

Fig. 1

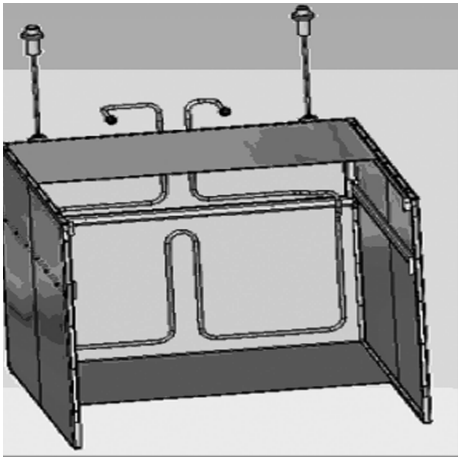


Fig. 2

# 6 - 5 Vertical Test Dewar Design

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In the project of ADS, superconducting cavity device must be made an experiment of the performance in the vertical position at liquid helium temperature in dewar before assembling in the cryostat, so vertical test dewar is an essential device. So far, its designing and drawings have been accomplished.

Vertical test dewar is consisted of flanges, internal cavity, copper thermal shield and external cavity. Flanges is used to hang superconducting cavity and so on; thermal shield can reduce radiational heat leakage effectively; external cavity is used to post flanges, internal cavity and copper thermal shield, it can also offer vacuum environment. According to theoretical calculation and computer simulation, for example, Fig. 2 shows the mechanical analysis result of the external cavity. Fig. 3 shows the thermal analysis result of the thermal shield. This scheme can meet the mechanical and thermal requirements.

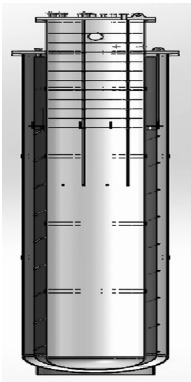


Fig. 1

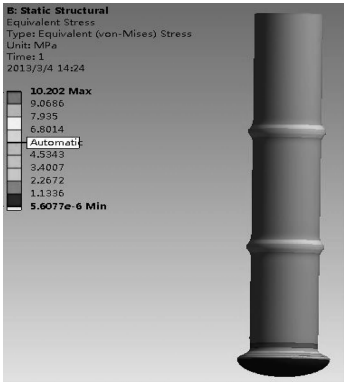


Fig. 2

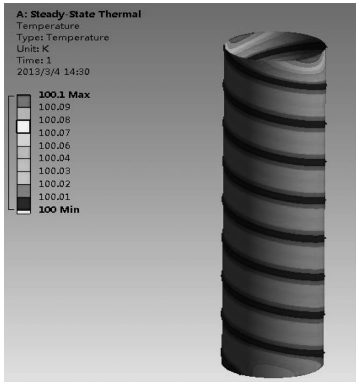


Fig. 3

Total height of the dewar is 5402 mm, the out diameter is 1166 mm, and the heat load is less than 10 W in theory. The manufacturing and assembling work will be finished in June this year.