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Oxidative or Reductive Electropolymerization of Thin Polymer Films and their Use in Electrochromic Windows and Thin-film Sensors

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Abstract

Moisture and temperature, as well as the duration of a person's life, are crucial environmental variables that determine survival or demise. The mechanisms by which these factors influence glassy properties and cause cytoplasmic solidification are becoming better understood. The chemical reactions that go into aging are slowed down but not stopped by cytoplasmic solidification. The seed's metabolic capacity is reduced as a result of the continued degradation of proteins, lipids, and nucleic acids, which eventually hampers the seed's ability to germinate.

Keywords: Polymers • Sensors • Cytoplasma

Introduction

This review examines the development of seed longevity knowledge over the past five decades in terms of seed ageing mechanisms, technology, tools for predicting seed storage behavior, and non-invasive methods for assessing seed longevity. It is concluded that seed storage biology is a complex field that encompasses seed physiology, biophysics, biochemistry, and multi-omic technologies. To increase seed storage efficiency for crops and the preservation of wild species biodiversity, it is necessary to simultaneously advance knowledge in these fields. Moisture and temperature, as well as the duration of a person's life, are crucial environmental variables that determine survival or demise. The mechanisms by which these factors influence glassy properties and cause cytoplasmic solidification are becoming better understood. The chemical reactions that go into aging are slowed down but not stopped by cytoplasmic solidification. The seed's metabolic capacity is reduced as a result of the continued degradation of proteins, lipids, and nucleic acids, which eventually hampers the seed's ability to germinate. This review examines the development of seed longevity knowledge over the past five decades in terms of seed ageing mechanisms, technology, tools for predicting seed storage behavior, and non-invasive methods for assessing seed longevity. It is concluded that seed storage biology is a complex field that encompasses seed physiology, biophysics, biochemistry, and multi-omic technologies. To increase seed storage efficiency for crops and the preservation of wild species biodiversity, it is necessary to simultaneously advance knowledge in these fields [1-3].

Methods

A system with oxygen and temperature sensors, for instance, could be used to monitor a lake's or river's health. Potential problems like algal blooms or changes in the ecosystem can be identified by detecting changes in temperature and oxygen levels. In a similar vein, the acidity and pollution levels of water bodies can be measured using pH sensors and BOD sensors (biochemical oxygen demand) [4].

While there are undeniable advantages to using IoT for water quality monitoring, there are also some obstacles that must be taken into consideration. Data management is one of the most difficult issues because a large sensor network can generate a lot of data. In addition, it is essential to ensure the quality of the data because this is necessary for accurately predicting future conditions.

Discussion

For use in an IoT system for monitoring water quality, custom hardware can be developed. This can be a more expensive option, but it might be necessary in some situations where ready-made hardware does not meet all of the requirements. The term "custom hardware" refers to hardware that has been tailored to a specific use case or application. In the context of an Internet of Things system for monitoring water quality, "custom hardware" could refer to sensors, microcontrollers, or other devices made just for the system.

When off-the-shelf hardware is unavailable or does not meet the application's requirements, custom hardware is frequently developed. For instance, if a company requires sensors with particular performance characteristics or needs to integrate the hardware into a larger system with particular requirements, it may develop custom hardware. Creating custom hardware can be more expensive than using pre-made hardware, but it may be necessary in situations where commercial products lack the necessary capabilities or features.

It is common practice to develop one's own solutions with the Raspberry Pi due to its low cost and relatively simple operation. The Raspberry Pi (RP) is a small, low-cost computer that is ideal for use in projects related to the Internet of Things (IoT), such as those that estimate water quality. A few steps can be taken to use a Raspberry Pi for IoT water quality estimation: A) Installing the necessary software on the Raspberry Pi, such as an operating system like Raspbian and any necessary libraries or tools for the project, such as libraries for interacting with sensors or other hardware and programming languages like Python or Julia. B) The Raspberry Pi's connection to the internet-wired or wireless [5].

Conclusion

Internet of Things network with other devices and services. To measure

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the water's quality, the appropriate sensors, such as pH, Eh, and oxygen electrodes, must be attached to the Raspberry Pi. Real-time data collection and transmission using the connectivity and computing capabilities of the Raspberry Pi. Data can be used by the Raspberry Pi directly for local decision-making and control, or it can be sent to a central server or cloud service for analysis and processing. Making use of the information gathered by the Raspberry Pi and its sensors to track the water's quality and find any potential problems or concerns This could be as simple as notifying operators or other stakeholders in the event that certain thresholds are exceeded, or as complex as automatically carrying out the necessary correction.

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Conflict of Interest

None.

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