

## DESIGN OF IDENTIFICATION SYSTEM FOR RED AND WHITE MERANTI USING COLOURS DETECTION METHOD

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### ABSTRACT

Development technology of computer programs caused to produce novelty from the development of these technologies. Besides to education, the development of technology can be utilized in working, even all. Digital image processing is a part the development of it. This research develop of identification system of red and white meranti by using color detection method. The program used in this research is a Matlab program. In this research, database made by 25 pieces red meranti and 25 pieces white meranti. Image of woods captured side by side using webcams. Then taking the values of primary colors RGB (red, green, blue) to be used as database. Identification system will test 5 times for every red and white meranti with different positions. Success rate of identification system red and white meranti using color detection method is 90.83%.

**Keywords:** identification system, image processing

### 1. INTRODUCTION

The development of computer technology is caused to produce something new from the improvement of these technologies. In addition of education, the development of technology that can be utilized in the domain of work, even all fields. Digital image processing is part of the development of these technologies.

Image processing technology is currently growing very rapidly. This development is supported by advances in computer vision applications and image processing that has been developed at this time, for example in the system of separation or sorting system.

Image processing is one of technology to solve problems in identification, as well as for increasing the quality of the appearance of the image to be more easily interpreted by the human visual system either through manipulation and also analyzing the image.

Using the digital image processing techniques, we can use the webcam as a medium for capturing images that will be detected side. Besides webcam also serves as a replacement for

one of mankind's ability to emulate, namely sight. In the image processing system is used as a camera makers image data and then processed using a computer or laptop.

Image (image) is a two-dimensional image. As output image capture device, such as a camera, can be analog or digital. Analog image is an image that is still in the form of analog signals, such as a captured image by the camera or image display on the TV screen or monitor (video signal).

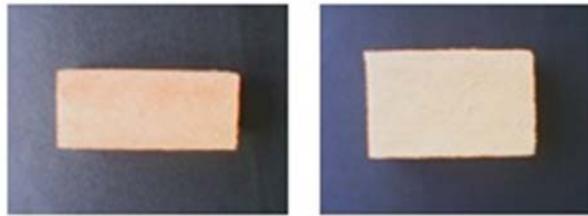
Digital image is a representation of 2-D arrays of discrete samples of a continuous image  $f(x, y)$ . The amplitude of each sample in quantization to declare numbers to bits. Each 2-D array element is called a pixel samples or mop (from the term "picture element") Digital image processing is digital image processing with computer aids.

Fig.1 is an image of red meranti and meranti white image. The image can be categorized into two, namely the still image and a moving image. CITRA silence is a single image that are not moving. Still image was like when we take a picture, the result of the photo also includes a still image. Henceforth, we can call the still image with the image alone. Moving image

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(moving images) is a series of still image is displayed in a row so as to give the impression in our eyes as a moving image. Each image contained in the series called frames. Pictures that appear on a movie or television is essentially composed of hundreds to thousands of frames.



**Figure 1.** The image of red and white meranti.

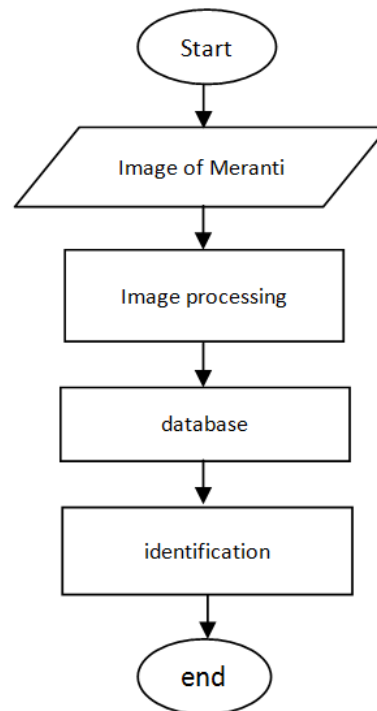
Digital image acquisition can be done directly from the digital camera or perform the conversion process an analog image into a digital image. To change the image into a digital continuous manufacturing process required grille horizontal and vertical directions, so that the image obtained in the form of two-dimensional arrays.

This process is known as the process of digitizing / sampling. Although an image has a lot of information that is contained in them, but often the image that we have experienced a decline in quality (degradation), this is due to several factors such as flawed or noise (noise), the color is too much contrast, less sharp, blur (blurring), etc. The image that has poor quality becomes more difficult to interpret because the information conveyed by the image to be reduced. To overcome this, the image needs to be manipulated to be the image has better quality.

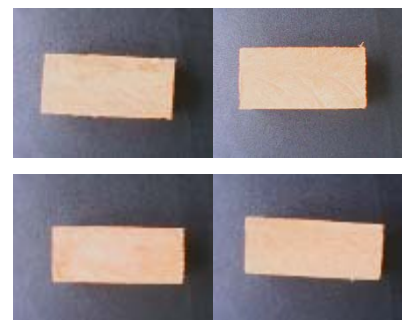
## 2. METHODOLOGY

In this scheme, the identification of red meranti and meranti white using the detection method. Overall the study flow diagram is shown in Figure 4. Capture red meranti and meranti white are taken from four sides which the top, the bottom, the right side and the left side, to be used as a database. The image of red meranti and meranti white is not obstructed by other objects, in order not to interfere with the output value. Meranti be placed right under the web camera on a flat desk with contrasting black pads for avoiding the amount of reflected light when the image capture. Format of the image in this study

are bmp file (bitmap). Image (image) must have a good image quality. Therefore, there are several key parameters that must be observed as light and object distance to the webcam.



**Figure 4.** Flowchart of research



**Figure 5.** The top, the bottom, the right side and the left side.

## 3. RESULTS AND DISCUSSION

Testing was conducted by detecting the image of red meranti and meranti white, this testing aims to detect objects red meranti and meranti white which will can be determined the type of object being identify. Testing for each wood performed 5 times.

**Table 3.** The results of the identification

Object	Identification	(%)
	Red Meranti	100
	Red Meranti	80
	Red Meranti	100
	Red Meranti	100
	Red Meranti	100
	White Meranti	100
	White Meranti	100
	White Meranti	60
	White Meranti	100
	White Meranti	80

The results of of identification of red meranti and meranti white shows the percentage of of success obtained

$$\frac{\text{Success}}{\text{Total}} \times 100\% = \dots\dots \%$$

$$\frac{436}{480} \times 100\% = 90,83 \%$$

Results from the 480 tests conducted found as much success as the amount of 436, the percentage of success achieved is 90.83%. The results of of this research showed that red meranti and meranti white can be identified using color detection with good results.

#### 4. CONCLUSION

The conclusion of this research are as follows:

1. Successfully created a system of of identification of red meranti and meranti wood white.
2. Successfully implement digital image processing technology detection method based color RGB (red, green, blue) on the system of identification of red meranti and meranti white.
3. Testing of identification of red meranti and meranti white with color detection method has the success rate of 90.83%.

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