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Comprehensive review of key parameters for improving the performance of Solar Air Heaters

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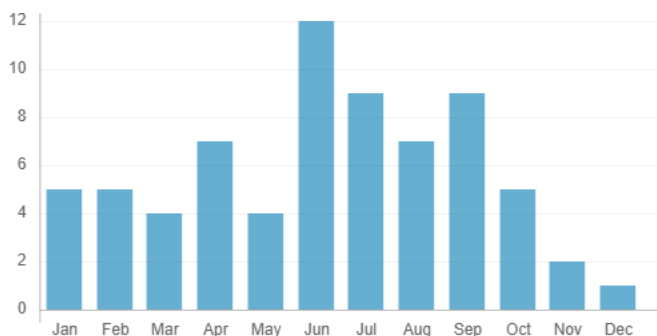
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ABSTRACT

Due to declining supplies of once-affordable fossil fuels, research into renewable energy sources is being prioritized. Using solar energy for passive cooling and heating can significantly reduce the demand for primary energy sources. In this survey, we look at how changing a few variables might affect how well a solar air heater functions. It helps researchers learn more about these systems' development, properties, and potential uses. This research analyses the current literature to emphasize the value of thermal properties. Focusing on laminar sublayer creation and increasing the heat transfer coefficient, it explores ways to increase the efficiency of solar air heaters. After reviewing several articles, it has been determined that rib roughness elements and their geometric characteristics play a significant role in enhancing the thermal performance of solar air heaters. The relative roughness height, pitch, angle of attack, and width are all important factors to consider.

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