

Simulation Study of LEBT for Transversely Coupled Beam from an ECR Ion Source

Y. Yang,^{1,2} W. P. Dou,¹ L.T. Sun,¹ Q. G. Yao,¹ Z. M. Zhang,¹ Z. J. Wang,¹ X.Z. Zhang,¹
H.W. Zhao¹

¹ *Institute of Modern Physics, CAS, Lanzhou 730000, China*

² *University of Chinese Academy of Sciences, Beijing 100039, China*

Corresponding author: Y. Yang, e-mail: yangyao@impcas.ac.cn

A Low-Energy intense-highly-charged ion Accelerator Facility (LEAF) program has been launched at IMP. This accelerator facility consists of a superconducting Electron Cyclotron Resonance (ECR) ion source, a Low Energy Beam Transport (LEBT) system and a Radio Frequency Quadrupole (RFQ). It is especially of interest for the extracted ion beam from the ECR ion source, which is transversely coupled, and this property will significantly affect the beam transmission in the LEBT line and the matching with the downstream RFQ. In the beam transport design of LEAF, beam decoupling in the LEBT is considered to lower down the projection emittances and the feasibility of the design has been verified by beam simulation with a transversely coupled beam from the ECR ion source.

References

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