

SIMULTANEOUS EXCITATION AND IONIZATION
OF RARE GAS ATOMS BY AN ELECTRON
IMPACT. ARGON

V.-F.Z. Papp, L.L. Shimon, M.M. Povch

Uzhgorod National University, Faculty of Physics
(54, Voloshyna Str., Uzhgorod 88000, Ukraine;
e-mail: vidor@vpapp.com)

S u m m a r y

The processes of single and double ionizations of argon atoms using its excitation by an electron impact have been investigated experimentally. The effective cross-sections of the spectral line excitations from levels $3s^13p^6$, $3p^44s$, $3p^44s'$, $3p^44s''$, $3p^43d$, $3p^43d'$, and $3p^43d''$ of the ArII configuration and level $3s^13p^5$ of the ArIII one have been studied in the electron energy interval from the excitation threshold up to 400 eV. The mechanism of populating the corresponding energy levels through radiative cascade transitions and the Auger-decay of autoionization levels is discussed, as well as an opportunity to determine the partial cross-sections of s - and sp -ionization.