

Abstract

The visual acuity test is a routine part of an eye examination or general physical examination, particularly if there is a change in vision or a problem with vision. In most places, Snellen chart is used to test visual acuity in human. Snellen chart relies on viewing the letters or symbols from a certain distance, usually 20 feet away. Human visual acuity is then determined by the smallest letter on the chart he/she is able to identify from that viewing distance. This testing method requires a room with enough viewing distance. As the advent of new technology, computerized visual acuity test has been proposed and used in some clinical places. We propose an innovative media to measure visual acuity in human. A hybrid image is an image that changes its meaning according to the viewing distance. It is an image composed of two different spatial frequencies; high and low spatial frequency. Based on the contrast sensitivity function, the best viewing spatial frequency is changed by the viewing distance. With this assumption, we propose the use of hybrid image as a tool to test human visual acuity. From the experiment, it was found that the hybrid images can discriminate between patient with problem in vision and patient with normal vision with significant difference.