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## **High Intensity High Charge State Ion Beam Production with an Evaporative Cooling Magnet ECRIS**

Wang Lu<sup>1</sup>, Liangting Sun<sup>1</sup>, Cheng Qian<sup>1</sup>, Xing Fang<sup>1,2</sup>, Junwei Guo<sup>1,2</sup>, Yao Yang<sup>1,2</sup>, Xuezheng Zhang<sup>1</sup>, Yucheng Feng<sup>1</sup>, Baohua Ma<sup>1</sup>, Bing Xiong<sup>3</sup>, Lin Ruan<sup>3</sup>, Hongwei Zhao<sup>1</sup> and Wenlong Zhan<sup>1</sup>

*1 Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou 73000, China*

*2 University of Chinese Academy of Sciences, Beijing 100049, China*

*3 Institute of Electrical Engineering, CAS, Beijing 100190, China*

*Corresponding Author: Wang Lu, E-mail address: luwang@impcas.ac.cn*

LECR4 (Lanzhou ECR ion source No.4) is a room temperature electron cyclotron resonance ion source, designed to produce high current, high charge state ion beams for the SSC-LINAC injector (a new injector for Sector Separated Cyclotron) at the Institute of Modern Physics. LECR4 also serves as a PoP machine for the application of evaporative cooling technology in accelerator field. To achieve those goals, LECR4 ECR ion source has been optimized for the operation at 18 GHz, with the optimal axial confinement mirror fields of 2.5 T and 1.3 T and 1.0-1.1 T radial field on the plasma chamber wall. In February 2014, the first analyzed beam was extracted. During 2014, LECR4 ion source was commissioned at 18 GHz microwave of 1.6 kW with an injection pumping free system. To further study the influence of injection pumping system to the production of medium and high charge state ion beams, in March 2015, an injection system with pumping system was installed, and some optimum results were produced, such as 2110 euA of O<sup>6+</sup>, 560 euA of O<sup>7+</sup>, 580 euA of Ar<sup>11+</sup>, and so on. The comparison will be discussed in the paper.