

Drying is one of the oldest, cheapest and most commonly used methods for preservation of food stuffs and agricultural products. The most commonly used technology is convection drying. In most drying applications convection dryers are working with thermal energy that transforms water to vapor which is removed by air.

The glory days of drying technology development took place in the 1980s when control technology started to digitize. The drying parameters of this complex process with heat and mass flow were investigated via experiments. The consequences were reduced energy efficiencies, inadequate product qualities and longer drying times.

The topic of this thesis is the conception of a single layer convection dryer and the development of a model of the dryer and the drying product based on the PhD thesis of Mrs. Dr. Nuñez Vega. The dryer works with food products. Another topic of this thesis is to choose appropriate sensors, actuator, control unit and process controlling software.

This thesis is a part of a research project that aims to create an adaptive control system with a reference model.