

THE HEALTHY SKIN FRAMEWORK -IOT BASED

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ABSTRACT

The skin is external covering of the body which serves principally as assurance against microbes and inordinate water misfortune and different elements of the skin incorporates protection, temperature, guideline, sensation, and union of nutrient D. As it is a significant part to keep up the stickiness level and pH estimation of skin we plan, "The healthy skin framework". Simple to screen the human skin's pH level utilizing pH sensor. Measures the dampness level of skin utilizing mugginess sensor. The human skin is the biggest organ of the body. The ordinary skin ought to contain 64% of water and a pH esteem going from 4.75-5.5. Most of the nourishments and beverages we expend are acidic, for example, meat, grains and sugar, with colas and other sodas which are profoundly acidic. We plan the skin health management framework not exclusively to exhortation the admission of food yet can likewise fix arrangement to closest best dermatologist accessible if necessary.

Keywords

Stickiness level, pH level, profoundly acidic, pH sensor, mugginess sensor

Introduction

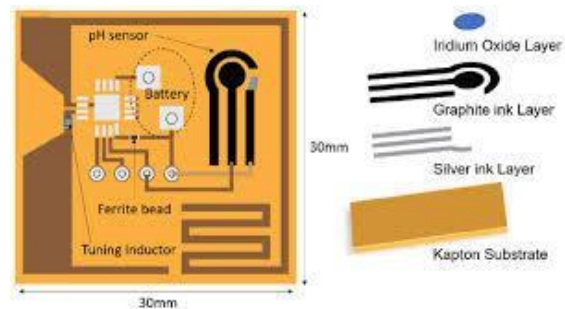
To build up a compelling IoT gadget to foresee the current state of the skin, regardless of whether solid or not. Simple to screen the human skin's pH level utilizing pH sensor. Measures the mugginess level of skin utilizing moistness sensor. Assists with getting ready customized items for various skin types. Proposes to allow nourishments to keep up the strength of the skin. In genuine skin conditions recommends fixing meeting with dermatologists. Help to fix meeting with closest best dermatologists. This work presents a wearable detecting framework, expected to screen sweat pH and skin temperature in a non-obtrusive manner.

The remote interface and the body coupling through a brilliant material make it especially agreeable and unpretentious for the wearer; the applications reach out from high dangers patients hydration observing in a home-care condition, to wellness and wellbeing applications.

2 Related Work

Adaptable pH Sensor for Wireless Monitoring of the Human Skin from the Medium Distances. This gadget contains a pH sensor to decide the pH estimation of human skin. Preferred position: This gadget gives the exact pH estimation of skin utilizing a remote association. Burden: This gadget radio wire can associate just up to a separation of 1 m in particular [1].

Examination of dampness content on various skin objections in different seasons in Indian people. Contraption evaluates the assortments in skin soggy level concerning different seasons and skin districts. Piece of breathing space: This contraption can without a very remarkable stretch report the clamminess content in the two sexual directions at any age. Shortcoming: This contraption can think about the moistness content just on Indian skin types. [2]



Disadvantage: This can't assist in genuine skin conditions. Dermatological infection conclusion utilizing shading skin pictures. These gadgets finding skin maladies by utilizing shading pictures of skin. Favourable position: This gadget is anything but difficult to utilize and minimal effort to set up. Hindrance: This ailment can't determine to have more precision. [3][4]

Significance of skin shading in helpful and indicative applications. Worldwide Journal of Advanced Medical and Health Research.[5]

Advancement of Skin Care Routine Support System. Progressed Science Letters, 7833. Preferred position: Could sort the skin types and give advices [6-11]

3 Working

The typical skin ought to contain 64% of water and a pH esteem extending from 4.75-5.5 Fig1. Most of the nourishments and beverages we expend are acidic, for example, meat, grains and sugar, with colas and other sodas which are profoundly acidic. We plan the skin health management framework not exclusively to counsel the

admission of food yet can likewise fix arrangement to closest best dermatologist accessible if necessary.

