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### Enhanced Freshwater Production Using Finned-Plate Air Gap Membrane Distillation (AGMD) (Conference Paper)

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#### Abstract

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Air gap membrane distillation (AGMD), a special type of energy efficient membrane distillation process, is a technology for producing freshwater from waste water. Having some benefits over other traditional processes, this method has been able to draw attention of researchers working in the field of freshwater production technologies. In this study, a basic AGMD system with flat coolant plate has been modified using a specially designed channelled coolant plate of portable size to observe its effect over the production rate and performance of the system. Attempt has been made to increase the amount of distillate flux by using the "fin effect" of the channelled coolant plate. A finned plate have been used instead of a flat coolant plate and experiments were conducted to compare the effect. Coolant temperature and feed temperature of the system have been varied from 10°C to 25°C and 40°C to 70°C respectively. Comparing the data, around 50% to 58% distillate enhancement has been observed for channelled coolant plate. Also, it was seen that the enhancement was higher for higher feed temperatures and coolant temperatures. With these findings, a better performing AGMD module has been introduced to mitigate the scarcity of freshwater. © The Authors, published by EDP Sciences, 2017.

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