

Abstract Submitted
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Fragmentation Dynamics of Endohedral Fullerene $\text{Ho}_3\text{N@C}_{80}$ Ionized with Intense and Short X-Ray FEL Pulses¹ BRENDAN MURPHY, Western Michigan University, HUI XIONG, Univ of Connecticut - Storrs, LI FANG, University of Texas at Austin, TIMUR OSIPOV, LCLS SLAC National Accelerator Laboratory, EDWIN KUKK, University of Turku, VLADMIR PETROVIC, HENG LI, EMILY SISTRUNK, Pulse SLAC National Accelerator Laboratory, RICHARD SQUIBB, University of Gothenburg, RAIMUND FEIFEL, Uppsala University, KENNETH FERGUSON, JACEK KRZYWINSKI, SEBASTIAN SEBASTIAN, LCLS SLAC National Accelerator Laboratory, MARKUS GUEHR, Pulse SLAC National Accelerator Laboratory, CHRISTOPH BOSTEDT, LCLS SLAC National Accelerator Laboratory, PHILIP BUCKSBAUM, Pulse SLAC National Accelerator Laboratory, NORA BERRAH, Univ of Connecticut - Storrs — The photoionization and fragmentation dynamics of gas phase endohedral fullerenes $\text{Ho}_3\text{N@C}_{80}$ with intense femtosecond X-ray pulses from the Linac Coherent Light Source (LCLS) free electron laser (FEL) have been investigated. The central photon energy of the x-ray pulses was set at 1530 eV, targeting the absorption of the 3d electron on Ho. Multiphoton ionization led to the highest charge state observed on the parent molecule to be $\text{Ho}_3\text{N@C}_{80}^{5+}$, suggesting a stable structure even with 5 charges on the parent molecule. We will present the different atomic and molecular fragments dynamics observed.

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