

## **NANOSECOND TIME-RESOLVED MACROMOLECULAR CRYSTALLOGRAPHY.**

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Protein activity involves rapid structural changes and short-lived intermediates. Laue X-ray diffraction technique that utilizes synchrotron radiation from high-brilliance third-generation sources (ESRF, France; APS, USA; SPring-8, Japan) provides a powerful tool for following these structural changes in real time and at physiological temperatures, with time resolution of ~100ps. We present current efforts in developing various aspects of the time-resolved X-ray diffraction technique at the BioCARS 14-ID beamline (APS) as well as the latest results from ns studies of photo-sensitive proteins.