

The AONSA Prize 2017

The Selection Committee (SC) for the AONSA Prize 2017 received multiple nominees by the nomination deadline (August 31, 2016) and intensively reviewed them for a few months. The SC gladly recognizes that all nominees made significant contributions and highly qualified, reflecting the quality of neutron science in the Asia-Oceania region. Finally the SC unanimously nominated Professor Nobuo Niimura as a recipient to the 17th Executive Committee Meeting held in Mumbai, India on November 18, 2016 and the SC's nomination was officially approved. The recipient will be awarded a certificate, a medal and monetary prize (US\$5,000) at the Prize Ceremony to be held during the ICNS-2017 (July 9-13, 2017), Daejeon, Korea.



Nobuo Niimura

Specially Assigned Research Fellow Ibaraki University

Citation: “For his continuous contributions to the instrumental development and practical use of neutrons from Tohoku Linac, KENS, JRR-2 and 3 to J-PARC, especially the invention of the neutron imaging plate which opened a new paradigm in neutron protein crystallography all over the world including Asia-Oceania region, and for his devoted mentoring of young scientists in the community of neutron science.”

Nobuo Niimura received Ph.D from University of Tokyo in March 1970 and in December, became a Research Associate of Faculty of Science Tohoku University. In the Faculty, he first met Professors Motoharu

Kimura and Noboru Watanabe who initiated the construction of pulsed neutron source using an electron linear accelerator (Tohoku Linac). Nobuo also participated in the construction and in the utilization pulsed neutron beam for material science. (One of his pioneering works done in Tohoku University is a time-dependent pulsed neutron scattering study on ferroelectric material under high electric field.) In Tohoku University he accepted and grew many young scientists who later on played important roles for the construction and utilization of spallation neutron sources at KEK(KENS) and at J-PARC. Soon after he

became a Professor of Tohoku University, he moved to Japan Atomic Energy Research Institute (JAERI) in Tokai and became a Prime Scientist in 1998. After the retirement of JAERI he moved to Ibaraki University and became a Professor of Graduate School in 2003 and Special Research Professor in 2008, Specially Assigned Research Fellow in 2013. In Ibaraki University, he also grew many young scientists and played an important role for the establishment of the Frontier Research Center for Applied Atomic Sciences, which accepts undergraduate and graduate students who study neutron scattering technique using pulsed neutron beam in J-PARC.

Nobuo's most important and direct contribution to neutron science is the development of a neutron imaging plate (NIP) and the first practical use of NIP to neutron protein crystallography. He constructed NIP-equipped neutron diffractometers which evoked a great impact in the field of neutron protein crystallography. The high efficiency of NIPs as an area detector triggered further installation in various diffractometers in reactor-based neutron sources not only in the Asia-Oceania region (KOALA at OPAL and BioC at HANARO) but also in the world (LADI-III at ILL, BIODIFF at FRM-II and IMAGINE at HFIR).

During the construction of pulsed neutron source in J-PARC Nobuo also took his leadership for the construction of the spectrometer iBIX in J-PARC, which became

one of unique and important time-of-flight diffractometers for neutron protein crystallography in the Asia-Oceania region. By using these instruments Nobuo systematically studied the role of hydrogen, protons, and hydration in bio-macromolecules, which provides indispensable information to understand the function of bio-macromolecules.

For his seminal achievement in neutron science he received the following awards, Tsukuba Science Award (1996), Nikkei BP Award (1998), Prize of Radiation of Applied Physics Society of Japan (1998) and the first JSNS (Japanese Neutron Science Society) Science Prize (2003).

Kazuyoshi Yamada
Vice president of AONSA