The first tuning result of the PEFP RFQ

Ji-ho Jang, Yong-sub Cho, Kyoung-keun Jeong, Kyung-tae Sul,
Hyeok-jung Kwon, Young-jun Kim, and Jean-ho Na
Proton Engineering Frontier Project / KAERI
P.O.Box 105, YuSong, Daejon, Korea

Abstract

In this work, we present the first tuning result of the RFQ for the proton engineering frontier project (PEFP). We have adopted the TRASCO tuning method in oder to control the quadrupole and dipole field. After 4 tuning steps, we have got the dipole components to be less than ±2% of the quadrupole component

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A Study on the High Power RF Components for PEFP 20MeV Proton Accelerator

H. J. Kwon, Y. S. Cho, K. T. Seol, M. Y. Park, C. B. Shim, K. K. Jeong
Proton Engineering Frontier Project
Korea Atomic Energy Research Institute
150 Deok-Jin Dong, Yu-Seong Gu, Dae-Jeon 305-353, Korea

Abstract

A study on the high power RF components for PEFP (Proton Engineering Frontier Project) 20MeV proton accelerator was carried out. The operating frequency is 350MHz, and the required RF power for 3MeV RFQ and 20MeV DTL are 417kW, 895kW respectively. The high power components include 1MW klystron, 1.3MW circulator, 1MW dummy load, WR2300 waveguide components and input couplers with window. The tests of each component have been done, which reveals the characteristics of each component and overall system performances. In this paper, the characteristics of high power RF components were discussed on the basis of the test results.