Design of the RF Coupler for the 350MHz RFQ Linac

J.M. Han, H.H. Lee, K.Y. Seo, Y.S. Cho, B.H. Choi, KAERI, Daejon, Korea
KAERI
Daejon, Korea

Abstract

The 350MHz Radio-Frequency Quadrupole (RFQ) linac has been fabricated to accelerate a 20mA proton beam from 50keV to 3MeV. A 1.0MW CW RF system will be used to provide power to the RFQ. Two types of a input RF coupler were designed and fabricated to feed the RF power generated by klystron into the RFQ accelerating cavity.

Discharge Characteristics of an MFTF-B Short Pulse Ion Source

Doo-Hee Chang, Chang-Seog Seo, and Byung-Hoon Oh
Korea Atomic Energy Research Institute
150 Dukjin, Yousun, Daejeon, Korea 305-353

Abstract

The discharge characteristics of an MFTF-B (A Tandem Mirror Fusion Test Facility) short pulse (0.5 sec) NBI (Neutral Beam Injection) ion source was investigated with low arc power (<10 kW) and filament heating power (<75 kW). The ion source will be used for the preliminary experiment of beam extraction prior to a prototype LPIS (Long Pulse Ion Source) of the KSTAR (Korea Superconducting Tokamak Advanced Research), afterwards. Optimum operating pressure in the ion source was $1\sim20310^{-3}$ torr with hydrogen gas, and the plasma density was $1\sim11310^{10}$ cm^{-3} during the discharge. The electron temperature measured by using a cylindrical Langmuir probe shown two temperature plasma by non-Maxwellian electron effect, which was originated from primary electrons emitted from the hot filament cathode. The deduced values of electron temperature with plasma potential and floating potential were close to the low electron temperature as the increase of the arc power and the plasma density.