

Abstract Submitted
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Recent results on a new method for producing ultracold molecular ions¹ WADE RELLERGERT, SCOTT SULLIVAN, University of California - Los Angeles, SVETLANA KOTOCHIGOVA, Temple University, KUANG CHEN, STEVEN SCHOWALTER, ERIC HUDSON, University of California - Los Angeles — We present recent results from our experimental effort to produce ultracold, internal ground-state BaCl^+ ions using a Ca MOT. The method utilizes sympathetic cooling due to the strong collisions between co-trapped molecular ions and laser-cooled neutral atoms which should efficiently cool both the internal and external molecular ion degrees of freedom. Samples of such ultracold molecular ions find applications in ultracold chemistry, precision measurement and quantum computation.

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