

A Study of Electron Strings and their Use for Efficient Production of Highly Charged Ions*,

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transition to the new state of one component electron plasma in a so-called electron string has recently been observed. This project aims at investigating electron strings and their possible use in ion sources. The main objectives of the project and the necessary reconstruction of the existing electron beam ion sources will be presented. The results on measurements of formation and decay times for electron strings will be discussed as well as the results of the first attempts to measure an electron energy distribution in the string using X-ray technique. The preliminary results on production of Ar¹⁶⁺ in strings indicated high ionization efficiency. Future plans for studies will also be considered.

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