

Detection of Dry Eye In Human Using Humidity

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ABSTRACT

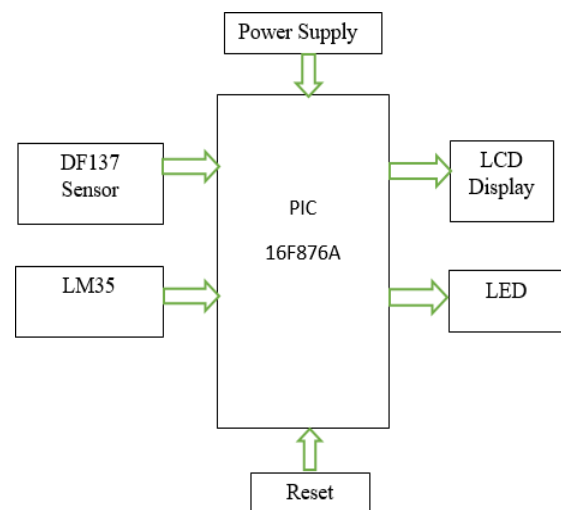
Dry eye is one of the greatest public eye related difficulty that affect due to deficiency in tear production. There are many faces that contribute to this disease such as ocular area and deficiency in tear productivity, age and gender, innermost environments, and computer visualization syndrome (CVS). The elements deal with eye dryness in the electrical modules are humidity and temperature sensors, and a microcontroller. The design at this stage is aimed to prove the humidification level in human eye. In addition, the use of microcontroller was considered to offer programmability for clinical studies and personalized eye care.

Keywords : Dry Eye, Keratoconjunctivitis Sicca, Sensors, Humidity, Temperature, Microcontroller.

I. INTRODUCTION

As we all know that human eye is very sensitive to the atmosphere that can attack bacteria and virus such that causes very dis-comfortness to the wellbeing. Major one of the common reason behind this is lack of tear in human eye that can be also called as keratoconjunctivitis sicca. As that the quantity and quality of tear will need to be assigned and to be calculated. We were using water or other medicinal droplets over the past few decades. The main problem occurs which is the irritations that can irritate the wellbeing in the society during their work. The person should attain constant irritations that will attain a high pain too. The persons will feel a sandy and gritty sensation that will effects in worrying and ulceration of the cornea in the eye if it is left untreated for several period of time. The treatment for the dry eye is very less such that applying artificial tear by providing eye drop supplementary. By this humidifier analysis we can

attain out the range of our level of dry eyeness such that evenly add the eye drops time to time.



Reducing the humidification which can reduce the dryness in the eye. By reducing that he or she can be able to work properly or more active in the society. Over stress which may also leads to this condition and strain over the display within a limited range of vision

which can be make dryness. The old peoples can be affected easily by which can affect the vision too. Sometimes hormonal imbalance also attacks these types of eye diseases. Such that vitamin A deficiency which would attacks the persons who have dry eye. The over usage of the computer can also form keratoconjunctivitis sicca such that the cooperate workers will affect this problem easily. The easy estimation of the dryness can achieve the less irritation and pain.

II. BLOCK DIAGRAM

DESCRIPTION

Microcontroller is the main unit for controlling the sensing module. It reads the ambient temperature level and humidity level. The recognizing module is associated with the microcontroller. The sensor which may consists of a thermistor and a capacitive humidity sensor with itself that helps out to observe easily and provides a reset button to reset the values and the LED alert for if the dryness is too high. The sensitivity of the sensor to temperature is 0.1 degree Celsius and to humidity level 0.1%. For everytwo seconds both the temperature and humidity levels are measured if it's been connected out over the area of eye.

Using the pic microcontroller optimum humidity can be displayed out with the sensor and the thermistor. Normally a person has 24-degree humidification and 30-40 % should be balanced tear production. The PIC microcontroller is used in this circuit and the other modules are connected to it. The humidity (HR202L) sensor and temperature (LM35) sensor are connected to the main control unit which helps out easily placed in the area of eye and the temperature and humidity levels are measured. The power supply unit is also connected to the microcontroller which consists of Bridge rectifier, a filter capacitor and a regulator. For

converting the AC voltage to DC voltage we use the rectifier which is full wave rectifier. To eliminate the ripples, we will use the capacitor filter. Regulator is used to convert the voltage to 5V from 230V supply. The temperature of the area of eye and humidity levels in the eye will be sensed and displayed in the LCD display which is also been connected to the microcontroller.



