ORAL PRESENTATION

Determination of pH Value Using Conventional pH Strips by Image Processing

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Abstract

Determination of pH value is considered to be a critical measurement utilized in a large number of applications. It is mainly used to evaluate the acidity of aqueous solutions in order to classify them as acidic or alkaline. There are several pH measurement methods. The most conventional and widely utilized method is the use of pH strips. While they have a lower level of precision than pH meters, they are known to be an economical and affordable measurement method to be used by non-experts users. The major drawback of this method is the large possibility of having scientific errors due to the limited ability of human eyes in precisely reading the strip's value, especially when highly accurate results are required. However, the availability of advanced technology and mobile phones nowadays provides a great advantage to overcome this challenge. For this purpose, a literature review was conducted about utilization of image processing in determining the accurate pH value from reading pH strips; by taking a picture of it using a mobile phone camera and analysing the color differences. Many researchers reveal that it is possible to determine the pH value by comparing the color of the strip with the reference solutions associated with the pH levels. Each researcher used this method for determining pH value for a specific substance. Our goal is to investigate the most recent applications that determine the pH value of solutions from the pH strips, providing essential information for researchers that aim to develop a mobile application regarding the determination of the pH value.

Keywords: Conventional pH strips, Image Processing, Mobile Phone, Artificial Intelligence