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APPLICATION OF A TRANSMITTANCE ON SEPARATION OF GLASS CONTAINERS

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Abstract

Considering that glass containers are generally highly transparent they are good candidates for spectroscopic measurements and application of a transmittance for glass separation. The selection of glass container samples directly from municipal waste disposal bins, characterized by different colors, thicknesses, and shapes was done. Transmittance spectra of clear, green, amber and black clean glass containers were recorded, along with spectra of the usual bottled liquids. Positions of the absorption maxima enable separation of the glass containers based on their colour, using the successive testing at selected wavelengths. Two theoretical algorithms were developed for colour recognition, based purely on glass containers transmittance spectra. Values of transmittance (at the wavelength regions used in separation algorithms) for investigated glass containers and investigated liquids, has revealed that residuals of liquids would have a great impact on glass containers separation process, based on transmittance.

Keywords: glass recycling, transmittance spectroscopy

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