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Obituary for professor Shunso Ishihara (1935-2020)

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The geological scientific community of the world has suffered a great loss. The well-known scientist and brilliant organizer of science, Prof. Shunso Ishihara passed away on 2 March 2020. He was born in Hiroshima in 1935. In 1956, he graduated from the Department of Geology and Mineralogy at the Hiroshima University and was employed by the Geological Survey of Japan. In 1960-1963, he studied at the Colorado School of Mines and the Columbia University in the United States of America, and was awarded a Master's degree from the Columbia University in 1963. In 1970 he received PhD degree from the University of Tokyo. In 1985, Dr. Ishihara was appointed as Director of the Ore Deposits Department of the Geological Survey of Japan. Long time he was Director General of the Agency of Industrial Science and Technology, responsible for the 16 research institutes of the Ministry of Trade and Industry, Japan. Later he was Professor of the Faculty of Science at Hokkaido University. He continued to work with Geological Survey of Japan as Advisor and, subsequently, Honorary Advisor to the National Institute of Advanced Industrial Science and Technology (AIST).

Professor Ishihara published a great number of scientific papers and the best-known work is subdivision of Japanese granitoids into magnetite-series, igneous, mantle or lowercrustal, and ilmenite-series, sedimentdominated, crustal origin (Ishihara, 1977). Later he correlated oxidation states of granitoids with petrochemical parameters. other Professor Ishihara recognized that the magnetite-series granitoids are related to porphyry Cu and Mo the ilmenite-series type. whereas are and W characterized bv Sn deposits (Ishihara, 1981). Distinction of these two fundamentally different granitoid types can be made using a portable magnetic susceptibility meter (Ishihara, 1979), a practical approach that is very useful during field work. Prof. Ishihara visited Mongolia and contributed to subdivision of granitoid rocks into magnetite and ilmeniteseries types that was very important for metallogeny of the Bayankhongor area where JICA carried out the mapping work at the scale of 1:50 000. The most recent work of Prof. Ishihara was related to alkali granites with REE mineralization. Professor Ishihara's research contributions have

been recognized by numerous awards, including the Kato Takeo Award of the Society of Mining Geologists of Japan (1984), Silver Medal of the Society of Economic Geologists (1989), Watanabe Manjiro Award of the Japan Association of Mineralogical Sciences (2002), SGA-Newmont Gold Medal of Society of Geology Applied to Mineral Deposits (2009), and Haddon Forrester King Medal of the Australian Academy of Science (2012). He also

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received the prestigious Order of the Sacred Treasure, Gold and Silver Star, awarded by the Emperor of Japan in 2005. To these honors may be added Honorary Fellowship/ Membership of the Chinese Academy of Science, Geological Society of America, Russian Academy of Sciences, Geological Society of Japan, Society of Economic Geologists, and Society of Resource Geology (2011).

Prof. Ishihara was a faithful friend to us, he always interested in geology of Mongolia especially granitoid rocks, and supported young Mongolian scientists. His image will forever remain in our grateful memory.

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