Laude with a BA in economics from Laurentian University in 2019. His specialisation was applied economic theory, culminating in an undergraduate thesis under the supervision of Dr. David Leadbeater. This work, entitled "Examination of Employee and Salary Structures at Laurentian University: A Case Study Regarding the Rise of Corporate Managerialism in Ontario Public Universities" examined salary stratification between administration and faculty, as well as the negative effects of inflation and other systemic issues regarding faculty salaries, workloads, and remuneration systems. He began his work as a tax officer in 2017, where he analysed, verified, and processed reassessments related to the T1 general return. After becoming a senior processing officer for complex cases in late 2017, he specialised in bankruptcies, foreign tax treaties, complex capital gains, as well as separation/divorce agreements. With an exhaustive knowledge of the Income Tax Act, as well as federal and provincial tax legislation, he opened a financial services company, with a focus on retirement planning and targeted investment strategies for middle-class individuals. He then accepted a position as the Collection Support Unit Manager for the Central Region on behalf of Statistics Canada's 2021 Census. As the Collection Support Unit Manager, he managed