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### Biography

Luis Guido has completed his PhD in Analytical Chemistry from University of Porto (2004). He is Assistant Professor at the Faculty of Sciences, University of Porto, since 2004. He has published more than 40 papers in SCI indexed journals and 2 book chapters. He is reviewer for more than 10 peer-reviewed journals and editorial board member of several journals.

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## USE OF GAS CHROMATOGRAPHY- MASS SPECTROMETRY FOR DETERMINATION OF CHEMICAL MARKERS OF BEER AGING

**B**eer stability is a major concern for the brewing industry, as beer characteristics may be subject to significant chemical changes during storage. A variety of flavors may arise, depending on the beer type and the storage conditions. This work aims at evaluating the impact of storage conditions, mainly the temperature and oxygen, on beer off-flavours development. The profile of some volatile compounds, such as phenylacetaldehyde, phenylethyl acetate and ethylphenyl acetate, responsible for the development of sweet and honey like flavors, has been monitored throughout natural (20°C) and forced aging (37°C). Beers maintained at 4°C have been used as controls. The effect of the total oxygen content has also been investigated. The flavor stability of beers has been further evaluated by a well-trained sensory panel, and the sensory data was compared with the volatile compounds profile. Phenylethyl acetate proves to be a better chemical marker of temperature than phenylacetaldehyde. During storage at 20°C, an increase up to 6-fold was observed for the phenylethyl acetate content. On the other hand, phenylacetaldehyde can be considered the best chemical marker of the presence of oxygen during storage at 20°C, as an increase up to 12-fold of the initial concentration was observed.

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