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SOLAR SYSTEMS FOR WOOD DRYING

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Abstract

Drying wood requires a significant amount of thermal energy, in order to heat-up wood and evaporate the water inside it. Therefore, solutions to minimize this consumption are a topic of maximum interest for wood-processing industries. Employing solar power for drying wood is not a novelty, considering that this possibility was already acknowledged at the end of the 17th century, but since then, kiln design was significantly improved, once with the progress of knowledge regarding the mechanism of water removal from wood and with the progress of technological facilities to capture and store this source of energy. The present paper gives a synthetic overview regarding the basic concepts in solar kiln design, the performances of solar systems developed so far worldwide, as well as some experimental results regarding construction details for one of the main parts of the solar dryer, namely the solar energy collector. The paper concludes with some recommendations of interest for the industrial practice.

Key words: drying, glazing, kiln design, solar energy collector, solar power

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