ISSN: 2640-4133

Research Article

Advances in Bioengineering & Biomedical Science Research

IoT Wereable Devices, Capable of Detect and Monitor Air Polution,Virus and Deseases

Ventura Rodrigues Alves

KENSLY / Universidade Lusofona

*Corresponding Author
Ventura Rodrigues Alves, KENSLY / Universidade Lusofona

Submitted: 04 Feb 2023; **Accepted:** 10 Feb 2023; **Published:** 24 Feb 2023

Citation: Alves, V. R. (2023). IoT Wereable Devices, Capable of Detect and Monitor Air Polution,Virus and Deseases. *Adv Bioeng Biomed Sci Res*, 6(2), 21-22.

Abstract

Air pollution is an ever.growing problem in our world today , with its efects being felt across the globe. As such , its no surprise that scientists and researchers have been hard at work to develop solutions for this pressing issue . One of most promising solutions is the use of IoT devices to monitor air pollution .In this article , we will explore how the use of these devices can help us better understand and adress air polution.

Intruduction :The Need to Monitor Air Pollution in Real Time

Air pollutionis a major health and enviromental problem affecting people all over the world.Unchecked emissions of pollutants such as particulate matter (PM) and nitrogen oxides (NOx) are the main sources of outdoor air pollution,with industrial activities and transportation being the leading contributors.These pollutants have been linked to a range of health problems,from respiratory illness to cancer ,as well as climate change .To effectively combat air pollution ,it is essential to monitor it in real time .This can be done using Internet of things (IoT) devices,wich are rapidly becoming popular in monotoring air quality.

What are IoT devices and how can they be used to monitor air pollution ?

Internet of things (IoT) devices are small eletronic devices that can be connected to the internet and used to monitor a variety of inviromental parameters . These devices can be used to measure temperature,humidity,air pressure,wind speed and diretion ,as well as other parameters such as PM concentration and NOx levels . By measuring this parameters .it is possible to monitot air pollution in real time and identify areas that need attention .The data collected by these devices can also be used to track pollution levels over time snd develop strategies for reducing emissions .

What features should IoT devices have to be able to detect toxic pollutants and viruses ?

To accurately detect pollutants and viruses in the air , IoT devices must have certain features . Sensors should be able to measure small particles , such as PM 2 . 5 or even smaller particles since these are most likelly to cause health problems.Additionally,-sensors should be able to detect a wide range of gases ,such as carbon monoxide and ozone , which can cause significant health problems when present in high concentrations .Finally , the device should have na alert system that can notify people when dangerous levels of pollutants or viruses are detected in the air .

How can IoT devices be used to detect Air-bourne transmission of pollutants and deseases ?

IoT devices can be used to detect air-bourne transmission of pollutantsand deseases by monotoring changes in air quality over time . By tracking changes in air quality at diferent locations , it is possible to identify areas where the concentration of pollutants and virus is unusually high or low,which could indicate na outbreak or transmission event . Aditionally , by comparing data from different locations it is possible to identify patterns that could indicate a particular transmission.

When will IoT devices become available for all to use ?

Air quality monotoring made by IoT devices can improve enviromental and human standards of living . Its the goal of governments all over the world and its been implemented by business owners. Protecting comunities in the advent of climate change , using software that monitors air pollution and deseases transmited by air can be the key of an healthy future. Adicionally , we may see these IoT devices being used outside polluted working areas only .

What to expect from monotoring IoT devices shortly ?

IoT devices funtion with sofware capable ro monitor and detect air pollution , temperature , and humidity . Such measuring and tracking parameters are constantly in development , positivly we will see virus and deseases outbreaks become more accuratly traced with recent development in (AI) artificial inteligence and (ML) machine learning aplied to new software and hardware .

Who will benefit the most if IoT devices are garanted to succeed ?

Internet of things (IoT) is growing exponentially .such growth is expected to bring substantially more benefits to all . Particularly in human health .New and accurately developed IoT wereable solutions will empower citizens with a more sustainable

and healthier life .Positivly in a world were all must be conected . Human health comes first . Weather indoors and outdoors human health is the principal beneficiary of IoT wereables device monotoring.

Conclusion : The Importance of Monotoring Air Pollution with IoT Devices

In conclusion, monotoring air pollution with internet of things (IoT) devices is essential for understanding the sources and effects of air pollution on human health and the enviroment . With their abilitty to provide real time data on a variety of enviromental parameters ,IoT devices can help us track changes in air qualitty over time and identify areas that need attention .Adicionally ,these devices can help us detect the presence of toxic pollutants and viruses in the air and alert us when dangerous levels are reached . For these reasons , monitoring air pollutrion with IoT devices is becoming increasingly important for protecting public health and the enviroment .

The use of IoT devices in monitoring air pollution is a promising step forward in understanding and adressing the global issue of air pollution . With the help of this devices,citizens and governments can gain a better understanding of the levels of air pollutions in the air enviroment and can take steps to reduce emissions. By taking action now ,we can ensure that future generations have acess to healthier air quality and a safer world.

References and notes : Research was made from ramdom articles and pappers published in the last 3 years on IoT devices capable to monitor air pollution . Available in Data available .

Acknoledgements

This research work resulted upon entry in the urban mobillity contest , innovators open call Voxpop lisbon 2022

Funding : This research project was financed by the author

Competing Interests : The Author declares not to have

References

1. Johnston, S. J., Basford, P. J., Bulot, F. M., Apetroaie-Cristea, M., Easton, N. H., Davenport, C., ... & Cox, S. J. (2019). City scale particulate matter monitoring using LoRaWAN based air quality IoT devices. Sensors, 19(1), 209.
2. Alvear-Puertas, V. E., Burbano-Prado, Y. A., Rosero-Montalvo, P. D., Tözün, P., Marcillo, F., & Hernandez, W. (2022). Smart and Portable Air-Quality Monitoring IoT Low-Cost Devices in Ibarra City, Ecuador. Sensors, 22(18), 7015.
3. IoT- based air pollution monitoring system by Yuxuan yang , international education department , jinling institute of technology.