

Vision Rehabilitation, Prosthesis Eye

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Abstract - this paper content the rehabilitation concept for prosthesis eye by using camera convert the visual optical signals in electric signals & by pass the defective human eye of a blind person & transmit the signals to optical nerve, by which a blind person can see same way as a normal person can see.

Keywords- prosthesis eye, vision rehabilitation , eye rehabilitation by using camera.

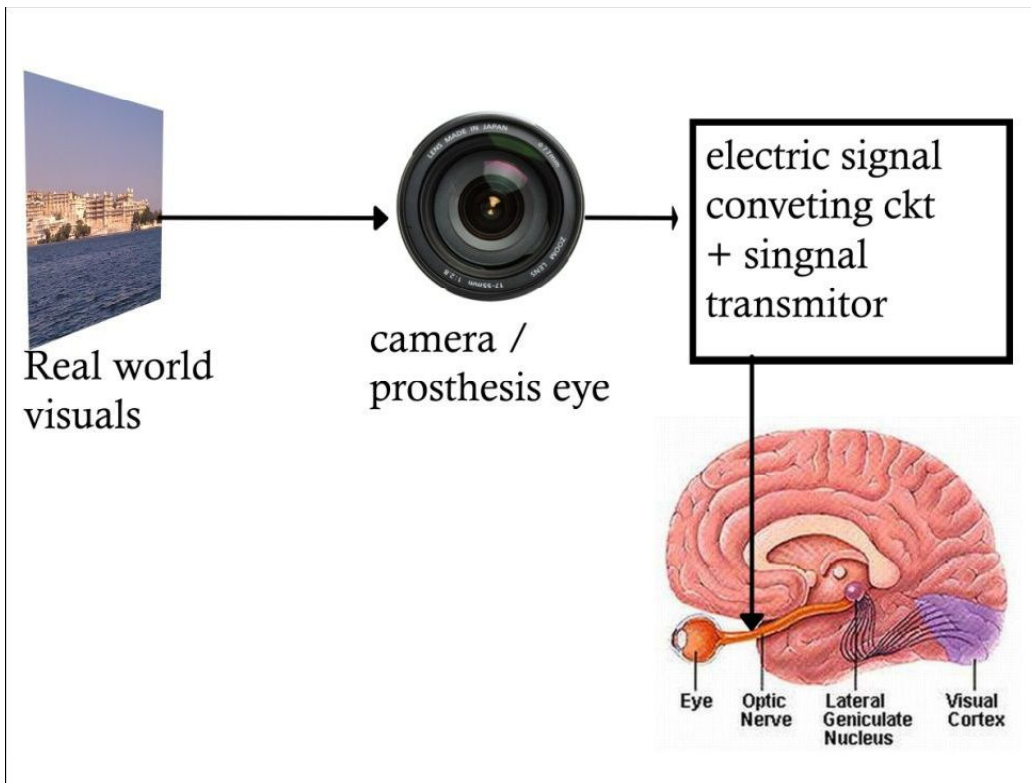
I. INTRODUCTION

Prosthesis eye is needed when a person cannot see due to defects in eyes. or the person is blind from birth & the natural eye do not work as per it need to work & the other augmentative devise also does not work for it. this concept of rehabilitation of eye can make blind people see same as the normal people see the world.

By using the camera optical signals get converted in electric signals & the visual image is converted into digital electric signals. human eye also works same way & convert the optical signals of image to electrical signals & optical nerve receive this electric signals & get to the brain by network of neurons. which do communications wirelessly. the human brain read the electric signals & then one can realize the vision. & sense optically. So basically this visual rehabilitation concept is to bypass the natural eye & do same work with camera the camera convert optical image to electric signals. but the output of eye's natural electric signals is having lower frequency then output of camera's electric signals.

II. PROPOSED ALGORITHM

The optical signals get converted in to electrical signals by the camera & the output electrical signals get converted in the range & the frequency of optical nerve, the optical nerve will receive the converted signals which is same or near to natural signals which a normal person have in optical nerves , the optical nerve will receive signals by its neurons , the neurons are the main factor of wireless network of brain & nerve system. this optical nerve will send the signals to brain & brain will read the signals & the blind person can see as same image as a normal person .



Step 1- As shown above the block diagram shows that the real world visuals get to camera & get converted into optical signals to electric signals.

Step 2 - The electrical signals output of the camera get to the circuit which convert the electric signals in the frequency of optical nerve by which the optical nerve can receive this electrical signals.

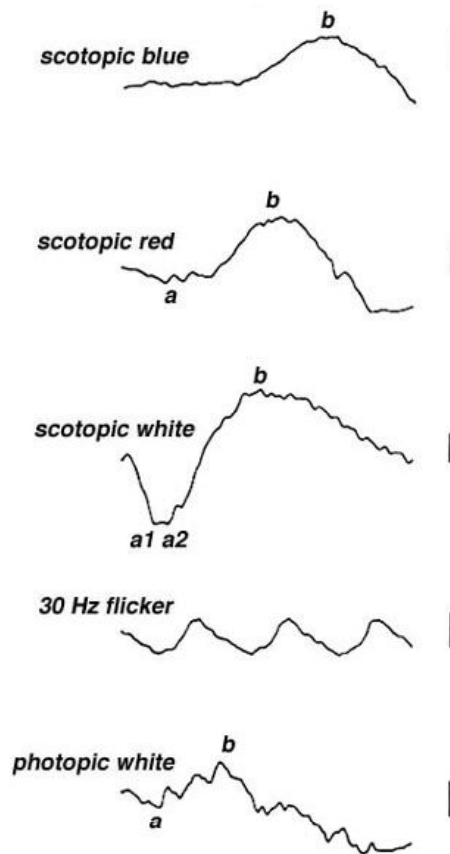
Step 3 - To transmit the electrical signals to optical nerve this transmitter will be on the eye because that is the only place which will not be blocked by the skull bone.

step 4 - The optic nerve will receive the electric signals of the visuals by the neurons in it. the neuron will act like an antenna & then send the signals to another neuron & keep pass on to brain. first to **lateral geniculate nucleus** & then the signals will went to **visual cortex** .& the person can see the visuals.

III. EXPERIMENTS & RESULTS

- 1) The expected result of this devise is that a blind person can see the same visuals as a normal person can see.
- 2) The output from the electrical signal converting circuit & the electrical signal transmitter should be as per this graph as shown below, the output can check by CRO .

if the signals can reach near to this signals the blind person can see if the transmitting



IV.CONCLUSION

Rehabilitation of vision can be done by using camera & electric signal control circuit & transmitter A blind person can see . & have same vision as a normal person have. & bypass the natural defective eye.

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