Retraction

Retraction: An Effective Identification of Food Adulteration Using IoT (J. Phys.: Conf. Ser. 1916 012180)

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This article (and all articles in the proceedings volume relating to the same conference) has been retracted by IOP Publishing following an extensive investigation in line with the COPE guidelines. This investigation has uncovered evidence of systematic manipulation of the publication process and considerable citation manipulation.

IOP Publishing respectfully requests that readers consider all work within this volume potentially unreliable, as the volume has not been through a credible peer review process.

IOP Publishing regrets that our usual quality checks did not identify these issues before publication, and have since put additional measures in place to try to prevent these issues from reoccurring. IOP Publishing wishes to credit anonymous whistleblowers and the Problematic Paper Screener [1] for bringing some of the above issues to our attention, prompting us to investigate further.

[1] Cabanac G, Labbé C and Magazinov A 2021 arXiv:2107.06751v1

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An Effective Identification of Food Adulteration Using IoT

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Abstract. To protect fish and seafood from microbial spoilage, some fishermen and fish vendors immorally use chemicals. An effort was made to detect formalin through our system in wet seafood markets. We get into recent formalin-based studies, then we efficiently develop this project. The emission of gas mostly from fish harmed by formalin can be detected by our device. The values identified by the gas sensors can be changed in the smartphone app using Blynk. The mobile computer is connected to the PC's hotspot where the arduino IDE has been mounted. Via the arduino IDE, the blynk program gets the values from the sensor and tests with restrictions. We may therefore achieve the optimum solution and be mindful of the fish affected by formalin.

Key Words: Sea food, Formaldehyde, Formalin, Gas Detecting Sensor, Arduino IDE, Blynk Smartphone Application.

1. INTRODUCTION

An significant part of a balanced diet is fish and seafood, which is known to be the main source of energy and proteins. In the advancement of the agriculture and agri economy, the position of fish products as well as livestock commodities is most important. The tradition of fish has made a major contribution to export earnings, job creation, reduce poverty, as well as sustainable growth.

The '3rd Largest Commodity' is fish and seafood products in India. There are large fishing opportunities in Bangladesh, consisting of surface and ground waters populated by 297 and 510 aquatic species, 14 tropical fish species and 25 prawn organisms. The available native species comprises of 13 carp species and 4 catfish varieties. To meet the growing trading demand of the nation is not at all adequate. To such an end, we have enough economic activity to implement into the global market imported seafood from nearby nations. The survey found that over 80 MT of seafood and aquaculture products reach our nation from Myanmar via the Teknaf border on a daily basis. By structure, fish have amino acids free of fat and water that are prone to micro-organism spoilage. So, during the post mortem process, they will screen for biochemical reactions. Also, seafoods and fish products are very edible and can also be handled with care on ice for only 9 to 15 days. Fish distributors prefer to deliberately add formaldehyde as a protective agent in order to safeguard the quality of seafood products. In order to prevent spoilage and increase economic development, added formalin fish are being transported to domestic marketing by survey. Some dealers inject formalin further into fish's body or spray blended water from the surface with formalin when the fish are on the consumer stores. From this, we can avoid the production of fish in local communities. 37 percent of the chemical gas solution is dissolved by formalin. The formalin fluid for sea food use should comprise 10-15 per cent methanol, preventing the development of any highly toxic material. The International Agency for Research on Cancer (IARC) has previously noted that category 1 carcinogenic cancer affects human beings. The usual consumption of formaldehyde will increase body weight dramatically, according....
to a recent U.S. report. So, it induces several non-curable illnesses. Multi-national entrepreneurs are using formalin in seafood, presently documents in the publication, to sustain and improve the economy with little expense. Several seafood investment firms are funding this unethical process to increase their trading development. In some neighboring companies, formalin-applied fish goods really aren't licensed. Visual impairment, breathing problems and cancer are caused by the inhalation of formalin-injected seafood. On the basis of the latest technology for these problems, we have stepped into this project. Existing projects are currently conducting latest research through a recent study on how to diagnose formalin in seafood and how to improve storability in shipped seafood. From one project report published in Dhaka, Bangalore's Sylhet cities, 60% of formalin-affected seafood were discovered and distributed by supermarkets with the assistance of fish vendors.

