

High-Power Conditioning of an RF Cavity for High Brilliant Synchrotron Radiation Source,

Y. KAMIYA, T. KOSEKI, K. SHINOE, ISSP, The University of Tokyo; M. IZAWA, S. TOKUMOTO, Photon Factory, KEK; T. MIURA, K. SATO, Toshiba Corporation - We have developed the damped-structure RF cavity for two low emittance electron/positron storage rings. One is a third-generation VUV and SX synchrotron radiation source, the VSX storage ring, which is a future project of the University of Tokyo. The other is a high brilliance configuration of the Photon Factory storage ring. The resonant frequency and shunt impedance of the cavity are 500.1 MHz and 7.7 M Ω , respectively. The damping of higher-order modes is achieved by large hole beam ducts, a part of which is made of SiC microwave absorber. We fabricated a high power model of the cavity and carried out its high power test (SiC beam-duct was not attached to the cavity in this test). After 60 hours conditioning, the input power of 150 kW was obtained without any severe problems.