

Slow Extraction System of Stretcher Ring, KSR,
H. FUJITA, M. INOUE, Y. IWASHITA, A. NODA,
T. SHIRAI, T. SUGIMURA and H. TONGUU, Kyoto
Univ. Inst. for Chemical Research - KSR is a stretcher ring
of 100 MeV electron with maximum duration and repetition
rate of 1 ms and 20 Hz, respectively. As the first septum
for the slow beam extraction by the third resonance, an
electrostatic septum (ESS) has been fabricated. The
electrode 0.3 m in length can deflect 100 MeV electron
beam as large as 21 mrad with the rather conservative
electric field strength of 70 kV/cm. The electrode is made
of Aluminum and the electric field for deflection is shielded
with a thin foil made of Ti 0.1 μm in thickness. The gap
between the electrode and the foil can be varied from 5 to
35 mm. The first part of the septum foil is separated into
five strips of 2 cm width in order to avoid wrinkle by
heating with collision of electron beam. By the ESS, the
extracted electron beam is separated from the circulating
beam more than 20 mm, which makes the space for the
septum coil of the septum magnet and the vacuum chamber
wall inside the septum magnet. By the septum magnet, the
extracted beam is further deflected as large as 46° , which is
enough to kick out the beam from the ring.