The Revolutionary Refractometer

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"Controlling the sugar concentration in our daily drinks has become essential especially for diabetes. It’s also an important thing to farmers in order to know exactly how much sugar their fruits like grapes and prunes contain. That’s why we decided to make this operation easier and accessible for everyone by creating a revolutionary refractometer. Get rid of this a traditional refractometer is difficult to use and needs a lot of learning and knowledge to manage.Also, it doesn't give you the sugar concentration ;it just gives you the refraction index. However, our device seeks to facilitate this task because it transforms this operation into an automatic one by using programming :an Arduino board and Bluetooth technology. We thought that we can measure the sugar concentration in an unknown liquid using a laser beam which enters a rectangular prism that contains the liquid then according to the refraction index of this liquid the laser beam will bend and our photo resistors which are connected to the processor of the Arduino board calculate the refraction angle then the processor transforms it into a value (the sugar concentration with g/L) according to the results of the experimental results stored in its memory. Finaly, a Bluetooth module connected to the Arduino board sends this value by Bluetooth to your smartphone. "

Awards Won:
American Intellectual Property Law Association: Second Award of $250