

AU Chabot, M, Martinet, G, Mezdari, F, Diaz-Tendero, S, Beroff-Wohrer, K, Desesquelles, P, Della-Negra, S, Hamrita, H, Le Padellec, A, Tuna, T, Montagnon, L, Barat, M, Simon, M, Ismail, I
TI Charge transfer in high velocity C-n(+)+He collisions

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ID CLUSTER-ATOM COLLISIONS; ELECTRONIC-ABSORPTION-SPECTRA; CARBON CLUSTERS; NEON MATRICES; LINEAR C-6; FRAGMENTATION; CAPTURE; SPECTROSCOPY; CHAINS

AB Dissociative and non-dissociative charge transfer cross sections in high velocity ($v = 2.6$ au) collisions between ionic carbon clusters C-n(+) ($n = 2-10$) and helium atoms have been measured. The sum of the cross sections has been found to increase significantly with n . Measurements of branching ratios for all fragmentation channels of excited C-n clusters are reported. The summed branching ratios associated with a given number of emitted fragments exhibit odd-even alternations reflecting the higher stability of the species having an odd number of atoms. From an analysis of the summed branching ratios within the statistical microcanonical metropolis Monte Carlo model, and knowing the temperature of the incident clusters, deposited energy distributions due to the charge transfer process are deduced ($n = 5-9$). These distributions, of similar characteristics whatever n , peak around 4-5 eV and exhibit a large percentage of superexcited states situated above the continuum.

C1 Univ Paris 11, Inst Phys Nucl, F-91406 Orsay, France. CNRS, F-91406 Orsay, France., Univ Paris 11, UMR 8625, Collis Atom & Mol Lab, F-91405 Orsay, France. CNRS, F-91405 Orsay, France., Univ Autonoma Madrid, Dept Quim, E-28049 Madrid, Spain., Univ Paris 11, Ctr Spectrometrie Nucl & Spectrometrie Masse, F-91405 Orsay, France., Univ Toulouse 3, IRSAMC, F-31062 Toulouse 4, France. CNRS, F-31062 Toulouse 4, France., Univ Paris 06, Lab Chim Phys Mat & Rayonnement, UMR 7614, F-75231 Paris 05, France. CNRS, F-75231 Paris 05, France. Atom Energy Commiss Syria, Dept Phys, Damascus, Syria.

RP Chabot, M, Univ Paris 11, Inst Phys Nucl, F-91406 Orsay, France.

EM wohrer@lcam.u-psud.fr

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PI BRISTOL

PA DIRAC HOUSE, TEMPLE BACK, BRISTOL BS1 6BE, ENGLAND

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