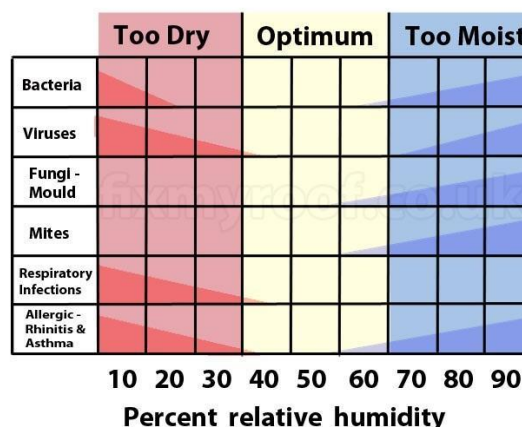
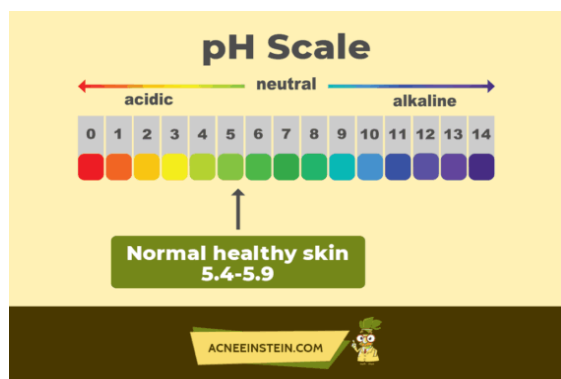


Fig. 2. Relative Humidity

The ideal mugginess for skin will shift marginally from individual to individual. Different components, for example, age, skin type, hereditary qualities, and condition all factor will influence the best degree of mugginess for an individual Table 1.

As per the pH esteem go, we can decide the skin condition whether less acidic, typical or profoundly acidic Fig. 2. As indicated by the skin type and condition decided by the mugginess sensor, we can get simple proposals to allow right adjusted eating regimen to keep up the soundness of the skin.

As per the moistness esteem extend, we can decide the skin condition whether excessively low, ordinary, excessively high. As indicated by the skin type and condition decided by the mugginess sensor, we can get simple proposals to allow right adjusted eating regimen to keep up the soundness of the skin.

Table 1. Units for Humidity Range

HUMIDITY RANGE	CONDITION	MESSAGE DISPLAYED
<i>Range < 45%</i>	Too low	More chances to get skin Itchiness.
<i>Range between 45% - 55%</i>	Normal	Skin level normal low risk factors for bacterial or fungal attack.
<i>Range >55%</i>	Too high	More chances to catch cold, bacterial fungal growth due to excess sweat.

TABLE 2. Units for pH Range

pH Range	Condition	Message displayed
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Range > 5.5	Less Acidic	Intake of grains, sugar, dairy products, sodas and fish.
Range between 4.7 to 5.5	Normal	Intake fermented foods like yogurt.
Range < 4.7	Highly Acidic	Intake of leafy vegetables, nuts, onion, garlic, root vegetables.

4 Applications

Cosmetic items: Nowadays creating magnificence items for various skin types is a major test, by utilizing this gadget we can without much of a stretch create skin items like skin cream, lotions, and so forth.

Keep from skin malignancy: The unusual development of cells in skin causes skin disease, not just that skin presented to sun can likewise cause this malignancy. By utilizing this gadget, we can decide the sort of skin and its condition and forestall malignant growth.

Cleanser producing organizations: This contraption can be valuable in making chemicals for different skin types.



Fig 3 and skin conditions.

5 Conclusion

In this paper we examined about the skin health management framework. The primary target of this paper measure is to the pH level and dampness level of skin utilizing pH level and Humidity sensor information which screen the wellbeing of the skin.

This detecting gadget expects to screen sweat pH and skin temperature in a non-intrusive way. The remote interface and the body coupling by means of a keen material make it especially agreeable and subtle for the wearer; the applications reach out from high dangers patients

hydration observing in a home-care condition, to wellness and health applications.

Thus, we deliver an IoT based skin health management framework so as to offer advices to allow diet to keep up the skin wellbeing by utilizing pH sensor and the mugginess sensor and furthermore we associate with closest best dermatologists.

