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

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S u m m a r y

The single and double processes of ionization of neon atoms by electron impact are experimentally studied. Effective excitation cross-sections of $2s^1 2p^6$, $2p^4 3s$ NeII, and $2s^1 2p^5$ NeIII states at the electron energy from the threshold to 400 eV are received. A slightly expressed structure due to decay of higher situated autoionization energy states is observed on the excitation functions of VUV lines, which are connected with the simultaneous $2p$-ionization and excitation ($\lambda = 45.47 \div 45.69$ nm), removal of $2s$-electrons ($\lambda = 46.07 \div 46.24$ nm), and simultaneous removal of $2s$- and $2p$-electrons ($\lambda = 37.9$; $48.81 \div 49.11$ nm). The possibility to obtain partial s-ionization and sp-ionization cross-sections are discussed.