Fig.2 LCD Display

Using mikroC software the PIC microcontroller which is been functioned out and shows the outputs which in the LCD display. The mikroC which helps in programming according to the user interfaces. It can develop complex applications into very simple. For smoothing purpose, we use out the electrolytic capacitor in which the range of 470 μ F 35 V such that with of a charging and discharging input and output. So the varying DC will be reduced and the proper range of the humidity sense will be occurred easily. The regulator which is the range of 7805 such that which could get proper 5 V DC current and eliminate the ripple factor. For the easy conversion of AC to DC we use bridge rectifier that has 4 area of connections. The over dryness will affect the vision too such that can be reduced by making an alarm beep with the help of an LED indicator.

III. CIRCUIT DIAGRAM

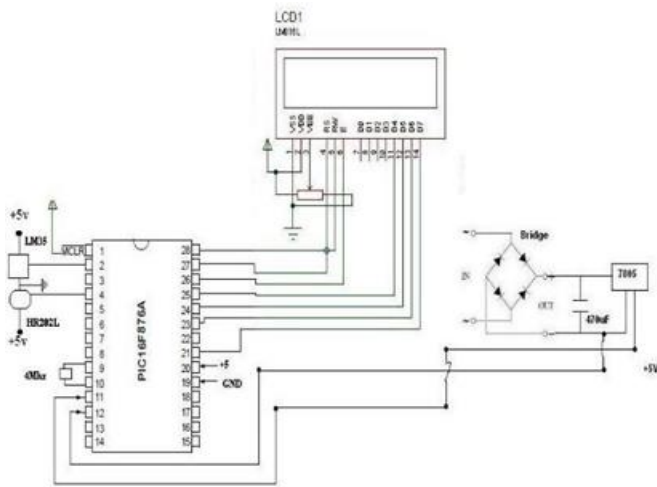


Fig.3 Circuit Diagram

Using these measurements that can be makes out the power consumption by which providing the DC current. The supply can be works over battery and helps to be make it portable.

IV. RESULTS

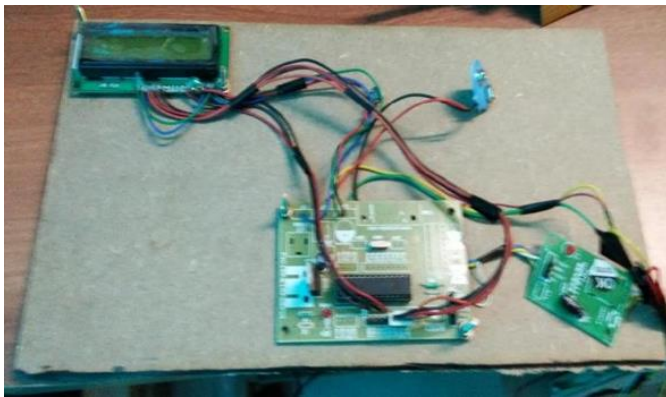


Fig.4 Result (Model)

By using the 16F876A PIC microcontroller helps to find out the humidity level and the temperature is being sensed and been displayed out through the LCD display. This will help to reduce the time delay in the improper medicining in the dry eye diseases and other dry syndromes over region of the eye.

Time to time delay use can helps to achieve the normal tear by the proper medicines which as droplets. We can also reduce the medicine by using this detection method by which the alarm system that could be mentions at the time of looseness and make wash of the eyes over period of time.

V. CONCLUSION

From the project, the development of active verification of the humidification and the temperature sensing over the range of accumulating dry eye in socio well-being or aged peoples. By using this we can reduce the usage of droplets and make ourselves a better treatment to keratoconjunctivitisicca.

VI. FUTURE WORKS

In future these sensing can be within aligned in the pocket and measures out. The alarm sensing can be attached towards phone and make it feels or get reminded out the time of low or high teared/tearless eye.

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Cite this article as :

C. Sathish Kumar, T. Anbarasan, Eldho Alias, G. Gokulakannan, "Detection of Dry Eye In Human Using Humidity", International Journal of Scientific Research in Science and Technology (IJSRST), Online ISSN : 2395-602X, Print ISSN : 2395-6011, Volume 5 Issue 5, pp. 93-96, March-April 2020.
Journal URL : <http://ijsrst.com/EBHBM005>