Contribution ID: **566** Type: **Poster Presentation (120m)**

The influence of the UA ratio between heat exchangers on the temperature distribution

Thursday 25 July 2024 14:00 (2 hours)

In the design of large scale helium refrigerators, it has been found that the UA ratio between the heat exchangers will influence the temperature distribution, which will be required in some special applications, such as the temperature before the expansion or some set temperatures. In this paper, a 2000W@20K helium refrigerator without Nitrogen precooling is described, which need a 70K temperature for cooling the radiation shields and a 20K temperature for cooling the heat load. The calculation showed the relationship between the UA ratios and the temperature between the heat exchangers, which proposes some requirements to the design and produce the heat exchangers.

Submitters Country

China

Authors: LV, Cui; Prof. ZHOU, Gang (Techincal Institute of Physics and Chemistry, CAS); Dr LI, Jing (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences); GONG, Linghui (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences); LIU, Liqiang (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences); XU, Xiangdong (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences); LI, ZhengYu (Technical Institute of Physics and Chemistry,CAS)

Presenter: Prof. ZHOU, Gang (Techincal Institute of Physics and Chemistry, CAS)

Session Classification: Thu-Po-3.3

Track Classification: Tracks ICEC 29 Geneva 2024: ICEC 01: Large scale refrigeration and liquefaction