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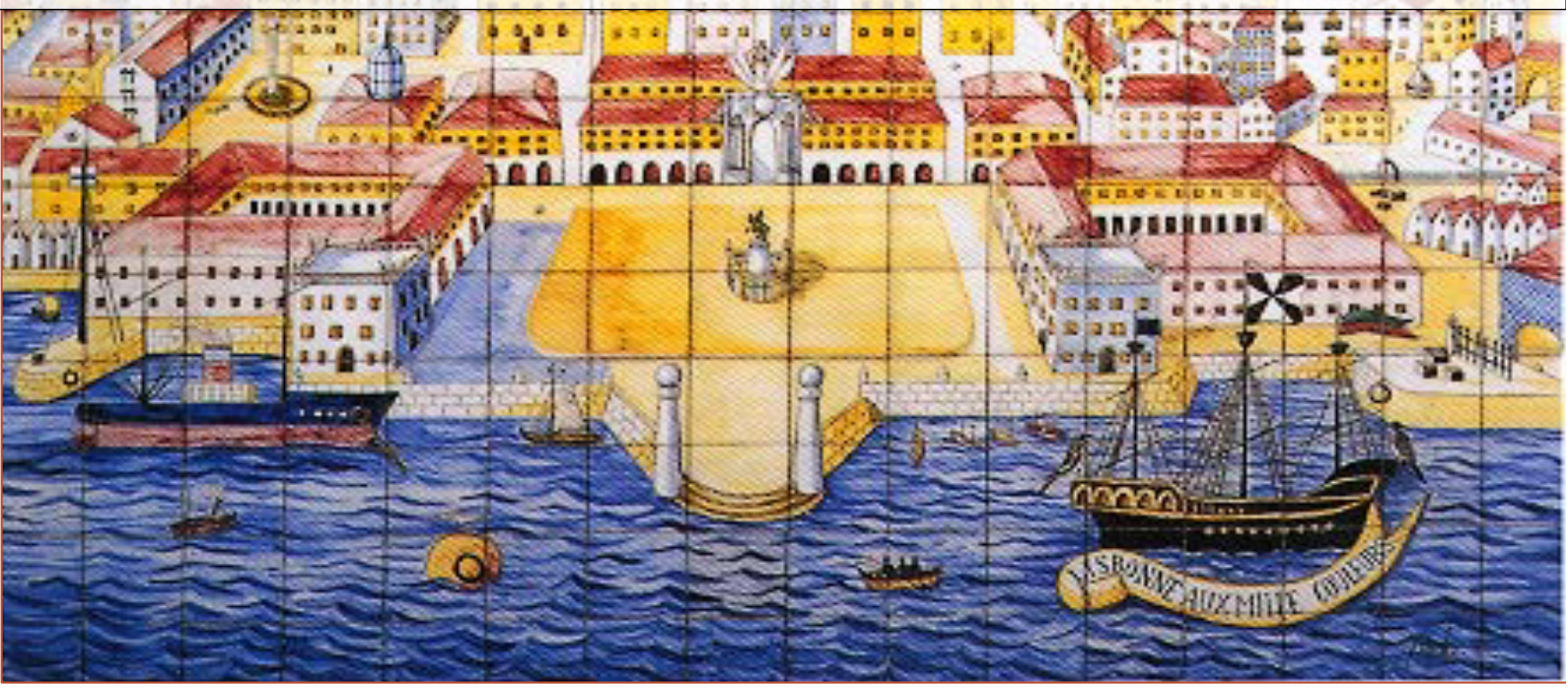

BOOK OF ABSTRACTS

TECHNICAL INFORMATION

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Raman measurements on gamma irradiated chestnut fruits

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Irradiation for food preservation is on use in several countries for different types of foods: fish, meat, vegetables, etc., with its application accepted and regulated by national and international food safety agencies [1]. In this work, Raman scattering measurements were performed on non-irradiated and gamma irradiated chestnut fruits at different irradiation doses (1, 2 and 5 kGy), identifying the peaks associated with main molecular structures present on chestnut fruits [2]. The intensity ratios of relevant peaks were used to correlate the obtained results with the dose and/or variety. From the spectra analysis it was possible to conclude that some molecular structures were affected by radiation, observing that bending modes and stretching modes of O – H and C – H bonds have a correlation with irradiation dose. In particular, for disaccharide molecules, such as sucrose, radiation could break glycoside bond, leading to the increase of fructose and glucose, which is in accord with previous chemical analysis for the effects of irradiation processing on chestnut fruits [3]. With the obtained results, following the appropriate peaks of Raman spectra for irradiated fruits, it was possible to identify chestnut fruits variety and, furthermore, discriminate irradiated from non-irradiated samples.

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