

Abstract Submitted
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Strong-field enhanced ionization of molecules¹ WEI LAI, Department of Physics and Astronomy, University of Rochester, CHUNLEI GUO, The Institute of Optics, University of Rochester — Enhanced ionization (EI) of molecules has been extensively studied over the past two decades as a common process in molecular dissociative ionization in strong laser fields. However, experimental study of EI is far from being complete. In this work, we perform a systematic experimental investigation of EI in several commonly-studied small molecules, including N₂, O₂, and CO. Our results show that double-ionization induced EI occurs only in a newly-discovered channel with a lower kinetic energy release instead of the commonly-seen channel. Furthermore, the dependence of EI on laser intensity and laser polarization is explored. Lastly, the comparison between N₂ and O₂ shows that molecular orbital shape plays a key role in EI.

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