

Photothermal Techniques Applied to the Determination of the Water Vapor Diffusion Coefficient and Thermal Diffusivity of Edible Films

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Water vapor diffusion coefficient (WVDC) and thermal diffusivity (α) were determined in gelatin-starch films through photothermal techniques. The effect of different variables in the elaboration of these films, such as starch and glycerol concentrations and pH, were evaluated through the response surface methodology. The results indicated that an increase in the glycerol concentration and pH favored the WVDC of the films. On the other hand, α was influenced principally by the starch content and pH of the film-forming solution. The minimum α value was 4.5×10^{-4} cm²/s, which is compared with α values reported for commercial synthetic polymers.

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