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【714】Nonlinear XUV-optical transient grating spectroscopy at the Si L2,3 –edge

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Extending the methodologies of nonlinear optics to the X-ray regime is a promising and exciting avenue in the light of the recent development of X-ray free electron lasers. For the first time, space, time, and energy resolved XUV-transient grating experiments on S3N4 membranes recorded around the Si L2,3-edge have been realized. The observed signal decays have been assigned to ultrafast charge carrier dynamics driven by Auger recombination and electron diffusion. The increase of the XUV energy above the absorption edge resulted in a shortening of the signal decay, which could be connected to an increase in the initial charge carrier density.

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