

Special Issue

Frontiers in Protein Crystallography Using Quantum Beams

Message from the Guest Editors

What will be the new frontiers in protein crystallography? The X-ray free-electron laser is attracting attention as a new frontier, as it provides all the X-ray diffraction data, including time-resolved diffraction data, before the effect of X-ray radiation. There is also no such concern with neutron protein crystallography, and moreover this provides information on hydrogen, hydration, and protonation states, which are essential for understanding the mechanisms of physiological functions. The use of meson as a new quantum beam can be considered. The holography of metalloprotein crystals is such that the valence states of the active metal at the active center of the metalloprotein can be determined, and this will be very promising in the future. It is, therefore, a good chance to explore these new frontiers, which may surpass conventional X-ray protein crystallography, in our Special Issue entitled “Frontiers in Protein Crystallography Using Quantum Beams”.

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