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Year round performance and cost analysis of a finned single basin solar still

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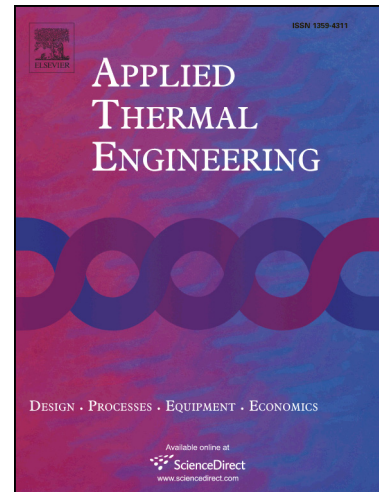
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**Year round performance and cost analysis of a finned single basin solar still**A. A. El-Sebaili<sup>a</sup>, M. El-Naggar<sup>b,\*</sup>

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E-mail address: <sup>a</sup> [ahmedelsebaili@yahoo.com](mailto:ahmedelsebaili@yahoo.com); [ahmed.elsebaei@science.tanta.edu.eg](mailto:ahmed.elsebaei@science.tanta.edu.eg);<sup>b</sup> [mohammedelnaggar@science.tanta.edu.eg](mailto:mohammedelnaggar@science.tanta.edu.eg)**Abstract**

The thermal performance of a finned single basin solar still was investigated experimentally and theoretically using finned basin liner made of different materials such as aluminum, iron, copper, glass, stainless steel, mica and brass. The theoretical model was validate experimentally with a finned basin liner made of copper as example. The year round performance of the still in terms of the monthly average of daily productivity and efficiency was performed. Furthermore, the year round productivity was employed to calculate the cost of one liter of the produced fresh water. The results were indicated that the price of 1 (L) of fresh water equals 0.28 and 0.31 (LE) for the still with and without copper fins. It was also inferred that the fin material did not affect the still productivity. For finned basin liner made of glass and mica, it was found that the price of 1 (L) of fresh water was found to be 0.21 and 0.20 (LE),

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