

The development of low cost turbidimeter using smartphone camera and image processing

ABSTRACT

In this paper, the design fabrication and development of a low-cost turbidimeter with a smartphone camera and image processing are demonstrated. The turbidimeter serves as a simple and low cost alternative to professional standard turbidimeters as well as other proposed turbidimeters presented in other studies. This turbidimeter is made from affordable and widely available materials and electronic components. The proposed turbidimeter was tested and able to determine the turbidity of Formazine samples between 0 and 100 NTU with the coefficient of determination $R^2 = 0.982$. The overall cost of this turbidimeter is only USD4.35, which is well below the cost of other proposed turbidimeters

Keyword: Turbidity; Water quality; Smartphone; Greyscale; Image processing