

THE DISSOCIATIVE ELECTROIONIZATION OF NITROUS OXIDE. THE N⁺ and O⁺ DISSOCIATION CHANNELS

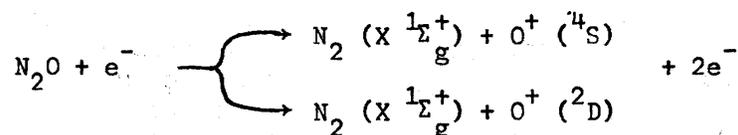
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A detailed study of the dissociative electroionization of nitrous oxide in its N₂⁺ and NO⁺ dissociation channels has been achieved recently (1). In the present work we will report on the dissociation of the N₂O⁺ molecular ion into O⁺ and N⁺.

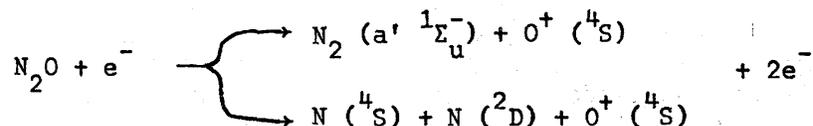
The translational energy distribution as well as the kinetic energy-versus-appearance energy plot of O⁺ have been recorded over wide energy ranges.

At low energy essentially two dissociation limits are observed at (15.3 ± 0.2) eV and 18.5 eV corresponding to



calculated at 15.29 eV and 18.61 eV respectively. Translational to vibrational energy conversion is observed for both processes.

At higher energy evidence is found for both processes



at 23.6 eV and 27.5 eV. The thermochemical thresholds are calculated at 23.7 and 27.4 eV. Dissociative autoionization plays an important role in the energy range of 17.5 - 19 eV and 23 - 32 eV.

The same work on the N⁺ fragment ion being in progress, the results will be reported at the meeting.

References

(1) R. Locht, J.L. Olivier, W. Beeckman, P. Trousson, J. Momigny, XII. ICPEAC, Book of Abstr. vol. 1 (1981), p. 379.