

Protein Denaturation

A kinetic model of protein denaturation was created using the Kinetics Neo software based on differential scanning calorimetry (DSC) measurements. This model is used to simulate the denaturation process of a protein in an egg when immersed in boiling water. The egg was exposed to 100°C for eight minutes, then transferred to air at 25°C.

This simulation shows that the protein denaturation continues in the middle of the egg in air. The simulation presents the temperature (figure 1) and degree of denaturation (figure 2) as a section map after 4 minutes and as the function of time at different radial distances at an egg height of 50%.

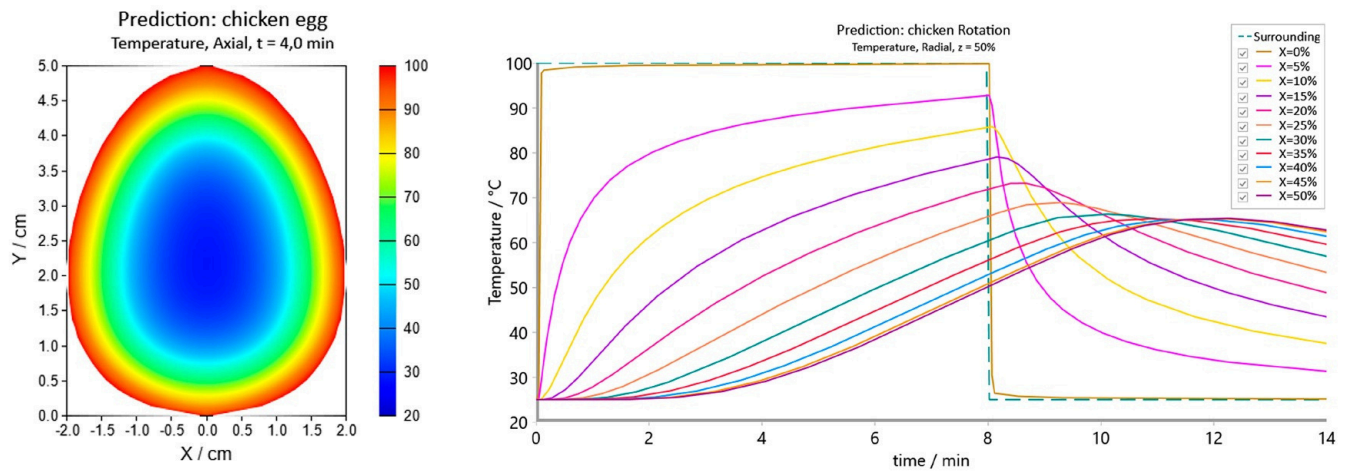


Figure 1: Simulation of the temperature in vertical cross-section and radial direction.

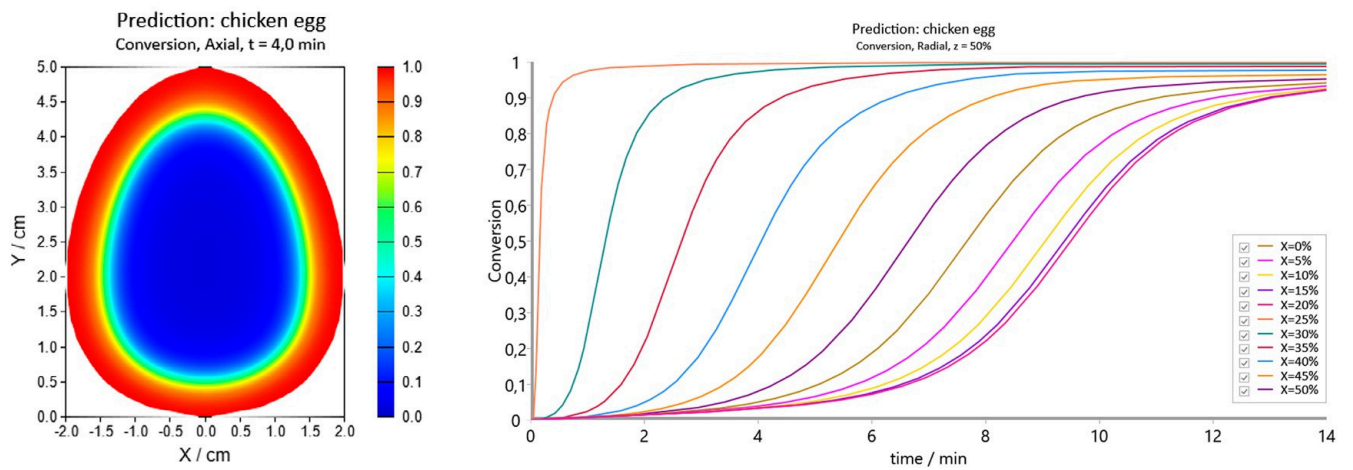


Figure 2: Simulation of the conversion in vertical cross-section and radial direction