

AU Le Padellec, A, Andersson, K, Hanstorp, D, Hellberg, F, Larsson, M, Neau, A, Rosen, S, Schmidt, HT, Thomas, R, Semaniak, J, Pegg, DJ, Osterdahl, F, Danared, H, Kallberg, A  
TI Electron scattering on CN-

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DT Article

ID ABSOLUTE CROSS-SECTIONS; DISSOCIATIVE RECOMBINATION; EXCITED-STATES; DYNAMICS; IONS

AB We present the results of an experiment in which electrons have been scattered on CN- ions, over a collision energy range 0-60 eV The experiment was performed at the heavy ion storage ring CRYRING The CN- ions were stored in the ring and merged with a monoenergetic electron beam that was guided in to and out of the ring using strong magnetic fields. Both neutral and positive fragments from the collision process were detected with surface barrier detectors. It was found that pure detachment completely dominates over those channels which involves breaking the molecular bond. The threshold energy for the detachment process was found to be 7 eV The cross section rose from zero to a maximum of about  $5.10(-16)$  cm<sup>2</sup> just below 30 eV, after which it remained essentially constant. The threshold region was carefully investigated in an attempt to find resonance structure arising from the possible existence of the doubly charged ion, CN<sup>2-</sup>. The statistical uncertainty in the data was, however, too large to conclusively prove or disprove the existence of such a resonance.

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