SFAD: Spoiled Food and Allergy Detector

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Food allergies and food poisoning are widely spread. Globally, 220-250 million people suffer from food allergies. Some allergic reactions called anaphylactic reactions are fatal especially in children. Most allergy sufferers tend to avoid any unlabeled foods such as foods in buffets and restaurants which limit their food choices. Eating expired foods can expose your body to harmful bacteria that can cause vomiting, diarrhea, and a fever. The consumption of spoiled food can also result in foodborne illness, or more commonly known as food poisoning. Therefore, we aimed to design a device that detects peanuts in foods in order to limit allergic reactions cases and prevent them, and to detect if the food is spoiled or not to limit the consumption of rotten. The device is made by using an accurate light sensor and gas sensor as well as a U.V laser. Food that contains the peanut protein light up when exposed to the U.V laser and keep glowing in the dark after the laser was turned off; due to phosphorescence. Also when food rots, the bacteria present in the food releases methane and Carbon dioxide gas. The food tested for the presence of peanuts, Ch4 and CO2 by comparing the readings with a special table that contains the supposed differences in the reflected light for each sample. As a conclusion, SFAD device will reduce the overall cases of food poisoning and allergic reactions.

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