

PATENT AWARD

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Industrial Microwave Systems

A Microwave Techniques Company



Thermal Gelation of Foodstuffs and Biomaterials Using Rapid Heating

The invention uses rapid heating to effect a material property change in a biomaterial. The biomaterial is heated to a predetermined real temperature, whereas the biomaterial's total thermal treatment is described by an equivalent temperature and an equivalent time defining a point above a minimum gel set temperature line, above a reduction in bacteria line, below a water loss line, and below a maximum gel set temperature line. According to one aspect of the invention, the biomaterial is heated by exposing the biomaterial to a relatively uniform electric field. The material is heated to a predetermined temperature for a predetermined time in order to achieve a food product characterized by a preselected refrigerated shelf life of from about two weeks to about forty-two weeks. The food product may be packaged prior to the microwave exposure so as to sterilize the packaging and decrease product loss.