*Desalination and Water Treatment*
www.deswater.com

doi: 10.1080/19443994.2014.908143

54 (2015) 2969–2975
June

Taylor & Francis
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# Study on sea ice desalination technology via centrifuge

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Received 11 September 2013; Accepted 14 March 2014

ABSTRACT

Sea ice desalination technology was studied through theoretical analysis, single factor experiments, and industrial tests. Influence factors, such as separation factor, separation time, viscosity, and ambient temperature, were analyzed. The experimental results indicate that desalination decreases exponentially with separation time and increase in separation factor, respectively. In addition, desalination increases with increase in viscosity, and the optimum particle size for sea ice centrifuge desalination is 6 mm. The sea ice desalination system was designed to satisfy the requirement of the process production. Industrial tests about the system were conducted, and the results indicate that the ice crushing, transportation, and desalination could be continuously operated, the sea ice salinity decreases below 1.0, the capacity could reach 5–6 $m^3$/h and above, and the energy consumption is 11.1–13.3 kJ/kg.

*Keywords:* Sea ice; Centrifuge; Desalination

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