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**CFD study of heat and mass transfer and entropy generation in a 3D solar distiller heated by an internal column**
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**Abstract**
Three-dimensional computational analysis was performed to investigate the double diffusive natural convection inside a cubical solar distiller heated by a square-shaped column. Governing equations were developed using the 3D vector potential-vorticity and solved using the finite volume method. Different governing parameters, i.e., Rayleigh number 10 3 ≤ Ra ≤ 10 5 , buoyancies ratio −10 ≤ N ≤ 10, geometrical parameter 0.1 ≤ L h ≤ 0.7 for Le = 0.85 and Pr = 0.7 corresponding to humid air, were tested. It was found that both heat and mass transfer are strongly affected by the change of buoyancy ratio, geometrical parameter and Rayleigh number. © 2019 Elsevier Ltd

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