

# NON CONVENTIONAL PROCESSING TECHNOLOGIES FOR FOOD APPLICATIONS

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**Abstract:** There is an increasing consumer demand for safer, higher quality and healthier food products. These requests together with the severity of the traditional food processing technologies are the driving force for the improvement of existing technologies and the development of new ones.

New (and not so new) food processing/preservation technologies, such as ionization, high pressure, microwave and ohmic heating and electric fields application, that aim at responding to the increasing consumer demands, namely microbial inactivation and high quality products, will be addressed. The effect of the technology on main food constituents and its relation with the organoleptic and nutritive properties of the food products will be presented as well as its importance on the microbial inactivation and production of metabolites.

The impact of capital as well as operating costs will also be evaluated as these are a key element in the cost of the product and, consequently, in the consumer acceptability. Also, the environmental impact of the new process will be discussed.

The presentation of these food processing technologies will be divided in two main groups: those where heat is not supplied to the food (ionization and high pressures) and those where the heating process is different from the conventional one (microwaves, electric fields and ohmic heating). A particular attention will be paid to the application of electric fields and ohmic heating.