

Tin Oxide Multisensor for Detection of Grape Juice and Fermented Wine Varieties

Isabel Sayago*, María del Carmen Horrillo, Luis Arés, María Jesús Fernández
and Javier Gutiérrez

Laboratorio de Sensores, Instituto de Física Aplicada (CSIC)
Serrano 144, E-28006 Spain

(Received September 24, 2002; accepted January 22, 2003)

Key words: multisensor, volatile organic compounds, wine phases, grape juice and fermented wine

A tin oxide multisensor was applied to discriminate between grape juice and fermented wine phases corresponding to different wine varieties. The tested samples belonged to Albillo, Garnacha, Malvar and Tinto Fino varieties produced in the Madrid area. Garnacha and Tinto Fino are red wine varieties and Albillo and Malvar are white wine ones. The response of multisensors was tested in the temperature range of 250–350°C. The maximum responses are reached at 300 and 350°C depending on either the sensor type or the analysed sample variety. At these temperatures, the sensor response to red wines is higher than that to white wines. In all cases, the response to fermented wine was always better than that to grape juice. The detection of the present volatile organic compounds (VOCs) was useful to distinguish between the two wine phases (grape juice and fermented wine).

*Corresponding author, e-mail address: sayago@ifa.cetef.csic.es