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ELECTRON IMPACT EXCITATION OF THE $6p7s\ ^3P_1$ STATE OF Pb ATOM

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In our previous paper [1] we reported preliminary results for relative differential cross section (DCS) for elastic electron scattering by atomic lead at 40 eV electron impact energy and the scattering angle range from 10° to 148° . We also performed inelastic DCSs measurements at the same target and here we present preliminary results on electron impact excitation of the $6p\ 7s\ ^3P_1$ state of Pb atom. The angular distribution of the scattered intensity in the range from 0° to 148° was determined at 40 eV electron impact energy also. The experiment was carried out using a crossed electron-atom beam technique in the electron spectrometer "ESMA", both described in more details elsewhere [1, 2].

An energy loss spectrum is shown in figure 1. Obtained experimental results for relative inelastic DCS are presented in figure 2. Absolute DCS values will be determine through the normalization of relative DCS to the optical oscillator strength (OOS) utilizing the forward scattering function (FSF) for generalized oscillator strengths (GOS).

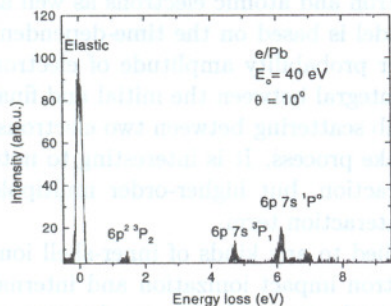


Figure 1: Energy loss spectrum of Pb atom

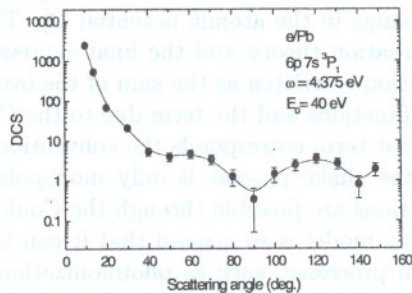


Figure 2: Relative DCSs for the $6s7p\ ^3P_1$ state

References

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- [2] S. Milisavljević, D. Šević, R. K. Chauhan, V. Pejčev, D. M. Filipović, R. Srivastava and B. P. Marinković, J. Phys. B: At. Mol. Opt. Phys. 38 (2005) 2371.

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