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SCIENTIFIC & RESEARCH PROJECTS

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Project Title:

A New Algorithm for Optimum Design of Mechanical Draft Wet Cooling Towers

Abstract:

The present study describes the designing of a thermally and economically optimum mechanical draft counter-flow wet cooling tower. The design model allows the use of a variety of packing materials in the cooling tower toward optimizing heat transfer. The design model incorporated the cooling tower factors to achieve the optimum design. The main factors included: the diameter of the water droplets, the liquid to gas mass ratio, the height of rain zone, packing zone and spray zone, the air and water velocity inside the tower and the frontal area. Once the optimum packing type is chosen, a compact cooling tower with low fan power consumption is modelled within the known design variables. The optimization model is validated against a sample problem. The suggested design algorithms of cooling tower are computed using Visual Studio Net 2003 (C++).