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Main Magnetic Focus Ion Source for Ionization of L- and M-Shell Electrons of Heavy Elements

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Novel device based on the technology of Main Magnetic Focus Ions Source [1] has been developed recently at JINR. The electron beam characterized by the current of 50 mA and the energy exceeding 30 keV is focused by the magnetic system consisting of the radial permanent magnets. Highly charged ions are produced in the main focus of magnetic lens, where the electron current density exceeds 10 kA/cm^2 . The computer simulations of the charge-state distributions for Xe, Au and Bi ions are presented. A comparison with first experimental results is also made.

References

[1] V.P. Ovsyannikov, A.V. Nefiodov, and O.K. Kultashev, 2016 Method and device for the production of highly charged ions Int. Patent Appl. no PCT/EP2016/055168, Pub. no WO 2016/142481 A1.

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