

Abstract:

Noncovalent weak interactions play important roles in biological systems [1]. In particular, such interactions in the second-coordination shell of metal ions in proteins modulate the structure and reactivity of the metal ion site in functionally significant ways.

Recently, we have demonstrated the perturbation of weak non-covalent interaction on the structure and properties of copper site in a blue copper protein, pseudoazurin (PAz) [2]. PAz is well known to work as an electron transfer protein to NO_2^- reductase and N_2O reductase in denitrifying bacteria [3]. The weak interaction at Met16 with a copper coordinated histidine (His81) imidazole ring in the second coordination sphere provides not only for the modulation of PAz properties but also the protein stability [4].

In this lecture, I also would like to introduce the utilization of modern quantum beams involving Synchrotron X-ray, Neutron Beam, and Muon in biological chemistry and material sciences.

References:

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Biography:

Prof. Kohzuma was born in 1961 in Miyazaki, Kyushu-Island, Japan.

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