

Poster Presentation

MS28.P07

Time-Resolved SAXS experiments with low sample consumption

T. Matsui¹, P. Liu¹, L. Carter¹, T. Weiss¹

¹*Stanford University, Dept. of Chemistry/SSRL, Menlo Park, CA, USA*

Using Time-Resolved Small Angle X-ray Scattering (TR-SAXS) on the millisecond time scale to investigate biological systems is an extremely powerful tool to detect possible intermediate states that form during the course of the reaction and gain detailed insight into the sequence of events along the reaction pathway. However the use of TR-SAXS has often been difficult due to the large amount of sample typically required for such experiments. Here we report on our recent development of a fast TR-SAXS setup using a customized stopped-flow mixer. This new setup allows us to obtain a TR-SAXS data set from as little as 30ul of sample volume. It also eliminates the sample consuming priming of the tubing inside the stopped flow and thus substantially reduces the sample amount required for such experiments. An automatic wash cycle for the sample cell (capillary) is employed after every single shot to ensure that the capillary is clean and no residues remain in the cell from the previous measurement.

Keywords: SAXS, Time-resolved