Measure Time With an Apple (Innovative Indicator To Determine the Duration of Consumable Goods, and Plant To Extract Raw Materials To Allow Its Industrial Production)

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Apple is the most popular fruit around the world, and it is the fruit that I was looking, while came to my mind to develop a time indicator to determine the life of consumable goods. While I was reading data, I noticed that the 50% of fruits and vegetables are rejected because of enzymatic browning, and after I had read a survey, which said that the 70% of population takes on the protective face mask, more than that suggested by the scientific committee, so I decided to develop a device of collective interest, which was improved during the time, which has the action that I mentioned before, and its purpose is to get action in other fields, like alimentar sector, to determine the expirations of aliments. This device thanks to the intensity of enzymatic browning developed by the polyphenols that come from fruits/vegetables that are rejected from the market, if it is associated to a legend, it can indicate the time passed from the beginning of a reaction, working like a visual timer. The research aimed to find a correlation between the intensity of browning developed by a polyphenol solution passing the time, thanks to a UV Visible analysis with spectrophotometer and by exanimating the differential spectra. Was made a prototype and after the research aimed to find a good way to extract raw materials from fruits and vegetables HPLC. Now the work is in a continuously evolution and the prospective is to analyze the amount of polyphenol (and the possible presence of enzymes) that should be use to reach the specific browning after pass "x" time (application on different objects). The device and the plant have more applications and embodiments, that aren't shown because of industrials secrets; another step is to throw the device in the market.

Awards Won:
Fourth Award of $500