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Smart Adaptive Eyewear

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Submission Performa

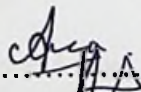
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This report is submitted as required for the Project in accordance with the rules laid down by the Bahria University as part of the requirements for the award of the degree of Bachelor of Engineering. I/We declare that the work presented in this report is my/our own except where due reference or acknowledgement is given to the work of others.

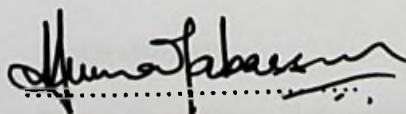
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Abstract

Smart Adaptive Eyewear is providing vision comfort to people with the help of shape changing technique of liquefied lens by the help of actuators. Eyeglasses adjust the focus of lens by its own and user adds the optical data through application. This project is for people who are facing refractive error problem. Problems include Hyperopia (far sightedness), Myopia (near sightedness), Presbyopia (lens can no longer can change their shape and cannot get focus to the vision), Astigmatism (vision distortion because of irregular cornea curve) and blur vision. One of the reason of having vision problem is loss in flexibility in eye muscles contraction and shape of lens that helps the lens in the eye to adjust the focal length for a particular object. Due to bimorph as frequently their bimorph changes. This project is delivering the frame with application through which user enters the optical data. Eyewear contains transparent silicon membrane, battery to provide power, microcontroller as main brain of device, piezoelectric actuators which are servo motors for the movement of lens and transparent glass which is piston to provide hydrostatic pressure in lens and make concave, convex shape of the membrane and as whole the device, it sense the distance and adjust according to the focal length and optical power of user.

Keywords

Adaptive, Smart glasses, Self-adjust eyeglasses

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