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Modeling and Calculating the Double Channel Helio-Collector for Drying Agricultural Plant Materials



Boris Kotov^{ID}, Yuriy Pantsyr^{ID}, Ihor Garasymchuk^{ID},
Iryna Semenyschyna^{ID}, Pavel Potapsky^{ID} and Taras Hutsol^{ID}

Abstract The analysis and synthesis of mathematical model of double channel heliocollector to heat air as drying agent during drying agricultural crops and materials were made. The simulation of thermal processes for the quasi-stationary mode of the collector was carried out. The analytical dependences of the degree of air heating and the coefficient of efficiency from the regime parameters were obtained. Data matching temperature distribution in the direction of the coolant and collector efficiency depending on the profile, determined little difference theoretical and experimental data (error is 5%).

Keywords Solar collector · Heating · Air · Air channels · Drying

B. Kotov · Y. Pantsyr · I. Garasymchuk · I. Semenyschyna · P. Potapsky · T. Hutsol (✉)
State Agrarian and Engineering University in Podilya, Str. Shevchenko 13,
Kamianets-Podilskyi 32300, Ukraine
e-mail: pro-gp@pdatu.edu.ua

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