Abstract

Non-intrusive, *in-vivo*, real-time measurements of oxygen contents and oxygen diffusion in fruits using a laser spectroscopic technique are presented, where the narrow , distillation features due to the free gas in pores in the fruits are observed. The technique is referred to as gas in scattering media absorption spectroscopy (GASMAS), and is performed using tunable than, lasers. In particular, assessment of oxygen transport in apples and oranges is demonstrated. To illustrate the possibility to use the technique for studies of modified atmosphere packaging processes, measurements on scaled horticultural produces were performed. Furthermore, preliminary studies of avocados concerning the possibility to non-intrusively determine the maturity of fruits are presented. This technique has substantial potential for the development of compact devices providing new types of information in postharvest fruit management.