

A Miniature H⁻ Source for the C-30 Compact Cyclotron at Swierk, J. LORKIEWICZ, SINS, Swierk, Poland - The extracted beam intensity of C-30 cyclotron at SINS is limited by using internal H⁻, PIG-type ion sources. The hydrogen leak into the vacuum chamber results in stripping in the process of acceleration. The high extraction efficiency of H⁻ ions from thermal plasma requires high RF dee voltage, which, due to the RF break-downs, limits the RF pulse duty ratio. To overcome these limitations a very small, low discharge power, external ion source have been constructed at SINS. The source plasma chamber is surrounded by 12 rows of SmCo magnets in a line-cusp configuration. A simple 2-electrodes extraction system was designed to deflect the extracted electrons. The extraction electrode is equipped with a cooling system, which can absorb the power of the extracted electron current. The source has been attached to the cyclotron injection line and operation tests have been performed.