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Authors: C. Cejudo Bastante, L. Casas Cardoso, C. Mantell Serrano, E.J. Martínez de la Ossa

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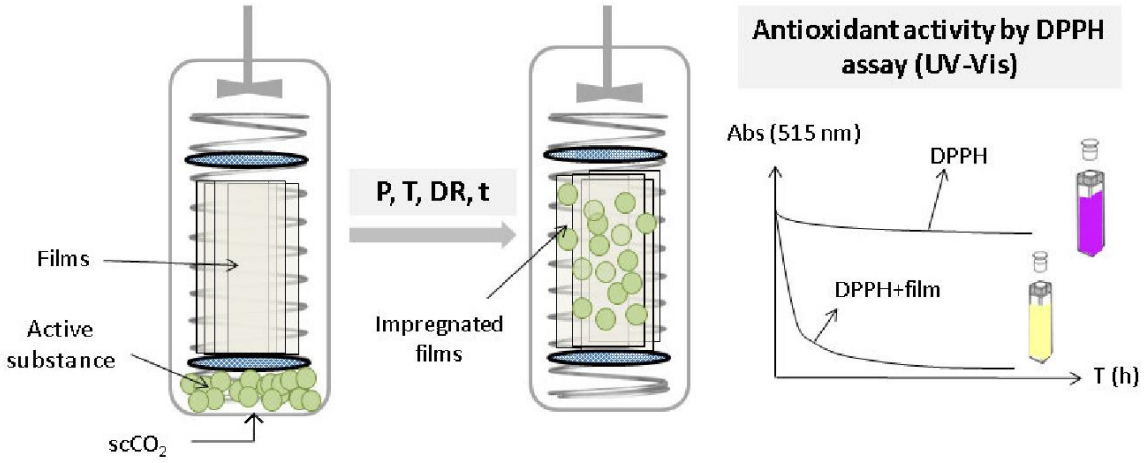
Supercritical Impregnation of food packaging films to provide antioxidant properties

C. Cejudo Bastante*, L. Casas Cardoso, C. Mantell Serrano, E.J. Martínez de la Ossa

Chemical Engineering and Food Technology Department, Wine and Agrifood Research Institute (IVAGRO), University of Cadiz
Avda. República Saharaui, s/n, 11510 - Puerto Real, Cádiz (Spain)

*corresponding author: Cejudo Bastante, Cristina. cristina.cejudo@uca.es

Graphical abstract



Highlights:

Antioxidant films for an alimentary use have been obtained by SSI.

SSI is an intricate process and all the variables involved need to be studied.

Impregnation yield increased when olive leaf extract was used as active substance.

ABSTRACT

Among the different techniques employed to develop active packaging, supercritical solvent impregnation (SSI) of natural extracts is an innovative approach. When developing a method to obtain polyethylene terephthalate/polypropylene (PET/PP) films with antioxidant capacity, several parameters (pressure, temperature, depressurization rate, presence of modifier and time) were studied with caffeic acid as a model substance. The best conditions were applied to an olive leaf extract as a natural extract with antioxidant properties. Antioxidant activity was evaluated by the