

传递现象

固体吸附式冷管的制冷性能

武卫东, 毛正荣, 张华, 刘训海, 邬志敏, 伍贻文, 林汉涛

上海理工大学制冷技术研究所, 上海 200093; 上海开能新技术有限公司, 上海 200233

收稿日期 2003-5-12 修回日期 2003-11-13 网络版发布日期 2008-9-1 接受日期

摘要 提出了一种沸石-水工质对余热驱动的固体吸附式冷管. 实验测试了冷管的制冷功率, 研究了其在不同制冷功率时制冷温度的变化情况. 实验研究了热源温度、环境温度、风速等参数对冷管制冷性能的影响, 分析了其机理原因. 研究结果为系统优化设计及吸附式冷管性能的进一步改进提供了重要参考. 提出了吸附式冷管型空调系统的工程化设计方案.

关键词 [固体吸附制冷](#) [沸石分子筛-水](#) [制冷管](#) [性能](#) [余热](#)

分类号

REFRIGERATING CHARACTERISTICS OF SOLID ADSORPTION COOLING TUBE

WU Weidong, MAO Zhengrong, ZHANG Hua, LIU Xunhai, WU Zhimin, WU Yiwen, LIN Hantao

Abstract

A solid adsorption cooling tube with a working pair of zeolite-water driven by waste heat is presented in this paper. Firstly, the cooling power for the cooling tube was tested and the varying status of the cooling temperature at different cooling capacities was studied. The performance of the cooling tube showed strong coupling with exterior ambient parameters such as heat source temperature, ambient temperature, air velocity and air relative humidity. A series of experiments for the effects of the ambient parameters on the performance were performed and analyzed. The results indicated that the performance of the cooling tube was very good. The results could be used as the reference for optimizing system design and improving the performance of the cooling tube. An engineering design scheme of adsorption cooling tube air-conditioner was also proposed.

Key words [solid adsorption refrigeration](#) [zeolite-water](#) [cooling tube](#) [performance](#) [waste heat](#)

DOI:

通讯作者 武卫东 usstwwd@163.com

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(606KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“固体吸附制冷” 的相关文章](#)

▶ [本文作者相关文章](#)

- [武卫东](#)
- [毛正荣](#)
- [张华](#)
- [刘训海](#)
- [邬志敏](#)
- [伍贻文](#)
- [林汉涛](#)