Design and Development of High-Temperature Superconducting Magnet System with Joint-Winding for the Helical Fusion Reactor


LHD-Type Helical Fusion Reactor “FFHR-d1”
- steady-state
- long-life blanket
- long-life divertor

$R = 15.6 \, \text{m}, \quad B_c = 4.7 \, \text{T}, \quad P_f = 3 \, \text{GW}$

$\bullet$ HTS prototype conductor sample achieved 100 kA for 1 hour
$\bullet$ Mechanical lap-joint confirms low joint resistance (2 nΩ) $\Rightarrow$ “Joint-winding” of helical coils technically feasible

1410 mm