

**Ninth International
Conference on
Atomic Physics**



**Satellite
Workshop and
Conference
Abstracts**

**Seattle, Washington
July 23-27**

ELASTIC AND INELASTIC SCATTERING OF ELECTRONS
 BY N_2O IN THE RANGE OF 10 TO 80 eV*

L. Vušković, Cz. Szmytkowski**, V. Pejčev, B. Marinković and D. Filipović

Institute of Physics, P.O. Box 57, 11001 Beograd, Yugoslavia

Experiment have been carried out in crossed molecular-beam electron-beam arrangement at electron impact energies of 10, 12, 15, 20, 30, 50 and 80 eV. We measured angular distribution of intensity of elastically scattered electrons as well as scattered electrons at most prominent inelastic features⁽¹⁾ $^1\Pi$ and $2^1\Sigma^+$ (8.5 and 9.6 eV energy loss, respectively). The data were taken between 0 and 150° scattering angles.

The intensity distributions corrected for effective path length were extrapolated to 0° and 180° in order to obtain integral and momentum transfer cross sections. Integral cross sections for elastic scattering were subsequently put on the absolute scale by using total cross sections measurement⁽²⁾ with subtraction of ionization cross section⁽³⁾. We assume that contribution of integral excitation cross section is negligible.

Finally, results are presented in absolute units for differential, integral and momentum transfer cross sections for elastic scattering and inelastic at 80 eV. For inelastic scattering at the other impact energies results are in the some arbitrary units (Figs. 1. and 2.).

- 1) D. Čubrić, J. Jureta, S. Cvejanović and D. Cvejanović, 11th SPIG, Dubrovnik, 1982, Inst. of Phys. Univ. Zagreb Yugoslavia, Contributed Papers, p. 79.
- 2) Cz. Szmytkowski, Ct. Karwasz and K. Maciąg, submitted to Chem. Phys. Lett. (1984)
- 3) D. Rapp and P. Englander-Golden; J. Chem. Phys. 43, 1464-79 (1965)

*Supported by the Republic Council of Scientific Research of SR Srbija, Yugoslavia and partly by NBS (G-260), U.S.A.

** Permanent address: Institute of Physics, Technical University of Gdansk, Poland.

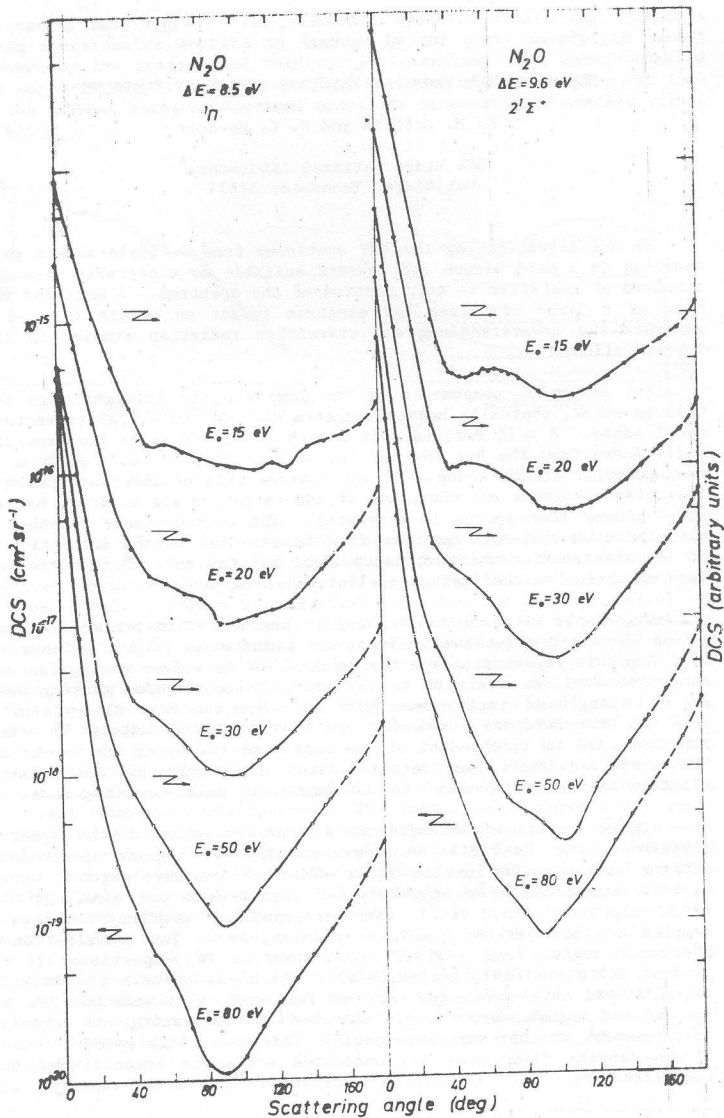


Fig. 1

Fig. 2

Fig.1 Differential cross sections for the ${}^1\Pi$, 8.5eV energy loss feature
 Fig.2 Differential cross sections for the $2{}^1\Sigma^+$, 9.6eV energy loss feature