



BUILDING AND SOLVING THE HEAT TRANSFER MODELS TO DETERMINE SUITABLE FRYING CONDITIONS FOR INSTANT NOODLES

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ABSTRACT

The purpose of this study is to build a mathematical model of unstable heat transfer describing the frying process of instant noodle products, and this unstable heat transfer mathematical model was solved to determine the relationships between frying temperature and radius of fried noodle strands, between frying temperature and frying time. The obtained results were then used to simulate the frying kinetics, establish the frying conditions for instant noodles, and could be used to design instant noodle frying equipment. The results of solving the mathematical model established the frying conditions for instant noodles as follows: instant noodle strands had a radius of 1 mm, frying temperature was 150 °C in oil, and frying time was 90 s. At these conditions, experimental results confirmed that the temperature of frying noodles reached 150 °C, and the moisture content of the fried products was satisfactorily 1.8 %; the fried noodles were crispy with a beautiful yellow color, the reconstitution ability in boiling water was significantly improved.
