

Abstract Submitted
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Inner Shell Photodetachment of Atomic Negative Ions¹ R.C. BILODEAU, I. DUMITRIU, Western Michigan University and LBNL - ALS, N. BERRAH, Western Denison University, N.D. GIBSON, C.W. WALTER, Denison University, J.D. BOZEK, G.D. ACKERMAN, Lawrence Berkeley National Laboratory - ALS — The qualitatively different spectra and structure observed in atomic negative ions, owing largely to the short-range binding potential and the strong correlation effects present in these systems, make negative ions unique and of fundamental interest. A summary of recent experiments led by our team on BL 10.0.1 IPB at the ALS will be presented. The focus will be on resonances observed in the photoexcitation of inner-shell s-, p-, or f-electrons into partially filled p (in He⁻ [1] and S⁻ [2]) or d (in Ni⁻ and Pt⁻) orbitals. Strong shape or Feshbach resonances were produced in all cases, and observed to couple strongly into decay channels leading to typically many final ionization states. Observed ionic channels were set on a measured absolute scale.

1. R.C. Bilodeau *et al.*, Phys. Rev. Lett. **93**, 193001 (2004).
2. R.C. Bilodeau *et al.*, Phys. Rev. A **72**, 050701(R), (2005).

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