Status of SPring-8 Synchrotron

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The construction of the synchrotron was started in 1993 and all components have been manufactured successfully. Every magnetic fields of the dipole magnets were measured and the field-strength errors were less than $\pm 8\times10^{-4}$. With the field strengths we arranged the dipole magnets to suppress the growth of the closed-orbit distortion. The horizontal COD is expected to be decreased to about 1/7 of the design value. Power supplies of these magnets were required to be operated following a trapezoid excitation-curve of the output current with the tracking reappearance of 1×10^{-4} to obtain a stable beam. Manufacture of these power supplies were completed successfully and the tracking error was measured to be less than 5×10^{-5}.

All magnets, 64 dipole, 80 quadrupole and 60 sextupole magnets have been aligned precisely with the allowance of 0.2 mm corresponding to the the design values of 0.1 mm in rms (Fig.1). As a result, the circumference error of the synchrotron is estimated to be in a few mm. Now the vacuum chamber and pumping units are being installed.

The RF power system is under constructing. RF conditioning of the 5-cell cavities and power windows were finished successfully and they are placed at the synchrotron building (Fig. 2).

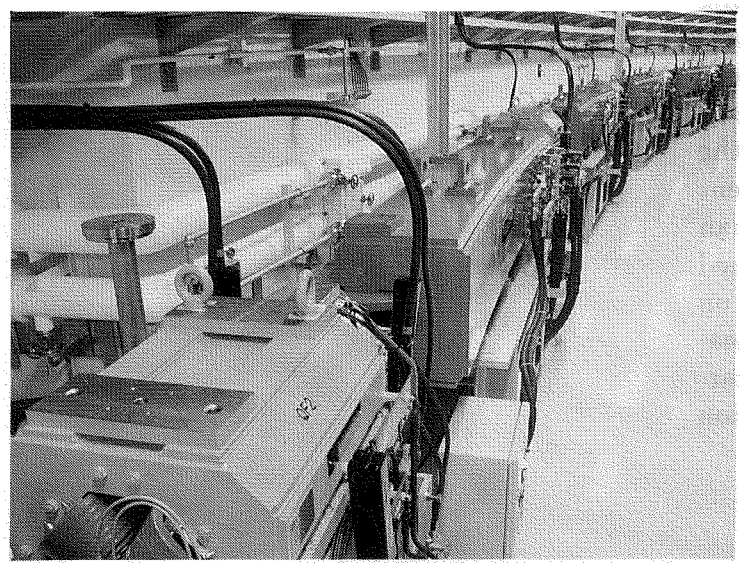

Fig. 1. Row of the lattice magnets in the synchrotron room.

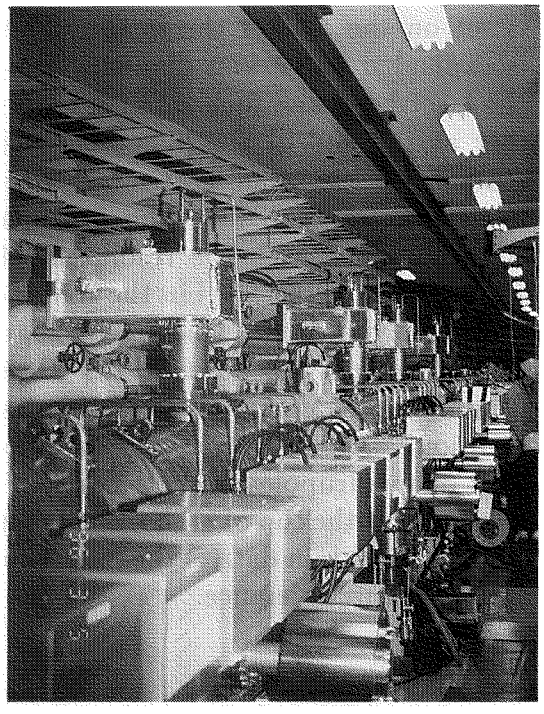

Fig. 2. Row of the 5-cell RF cavities without the wave guides in the synchrotron room.