



International Mineralogical Association

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2023 MEDAL OF EXCELLENCE IN MINERALOGICAL SCIENCES TO PROFESSOR TETSUO IRIFUNE

The IMA is honored to present its 2023 Medal of Excellence in Mineralogical Sciences to Prof. Tetsuo Irifune. Distinguished Professor at Ehime University in Japan, Prof. Irifune is Director of the Geodynamics Research Center (GRC) at the same University, as well as Principal Investigator of the Earth-Life Science Institute (ELSI) of Tokyo Institute of Technology, Japan.

As a major contributor to the development of high-pressure techniques and their applications to Earth sciences and materials science, Prof. Irifune has reached the highest level of scientific excellence and eminence within the international mineral physics community. He has set new standards in the performance of high-pressure experiments with applications to deep-Earth processes, and to materials science. His outstanding contributions to the mineral sciences have had a profound impact on high-pressure mineralogy, as attested by his tremendous publication list.

Prof. Irifune completed his BSc and MSc studies at Kyoto University, Japan (1978) and Nagoya University, Japan (1980), respectively, and earned his PhD from Hokkaido University, Japan (1984). After a Postdoctoral Fellowship at the Japan Society of Promotion of Science (1984) and at the Research School of Earth Sciences, Australian National University (1984–1987), Prof. Irifune joined the Department of Geological Mineralogy of Hokkaido University, Japan, as an assistant professor (1987–1989) and later at Ehime University, where he worked as an associate professor (1989–1995), professor (1995–2001), professor and director of the GRC (since 2001), and distinguished professor (since 2012).

Throughout his career, Prof. Irifune's research has spanned over a wide range of research fields, from the study of the phase relations of mantle rocks by the quench method, to the determination of phase transitions using in-situ X-ray diffraction, sound velocity measurement of mantle minerals in their stability fields, and synthesis of nano-polycrystalline diamond and ceramics. Among his many scientific achievements are the exquisite experimental determination of phase relations involving ringwoodite, majorite, davemaoite, and bridgmanite; and the seismic sharpness of the upper-lower mantle boundary. Prof. Irifune has also developed multi-anvil facilities, including multi-anvil synchrotron beamlines, for the synthesis of ultra-hard materials and the deformation of transition-zone minerals. He is recognized for his contribution to the coordination of high-pressure mineralogy research in East Asia, and for helping colleagues around the world to set up multi-anvil laboratories.

Prof. Irifune has also demonstrated high dedication and commitment to serve the scientific community by sitting on several committees, commissions, and boards; as well as his excellent leadership capabilities, which brought him to conceive and establish the *Geodynamics Research Center*, which he has brilliantly coordinated for over two decades, making it an undisputed reference center not only for the high-pressure experimental petrology, but also for related fields, like mineral physics and geodynamics. He also founded The Asian Network for Deep Earth Mineralogy (<http://www.grc.ehime-u.ac.jp/legacy/gcoe-shinpo1-tandemgaiyou-h20.pdf>), and served as the President of International Association for the Advancement of High Pressure Science and Technology (AIRAPT).

Prof. Irifune's high international reputation has been recognized through many prestigious honors and awards, including the Mineralogical Society of Japan (MSJ) Award, 1998; Ishikawa Carbon



Prize, 2004; Alexander von Humboldt Research Award, 2007; Fellow of American Geophysical Union (AGU), 2008; Japan Society of Powder and Powder Metallurgy, Innovatory Research Award, 2008; Japan Society of High Pressure Science and Technology (JSHPT) Award, 2009; Geological Society of Australia (GSA), A. E. Ringwood Medal, 2014; Medal with Purple Ribbon, Government of Japan, 2015; European Geoscience Union (EGU) R. W. Bunsen Medal, 2016; Fellow of Japan Geoscience Union (JpGU), 2017; Japan Association of Mineralogical Sciences (JAMS), Applied Mineralogy Award, 2020; International Association for the Advancement of High Pressure Science and Technology (AIRAPT), P. W. Bridgman Award, 2021.

We heartily congratulate Prof. Irifune on this prestigious award. Prof. Irifune represents today's international mineralogy at its best, both as a scientist and a citizen of the community. He continues to be an active and creative scientist, and we look forward to his new discoveries and achievements.

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