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(57) Abstract :

Smart food packaging for frozen shrimps that aims at providing a low-cost freshness indication system. The ideology behind the invention has to support the aqua culture forms and increase the revenue in the global markets. The smart system is implemented using a time temperature visual bio-sensor along with a gas sensor (MQ-135) integrated with a microcontroller (ESP8266) which will change its basic characteristics and ensure ongoing communication with shoppers, and also to develop a time series data logger which will be both visual and machine readable in order to maximize quality and minimize waste in frozen shrimps™ shipments.

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Abstract:

Smart food packaging for frozen shrimps that aims at providing a low-cost freshness indication system. The ideology behind the invention has to support the aqua culture and increase the revenue in the global markets. The smart system is implemented using a time temperature visual bio-sensor along with a gas sensor (MQ-135) integrated microcontroller (ESP8266) which will change its basic characteristics and ensure ongoing communication with shoppers, and also to develop a time series data logger which be both visual and machine readable in order to maximize quality and minimize waste in frozen shrimps' shipments.

Complete Specification

- Claims:1. Smart food packaging system for frozen shrimps comprises of a temperature sensor, gas sensor, micro-controller unit, LCD display GPS module and battery.
2. Smart food packaging system for frozen shrimps as claimed in claim 1, includes a temperature sensor wherein the temperature sensor used is DS18B20 which is a 1-wire programmable temperature sensor. The temperature sensor is waterproof unit to make it compatible with the freezer box.
3. Smart food packaging system for frozen shrimps as claimed in claim 1, includes a gas sensor wherein the gas sensor used is MQ-135 which helps to detect the presence of the gas used and which is the important feature for identifying the freshness of frozen shrimps.
4. Smart food packaging system for frozen shrimps as claimed in claim 1, includes a micro-controller unit wherein the gas sensor and temperature visual bio-sensor are integrated with the micro-controller (ESP8266) which will change its basic characteristics and ensure ongoing communication with shoppers, and also to develop a time-series data logger which will be both visual and machine readable in order to maximize quality and minimize waste in frozen shrimps' shipments.
5. Smart food packaging system for frozen shrimps as claimed in claim 1, includes an LCD display wherein the LCD display unit displays the current temperature and gasses emitted from the frozen box over the time period and makes it transparent in disclosing the condition of frozen shrimps.
6. Smart food packaging system for frozen shrimps as claimed in claim 1, includes a GPS module wherein the GPS modules are used for tracking the smart food packaging that contains frozen shrimps.
7. Smart food packaging system for frozen shrimps as claimed in claim 1, includes a battery wherein the battery is a rechargeable battery that can be recharged as and when required.

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