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COLOURS DISTRIBUTION IN POLYMER WASTES AND COLOUR PREDICTION OF RECYCLED POLYMERS

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Abstract

In this paper, several image analysis techniques have been applied aiming to obtain useful information regarding the processing of municipal solid waste polymers. An automated colour extraction method has been applied in order to quantize the colour distribution in the polymer wastes aiming their resource and time-efficient separation according to their colour. Also, by processing different density fractions from the polymer waste the colour of the final material has been predicted, as well as the potential degradation of the material in the processing conditions used in the study. The image analysis techniques used in this paper could complement other polymer characterization techniques and could lead to an increase in the efficiency of waste recycling management by efficiently planning-ahead of the processing parameters and of the raw materials used (dyes, pigments).

Key words: colour distribution; image analysis; polymer composite; polymer waste; separation

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