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Experimental and Numerical Analysis of the Influence of Inlet Configuration on the Performance of a Roof Top Solar Chimney

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Graphical abstract



Four different configurations of collector inlet of a Roof top solar chimney have been investigated experimentally and numerically. The results demonstrated that configuration 1, with vertical cross section is superior compared to the other types. The CFD simulation showed that the air particles are moving from the upper zone and inters to the collector passage. Hence, it is recommended for any solar natural convection air heating system to be designed with vertical cross section inlet

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