

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Energy transfer of highly vibrationally excited azulene: crossed-beam study of collisions between azulene and krypton CHI-KUNG NI, Institute of Atomic and Molecular Sciences, Academia Sinica — The energy transfer dynamics between highly vibrationally excited azulene molecules and Kr atoms in a series of collision energies was studied using a crossed-beam apparatus along with time-sliced velocity map ion imaging techniques. The shapes of the collisional energy-transfer probability distribution functions were measured directly from the scattering results of highly vibrationally excited or “hot” azulene. At low enough collision energies an azulene-Kr complex was observed, resulting from small amounts of translational to vibrational/rotational (T-V/R) energy transfer. T-V/R energy transfer was found to be quite efficient. On the other hand, only a small fraction of vibrational energy is converted to translational energy (V-T). We find that substantial amounts of energy are transferred in the backward scattering direction due to supercollisions at high collision energies.

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Date submitted: 25 Nov 2005

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