

Simulation of Non-Axial Ions Extraction from Tubular Electron String Ion Source (TESIS)

Tubular Electron String Ion Source (TESIS) – improved version of well-known Electron String Ion Sources (ESIS) aiming for nearly 1000-fold increase of ion yield – is under development at JINR. TESIS advantages over typical ESIS are discussed and their characteristics are compared. Basic scheme of TESIS operation is presented. One of the crucial processes in TESIS– non-axial ion extraction – requires peculiar configuration of output electrodes providing steep potential gradient. Numerical simulations of ion extraction trajectories for several different electrode configurations are performed and the optimal one is discussed. The obtained results will be useful for TESIS design and construction.

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