

AU Fritioff, K, Sandstrom, J, Andersson, P, Hanstorp, D, Hellberg, F, Thomas, R, Larsson, M, Osterdahl, F, Collins, GF, Le Padellec, A, Pegg, DJ, Gibson, ND, Danared, H, Kallberg, A
TI Observation of an excited C-4(2-) ion

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ID ELECTRON-IMPACT DETACHMENT; PHASE

AB This paper reports an experimental investigation of the electron impact detachment of C-4(-). We observe structure in the electron impact cross section for detaching a single electron from a C-4(-) cluster anion, which we attribute to the formation and decay of the C-4(2-) dianion. The system is energetically unstable and very rapidly decays via double autodetachment. The energy and width of the resonance were determined to be 8.8(5) eV and 1.4(5) eV, respectively, and the resonance lies 1.5(5) eV above the ground state of the neutral system. The experiment was conducted by merging monoenergetic electron and ion beams in the heavy ion storage ring CRYRING. The detachment channel was monitored by detecting neutral C-4 fragments.

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