

AU Le Padellec, A, Rabilloud, F, Pegg, D, Neau, A, Hellberg, F, Thomas, R, Schmidt, HAT,
Larsson, M, Danared, H, Kallberg, A, Andersson, K, Hanstorp, D
TI Electron-impact detachment and dissociation of C-4(-) ions
SO JOURNAL OF CHEMICAL PHYSICS

LA English

DT Article

ID SMALL CARBON CLUSTERS; DIFFUSE INTERSTELLAR BANDS; ABSOLUTE CROSS-
SECTIONS; CHARGED NEGATIVE-IONS; ABSORPTION-SPECTRA; NEON MATRICES;
ANIONS; RECOMBINATION; CHAINS; SPECTROSCOPY

AB CRYRING was used to study collision processes between an electron and a negative ion cluster C-4(-). The total detachment cross sections for the production of the neutral 4C, 3C, 2C, and C fragments were measured. The cross sections for pure detachment, and for detachment plus dissociation leading to the production of C-3+C, 2C(2), and C-2+2C were extracted using a grid. It was found that the pure detachment process overwhelmingly dominates all other fragmentation processes. The threshold location for the detachment channel is found to be around 6.0 eV. Although the doubly charged negative ion C-4(2-) has received little previous attention, a defined near-threshold resonance observed in the detachment cross section curve, has been associated with the short-lived state C-4(2-) (0.7 fs lifetime). (C) 2001 American Institute of Physics.

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NR 31

TC 9

PU AMER INST PHYSICS

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J9 J CHEM PHYS

JI J. Chem. Phys.

PD DEC 15

PY 2001

VL 115

IS 23

BP 10671

EP 10677

PG 7

SC Physics, Atomic, Molecular & Chemical

GA 498WF

UT ISI:000172536000011