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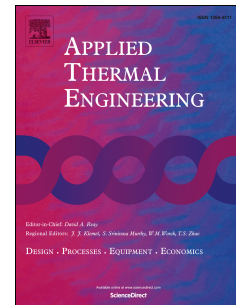
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Abstract

The performance characteristics of a new type of cooling tower, which is called water-jet cooling tower, is analyzed using experiments and numerical simulations. The water-jet cooling tower would be designed as a modified wet cooling tower, operating without fill and fan. A comparison of the water-jet cooling tower test results with those of the model simulation has demonstrated the validity of that simulation and its use as a design tool. For the preliminary study, we chose tower spray zone height (H), water to air flow rate ratio (L/G), droplet diameter (d_d), discharge droplet velocity (v_d), and air velocity (v_a) as the variation parameters. The results indicate that exergy values and 2nd law efficiency are normally sensitive to reasonable variation in d_d , L/G and H , but do not respond greatly to reasonable variation in v_d , and v_a . It is also found from the present calculation that the

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