

**Reduction in Resistive-Wall Impedance of Insertion-Device Vacuum Chamber by Copper Coating**, M. FUJISAWA, Y. KAMIYA, T. KOSEKI, N. NAKAMURA, K. SHINOE, Y. TAKIYAMA, The University of Tokyo; Y. HORI, KEK-PF; S. MANDAI, S. OISHI, IHI CO. - An insertion-device vacuum chamber made of stainless steel has a high resistive-wall impedance because of its narrow gap and comparatively low conductivity. As a result, the growth rate of transverse coupled-bunch instability and the parasitic loss become large. A possible solution of this problem is to coat the inner surface of the chamber with highly conductive metal such as copper or silver. We calculated the resistive-wall impedance of the copper-coated stainless-steel chamber and found that the impedance can be reduced almost to that of copper for a wide frequency range. Even thin copper coating can effectively suppress resistive-wall instabilities, so that eddy current is not much induced in the chamber by changing the magnetic gap of insertion device. We also manufactured a test chamber and studied the technical feasibility. This paper describes the effects of copper coating and the test chamber.