

Mathematical Modelling of the Process of Oscillating Infrared Drying of Seeds

G. A. Zueva, S. P. Rudobashta, N. A. Zuev

*Ivanovo State University of Chemistry and Technology, Ivanovo;
Russian Timiryazev State Agrarian University, Moscow*

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Abstract: The paper describes a mathematical model for drying of a damp plate (or a bed of a dried-up material), in which the supply of energy for drying is carried out by means of an electromagnetic field variation. In this model the mass exchange is presented on the basis of a known analytical solution of a mass conduction problem, and heat exchange is given on the basis of an analytical solution of the problem of interconnected heat and mass exchange. By means of numerical calculations the dynamics of oscillating infrared heating a plate (layer of dried-up seeds) in the conditions of drying has been analyzed.