

Abstract Submitted
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Ultracold 4-center reactions of KRb molecules. MING-GUANG HU, YU LIU, ANDREI GHEORGHE, YEN-WEI LIN, KANG-KUEN NI, Harvard University — Chemical reactions at the fundamental level obey the laws of quantum mechanics. However, reactions are often far from the regime where the quantum motions of the reagents play an important role. Ultracold reactions of KRb is a good candidate, where the unusual 4-center reactions between two KRb molecules is expected to produce K₂ and Rb₂ molecules with 10 cm^{-1} (or 14.4 K) excess energy. To directly measure reaction products and to fully map out their quantum states, we are designing and constructing a novel quantum degenerate gas apparatus with the integration of REMPI and ion velocity mapping imaging. Our work aims to open up new directions for physical chemistry studies with AMO techniques.

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