In Memory of Hiroyuki Oyanagi

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Hiroyuki Oyanagi was born on 21st of October 1951 in Japan and passed away unexpectedly on 13th of March in 2019.

He started his studies in physics at the University of Tokyo where he received the B.Sc. in 1975, followed by the M.Sc. in 1977 and the Ph.D. in 1980. The thesis was on the “Local Structure of Chalcogenide Glasses,” a topic which he followed consistently through his research career where the emphasis was the detection of deviations from the average structure on a local scale.

After his Ph.D., he became a researcher at the Electrotechnical Laboratory (ETL) where he continued his career there until 2012 and advanced in this time period to a senior researcher at the Photonics Research Institute (AIST,

formerly ETL) in Tsukuba, a city 60 km north of Tokyo. He stayed in Tsukuba and became there a senior researcher at the IMMS, the High Energy Accelerator Research Organization (KEK).

The study of local structure was always in the focus of Hiroyuki’s research and began with investigations of conducting polymers, semiconductor alloys, and superlattices. He studied the spin-dependent local structure of myoglobin, revealing the high-resolution spin-dependent Fe near-edge structures caused by local distortions around the heme iron. Later on, he became engaged in developments of segmented x-ray detectors ranging from multiple-element solid-state detectors to the world’s first 100 Ge pixel array detector (PAD) which is now used at various SR facilities. Combining the segmented x-ray detector and the multipole wiggler (MPW) enables a resolution of submonolayer sensitivity which allows the in situ study on monolayers grown by molecular beam epitaxy (MBE). Hiroyuki found a further unconventional capability of PAD that facilitates measurements of polarization-

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dependent high-quality spectra for as-grown single crystals. This led to the discovery of temperature-dependent lattice anomalies in doped high-temperature superconductors (HTSC). The observation of local lattice distortions attracted keen attention worldwide as it casts doubts on the validity of purely electronic pairing mechanisms. In this context, Hiroyuki organized two international conferences to discuss the role of lattice effects in HTSC materials: Physics in Local Lattice Distortions, Tsukuba, July 23–26, 2000, and Lattice Effects in Cuprate High Temperature Superconductors, Tsukuba, Oct. 31–Nov. 3, 2007. For the latter event, Hiroyuki managed to engage K. Alex Müller, the Nobel Prize winner of 1987, to give an invited talk. Both conferences were perfectly organized and mirrored cordial hospitality which Hiroyuki offered to his international colleagues.

A further aspect of his work was on in situ x-ray spectroscopy where the local structure can be probed in excited states as well as intermediate ones. By means of this method, he was able to demonstrate that radiation-induced nanoclusters are stabilized by the compensation of unstable formal charge ions through charge transfer from outer ligands.

Throughout his scientific career, Hiroyuki's key aspect was on international collaboration where he proved to be not only a reliable partner but also a steady friend. He kept up contact to the people with whom he had interacted or still was cooperating and also established deep private friendships. He was a true friend who was absolutely reliable, trustworthy, and honorable!

His unexpected sudden death leaves us with deep mourning and sorrow. Our sympathy is with his wife Masako and his son.

Annette Bussmann-Holder, Germany; Hugo Keller, Switzerland; Naurang Saini, Italy; Jose Mustre de Leon, Mexico; Takeshi Egami, USA; Dragan Mihailovic, Slovenia; Alexander Shengelaya, Georgia; Steven Conradson, USA; Mauro Doria, Brazil; Juris Purans, Latvia; Sergei Ovchinnikov, Russia; Roman Puzniak, Poland; Roman Micnas, Poland

From the Editorial Board: We join the authors of the letter and express our grief and condolences. Hiroyuki Oyanagi was an outstanding scientist. We were very pleased that during many years he was a very active member of the board of our journal. He will be greatly missed.

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