X-ray Laser Nanoimaging Free from Radiation Damage

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Sample damage by the illuminating beam is a vexing problem in nanoimaging and limits achievable resolution. Femtosecond X-ray free-electron lasers (XFELs) can avoid this problem by using coherent diffraction outrunning radiation damage processes. We have been performing in-solution coherent diffractive imaging (CDI) [1,2] experiments using a Japanese XFEL facility SACLA for various samples, including cells, viruses [3], and metastable materials.

References:

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Education/Career

2010-present Professor, Research Institute for Electronic Science (RIES), Hokkaido University
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Research Interests

Coherent X-ray imaging, Bioimaging, Metastable functional materials, Hydrogen society