On the basis of gas detection sensors, we developed the project. Gas sensors have been enhanced and the observed measurements seem to be very accurate. Formalin fisheries release a toxic gas termed formaldehyde. The gas sensor MQ4 can identify this gas and the results are calculated within seconds. These measurements will also be checked and monitored and compared with the substance level of formalin.

One of the best exchanges of information within system components is the 'Blynk IoT Smartphone Application', conveniently monitors compute nodes and manages thousands of implemented project activities. We can comfortably do multiple assignments by doing this. By accessing the hotspot and its username and key, this smartphone app interfaces to the Arduino IDE on Desktop computers.

2. LITERATURE REVIEW:
[1] as well as his team has gone to the Bangalore seafood store in Dhaka city. 60 percent of the formalin-preserved fishes were discovered. The fact that fishes are contaminated due to contaminant interference, chemical oxidation and autolysis was also [2]. Through that, he spread concern of how fishes could be spoiled.

A better way to preserve seafood using storability without harming fish has been found [3], but fish are speedily decaying [4]. Formaldehyde, but at the other hand, has been used as a dietary supplement in several nations in preserved foods such as fish and caviar [5,6]. Formaldehyde quantities have been found in four squid varieties, which were typically much greater in viscera than in frozen squid muscle [7]. Through this, we came up with the idea about using the fish values through the gas detection sensors to monitor the 'Formaldehyde influenced fish'.

By obtaining certain values, the contrast within fresh seafood and formalin can be established. In the present situation, customers can get an idea of the situation in the fish markets through this [8].

Via the above table definitions, the specific values of formaldehyde fish in various places can be obtained. We determine the values and through that we determine the discrepancy. We can enable communication between peripherals and the Blynk smartphone apps through the use of 'Blynk.'

For Blynk, it is very convenient to converse with Embedded applications and to have values based on the technical specification [9, 10]. This is the most common IoT platform that can track cloud developments and manage major projects. On any mobile device, we can develop our own front end comfortably through this.

3. PROPOSED SYSTEM:
A frequently used method in today's fishing sector is the illegal use of formalin for quality control purposes. The proposed design therefore utilizes a MQ4 detector that detects the absorption of
formaldehyde into fishes. On an arduino-connected gas sensor, the identified sensor is analyzed and the gas sensor value is computed [11].

The Arduino NodeMCU circuit was connected to desktop and laptop computers by importing the Arduino IDE. The coding for the appropriate dimensions is configured using this Arduino IDE. And the Blynk software will be modified on smart phones [12].

A gas sensor is an electronic device that indicates the existence, mostly as part of a protection system, of gas in the atmosphere. To detect a gas leakage or other pollutants, this form of hardware has been used and may communicate with a remote controller. Tracking of gas leakage is the mechanism through which sensors identify highly dangerous gas leakage [13].

**Features:**
- Natural gas, high CH4 sensitivity
- Strong sensitivity to smoking, alcohol
- Speedy Respond
- Balanced and affluent life
- Quick circuit with drive

We can obtain the measurements from the MQ4 sensing element via the Arduino nodeMCU board and alter the measurements with in the 'Blynk' IoT smartphone application. For front-end designers, one of the best design frameworks is the Blynk platform. Through this, our project gets the best view of architecture, which offers an innovative way of increasing values in the demonstration of structure and texts.

