

Food electrical properties investigation and application

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Recently, increasing consumer demand for healthier foods has triggered the development of foods made with natural ingredients exhibiting functional properties and providing specific health (Ingle et al., 2017). Foods are a heterogeneous, hygroscopic natural materials that absorb moisture from the environment. Water plays a central role in food research since it affects all material properties relevant to the food quality.

Dielectric properties of various agri-foods and biological materials are finding increasing application, as fast and new technology is adapted for use in their respective industries and research laboratories (Venkatesh, Raghavan, 2005).

Electrical properties are also important at the sustainable control of food preparing and processing. Electrical properties of various agricultural products and food measurement is used to determine different parameters, mainly the moisture content, and also chemical components, germinability of seeds and grains or the resistance of fruits to frost (Khaled et al., 2018, Justicia et al., 2017).

Behaviour of any material in the electric field is unique, because of the unique molecular structure of each material which determine its quality. In case of food products, it is closely related to their commercial and nutritional values. The electrical properties describing each complex material (consisting of various substances mixed in different proportions), may provide information about its quality (Skierucha et al., 2012).

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