

Abstract Submitted
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Photoionization of Au⁺ ions and developments in the synthesis of the metallofullerene Au@C₆₀¹ KYREN BOGOLUB, DAVID MACALUSO, ALLISON MUELLER, ANDREA JOHNSON, Univ. of Montana, ALFRED MÜLLER, STEFAN SCHIPPERS, JONAS HELLHUND, ALEXANDER BOROVNIK, Univ. Giessen, Germany, ANDRE ANDERS, PAG-LBNL, Berkeley, CA, ALEX AGUILAR, A.L. DAVID KILCOYNE, ALS-LBNL, Berkeley, CA — Single photoionization of Au⁺ ions was investigated via the merged-beams technique at AMO Beamline 10.0.1.2 of the Advanced Light Source at Lawrence Berkeley National Laboratory. The relative single photoionization yield was measured as a function of photon energy in the 45 eV to 120 eV energy range. These measurements were made in preparation for future photoionization studies of the endohedral metallofullerene Au@C₆₀, the production of which was also investigated. In proof-of-principle measurements a mass-resolved beam of Au@C₆₀⁺ was produced with a primary ion beam current in the single picoamp range without optimization of the ion source or synthesis parameters. Plans are presented for improved metallofullerene production yield to be used in photoionization measurements of the endohedral fullerene ions in conjunction with the continuing study of pure Au.

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