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## XAFS studies at Photon Factory, KEK, and a faculty and student team visit

*Monday, 14 November 2022 15:30 (30 minutes)*

Photon Factory (PF) is a synchrotron radiation facility in KEK Tsukuba campus. We have two rings, PF and PF-AR (Advanced Ring). PF is operated with the beam energy of 2.5 GeV, and PF-AR 6.5 GeV, which provides higher energy regions. There are ~50 end stations including 6 x-ray absorption fine structure (XAFS) beamlines: 9A, 9C, 12C, 15A1, NW2A and NW10A.

XAFS is one of the most popular methods at synchrotrons and is applied to study a wide variety of fields such as catalysts, batteries, functional oxides, minerals and environmental samples. XAFS is divided into two regions, x-ray absorption near edge structure (XANES) and extended x-ray absorption fine structure (EXAFS). XANES is the region of the spectrum from just below the absorption edge to ~50 eV above the edge. EXAFS is the other higher energy region above XANES and analysed to determine local structures of elements of interest. A couple of XAFS studies performed at PF are shared.

In the latter part of my talk, I would like to share my story on the AfLS project. I have been involved in the AfLS project since 2015. In 2015, the first AfLS conference was held at ESRF, Grenoble, France. Dr. Francesco Sette, Director General of ESRF, gave impressive words in his welcome speech, "Science is Peace", and I made many friends. In 2017, we welcomed a faculty and student team from the Botswana International University of Science & Technology (BIUST). They stayed for a month and performed XRD experiments. We are happy if another team will visit us to perform synchrotron experiments, in particular, XAFS experiments.

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