

Corrector Packaging for Heating inside a Domestic Microwave Oven

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In this paper, we demonstrate that an adapted packaging improves the microwave cooking. The electromagnetic and thermal functions of the packaging are studied. This applicator is constituted of a slot array or a metallic bar array which is positioned on a metallic box filled with an alimentary product. The slot array purpose is to homogenise the power distribution inside the metallic box and to minimise the coupling degree between the product, the microwave oven and the generator. It is possible to control the electromagnetic fields by means of the packaging that becomes a second oven in the first oven. In this case the field calculation is realised by the Finite Element Method. We have calculated the width of the slots, the distance between them and the height of the slot array in relation to the product according to the following criteria: Electromagnetic fields inside the product should be uniform and independent of the fields in the oven, the input impedance of the cavity should be constant wherever the position of the product in the oven.