A New & Low Cost Technology of Electrochemical & Bionic Sensors

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In present days electrochemical sensors are used to detect some gases and compounds. These sensors use noble metals. So, these sensors are expensive and do not detect multiple compounds and gases. In Industries and laboratories people detect hazardous compounds by spectroscopy and chemical reagents which are very expensive, power consuming and difficult methods. In screening test of diseases people also use expensive and time consuming methods. So, the project is about making a simple, environmental friendly and low cost electrochemical sensor which can sense every soluble and ionic compound and gas in a very less time. This sensor uses carbon and less reactive metal electrodes. There voltage signal varies on the type of compound dissolved in a solution not on its concentration. The device is composed of the sensor, some electronic components and micro controller. The saved program in microcontroller picks the signal from the sensor, after that 0.3 g of compound which is needed to detect is added in an unknown solution of 60 mL, if change in the voltage is not more than 0.05 V then added compound is already present in the unknown solution and thus the name of the chemical detects in this way. Resistance of solution is measured to find the quantity of detected chemicals. The sensor easily detects the name, quantity of compound with the minimum concentration of up to 1 mg/dL and also shows the PH value and properties of compound additionally. This sensor is capable of detecting unhealthy contents in the water. Bionic sensors are also made in this project in which the moisture of hand is used as electrolyte. These bionic sensors diagnose heart attack and blood pressure level through sweat of person. These sensors are cheap, durable, environmental friendly and simple.

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