

流动与传递

Experimental and Numerical Investigation of an Ice-slurry Generator

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收稿日期 修回日期 网络版发布日期 接受日期

摘要 A new test facility equipped with refrigerant and brine circulation systems, and a rotating-scraper ice-slurry generator was constructed to analyze the ice-slurry flow and heat transfer accompanied by phase change in an industrial generator. The axial and transverse brine temperature and ice fraction concentration profiles in the ice generator were measured. The heat transfer efficiency lower than the average was identified in the upper half of the ice generator and its cause was determined by conducting three-dimensional numerical simulation using a commercial CFD code, FLUENT. Approaches of improving the brine-side heat transfer rates were investigated by incorporating extra mixing blades from numerical simulation.

关键词 [ice generator,ice-slurry,numerical simulation,heat transfer](#)

分类号

DOI:

对应的英文版文章: [2003-0173](#)

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