

Multicoincidence studies of resonant Interatomic Coulombic Decay in Ne₂

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Synopsis Recent measurements of Interatomic Coulombic Decay after resonant excitation of neon dimers close to the Ne(2s) threshold are presented.

A measurement of resonant Interatomic Coulombic Decay (ICD) [1, 2] has been performed at the BESSY synchrotron source using Cold Target Recoil Ion Momentum Spectroscopy (COLTRIMS) [3, 4, 5]. The main goal of this measurement was to perform a quantum state resolved investigation by resolving:

- 1) The initial electronic state which will undergo ICD
- 2) The initial vibrational state of the neon dimer
- 3) The ICD lifetime
- 4) The ICD electron energy
- 5) The ICD electron emission angle in the body fixed frame
- 6) The final electronic state of the ionic fragment
- 7) The fragment kinetic energy of the vibrational state

First results will be presented including photon energy scans across the first resonances and a detailed examination of individual excited states.

References

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