References

- [1] Nappi, S., Mazzaracchio, V., Fiore, L., Arduini, F., & Marrocco, G. (2019, July). *Flexible pH Sensor for Wireless Monitoring of the Human Skin from the Medium Distances*. In 2019 IEEE International Conference on Flexible and Printable Sensors and Systems (FLEPS) (pp. 1-3). IEEE.
- [2] Patel, K., Gajjar, P. C., Mehta, H. H., Mehta, H., & Solanki, J. (2017). *Study of moisture content on various skin sites in different seasons in Indian population*. International Journal of Clinical and Experimental Physiology, 4(4), 190-194.
- [3] Arifin, M. S., Kibria, M. G., Firoze, A., Amini, M. A., & Yan, H. (2012, July). *Dermatological disease diagnosis using color-skin images*. In 2012 International Conference on Machine Learning and Cybernetics (Vol. 5, pp. 1675-1680). IEEE
- [4] Arockia Raj, Y & Alli, P, 'Turtle edge encoding and flood fill based image compression scheme', Springer. Cluster Computing. Online First Edition. 22, 361–377 (2019)
- [5] Kothandapany, S. (2014). *Importance of skin color in therapeutic and diagnostic applications*. International Journal of Advanced Medical and Health Research, 1(1), 3.
- [6] Noor, N. M., Muhamad, N. J., Sahabudin, N. A., & Mustafa, Z. (2018). *Development of Skin Care Routine Support System*.

- Advanced Science Letters, 24(10), 7830-7833.
- [7] Prabu, A. V., & Sateesh, G. (2019). Kumar Performance Analysis and Lifetime estimation of Wireless Technologies for WSN (Wireless Sensor Networks)/IoT (Internet of Things). *Application Jour of Adv Research in Dynamical and Control Systems*, 11(1), 250-258.
- [8] Srinivas, K., Prabu, A. V., & Sambasivarao, K. (2019). A Real Time Prototype Model for Enhancing the Security Features in the ATM Units International. *Journal of Innovative Technology and Exploring Engineering (IJITEE)*, 8(7), 1936-1939.
- [9] Prabu, A. V., & Kumar, G. S. (2019). Hybrid MAC based adaptive preamble technique to improve the lifetime in wireless sensor networks. *J. Adv. Research in Dynamical & Control Systems*, 11(1), 240-249.
- [10] K Vijaya Manasa , A V Prabu , M Sai Prathyusha , S Varakumari (2018) .Performance monitoring of UPS battery using IoT” *International Journal of Engineering & Technology*, 7 (2.7).352-355.
- [11] Varakumari .S, A V Prabu, Gopiram.K., & S.Venkatesan(2017). Coexistence and fair access on the shared channel for lte-u and wi-fi. *J. Adv. Research in Dynamical & Control Systems*, 9(6), 728-744.
- [12] Manikandan, R and Dr.R.Latha (2017). “A literature survey of existing map matching algorithm for navigation technology. *International journal of engineering sciences & research technology*”, 6(9), 326-331.Retrieved September 15, 2017.
- [13] A.M. Barani, R.Latha, R.Manikandan, "Implementation of Artificial Fish Swarm Optimization for Cardiovascular Heart Disease" *International Journal of Recent Technology and Engineering (IJRTE)*, Vol. 08, No. 4S5, 134-136, 2019.
- [14] Manikandan, R., Latha, R., & Ambethraj, C. (1). An Analysis of Map Matching Algorithm for Recent Intelligent Transport System. *Asian Journal of Applied Sciences*, 5(1). Retrieved from <https://www.ajouronline.com/index.php/AJAS/article/view/4642>
- [15] R. Sathish, R. Manikandan, S. Silvia Priscila, B. V. Sara and R. Mahaveerakannan, "A Report on the Impact of Information Technology and Social Media on Covid-19," 2020 3rd International Conference on Intelligent Sustainable Systems (ICISS), Thoothukudi, India, 2020, pp. 224-230, doi: 10.1109/ICISS49785.2020.9316046.
- [16] Manikandan, R and Dr.R.Latha (2018). “Map Matching Algorithm Based on a Hidden Markov Model for Vehicle Navigation” *International Journal of Advanced Technology in Engineering and Science*, 6(6), 36-42.
- [17] Manikandan, R and Dr.R.Latha (2018). “GLOBAL POSITIONING SYSTEM FOR VEHICLE NAVIGATION” *International Journal of Advances in Arts, Sciences and Engineering (IJOAASE)*, 6(13), 1-9.