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Real-time-resolved observation of complexation reaction of U Ions by using dispersive XAFS technique

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Dispersive XAFS technique is unique approach for the real-time-resolved observation of chemical reaction. X rays with wide-band energy are created by a curved crystal and counted by a space-resolved detector after sample transmission. We can obtain XAFS spectra without any mechanical motion of crystal or detector. We have developed dispersive XAFS observation system at BL14B1 (Japan Atomic Energy Agency beamline) of SPring-8 and applied to some chemical reactions. Complexation reactions of U and other ions are targets of our interest. 1-10 Hz EXAFS observation for the complexation reaction reveals that fast electronic change of center atoms and slow local structural change due to complex formation. We want to show some applications of the dispersive XAFS technique which allows us to get the fast and stable EXAFS spectra.

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