DESIGN OF VIDEO SPECTROSCOPY - NEURAL NETWORK TO IDENTIFY TYPE OF DILUTION

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ABSTRACT

Spectroscopic methods have been widely used to determine the elements contained in a liquid with a way to spend the light in the liquid. Any liquid that is identified will show a typical spectrum of colors. The use of photodiode array to identify the color spectrum obtained constraints in determining the distance between the diode. In this study used a video camera to receive the results of the color spectrum of light dispersion. Image of the color spectrum histogram RGB calculated value. Neural Network by using this histogram can be used to identify the types of liquids. Typical color spectrum for each sample. In this study sample used was packaged mineral water, lemon vitamins, vitamin orange, orange water and frestea green. Testing and identification of types of liquids has been carried out and managed to identify 5 types of liquids and liquid type 1 varied viscosity level. System identification using artificial neural net learning methods of propagation through a 765 input, 1 hidden layer 32 neurons and 3 output is trained to recognize patterns of response histograms from 5 samples. The success rate for identifying the types of liquids 91.42%. As for the samples varied levels of success viscosity level of 80%.

Key word: Spectrum, colour spectrum, video spectroscopy, neural network, spectroscopy, histogram