**Features:**
- Technique of Drag - And - drop
- Coping efficiently with Arduino
- Easy use
- Autonomous page

Via that, the rate of growth that is built into the Blynk smartphone application can be described. If it is less than limit, then the amount of "Formalin is limited. Then this species is "beneficial to human health", otherwise if it has been reported as greater than the limit, "the amount of formalin is high". Therefore, those species is not ideal for your health. At that time, we would be informed of such kinds of fishes. And with the emission of gas, we have assessed the decomposed stage of the fishes. We have also defined the principles and tracked them. On the basis of beliefs, we may be careful of decomposing fishes Figure 1, 2, 3 and 4.
Figure 1. IMAGE OF BLYNK MOBILE APPLICATION

Figure 2. FISH TESTER BLOCK DIAGRAM USING GAS DETECTING DEVICE

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4. CONCLUSION:
In conclusion, formaldehyde is still a chemical threat identified at high levels in seafood. Through this experiment, we can describe formalin and track the values of the fish harmed by formalin. There are certain kinds of fish we should make them aware of. The identified values present in formalin seafood will be stored in a system focusing on market areas in future references. Then we observed the maximum market monitoring of formalin seafood and then it can be reviewed or complain about these fish markets to government organisations to act quickly and legislate by adding this type of food additive.
REFERENCES:

[1] Riaz Uddin, Moin Ibna Wahid, Tasbira Jesmeen, Naz Hasan Huda, Kumar Bishwajit Sutradhar (2011). Formalin Detection in Seafood Samples Taken from Dhaka City, Bangladesh

[2] Ioannis S. Boziaris (2014). Present Developments in Fresh Seafood Microbiological Contamination Study, published

[3] Farah Faïqah Fazial, Tan Ling Ling, Azfar Al Ariff Ahmad, and Saiful Irwan Zubairi (2017). Physicochemical Description of Liquid Residual Tuna Fish (Euthynnus affinis) Biofluid Metabolites during the time.

[4] Scott T., and E., 2003, In the 21st century, in households, food safety and foodborne contaminants. Can. J. Infect. Dis., Amount 14: 277-280.

[5] J., J. Gledel, G. Cumont, and L., Pantaleon, Richou-Bac in 1983. Biological and chemical contamination of animal-based food. Operation of the Laboratory Central Hygienealimentaire of Paris (1973- 1981). Bull. Acad. Natl. Med., 167: 432-427, respectively.

[6] Donato, F., R. Bergonzi, M. Magoni, C. Scarcella, A. S. Carasi, Apostoli, Indelica, P. 2006. Person's exposure to polychlorinated biphenyls in the vicinity of a chemical plant in Italy: the food web is the key source of contamination. 64: The Chemosphere 1562-1572.

[7] Concerning IARC., 1995. IARC monographs on the carcinogenic risk evaluation of chemicals: wood particles and formaldehyde for individuals. Vol. 62. World Health Organization, Lyon, France, 37: 500.

[8] Bianchi, F., M. Careri, A. Uh, and M. Mussi Musci. Mangia, 2007. Fish and food protection: Determination of formaldehyde in 12 species of fish by SPME collection and GC-MS review. Chem. Meat, number 100: 1049-1053.

[9] Cui, X., L. Jiang, G. Fang, and W. In 2007, Wang, Chim.Acta, 590: 253-259. Anal. Kinetic spectrophotometric system for the detailed characterization in foods of traces formaldehyde.

[10] A. Haldorai and A. Ramu, Security and channel noise management in cognitive radio networks, Computers & Electrical Engineering, vol. 87, p. 106784, Oct. 2020. doi:10.1016/j.compeleceng.2020.106784

[11] A. Haldorai and A. Ramu, Canonical Correlation Analysis Based Hyper Basis Feedforward Neural Network Classification for Urban Sustainability, Neural Processing Letters, Aug. 2020. doi:10.1007/s11063-020-10327-3

[12] Storelli, M.M., R., and A. Storelli, Marcotrigiano, Giacominelli-Stufferand G.O. In 2005. Evolution in the body of two fishes, hake (Merlucciusmerluccius) and stripped mullet (Mullusbarbatus), of Mediterranean mercury: estimated weekly intake. Chem. of food 89: 295-300.

[13] Inc. M.C. Prado, Veiga, O.J., and C. Removal of formaldehyde, methanol, dimethylether and carbon monoxide from the exhaust gas of artificial resin-producing industries. 70: 1357-65. Chemosphere. 2007, Kennes.