Abstract

Colors are important for human communicating with the daily encountered objects as well as his species, these colors should be represented formally and numerically within a mathematical formula so it can be projected on device/ computer storage and applications, this mathematical representation is known as color model that can hold the color space, by the means of color’s primary components (Red, Green, and Blue) the computer can visualizes what the human does in hue and lightness. In this work a review of most popular color models are given (which are RGB, CMY, HSV, and YCbCr) with the explanation of the components, color system, and transformation formula for each other, application areas and usages are also included. Comparison between these different color models is performed by applying Signal to noise Ratio (SNR) metric to indicate the best color models. Results analysis shows the RGB has better results according to SNR measure.

**Index Terms**

Computer Science  
Image Processing

**Keywords**

Color Model, RGB, CMY, HSV, YCbCr, skin color detection, segmentation.