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Abstract for an Invited Paper
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Imaging ultrafast molecular transformations with laser-induced electron diffraction[1]

COSMIN BLAGA, Kansas State Univ

Diffraction-based ultrafast imaging techniques are experimental tools developed to follow nuclear motions with atomic-scale spatio-temporal resolutions during molecular transformations. This talk Introduces the key concepts of laser-induced electron diffraction (LIED), a table-top modern adaptation of conventional gas-phase electron diffraction where the rescattering mechanism present during strong-field ionization takes the role of the traditional external electron bean. An overview of recent successful implementations of LIED from small molecules to fullerenes will be presented, discussing various implementations of the method, its advantages but also its challenges. Finally, the talk will address the future of LIED in conjunction with the latest developments in intense, femtosecond laser technologies and electron detection schemes.

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