NON-INVASIVE BLOOD GLUCOMETER

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LIDNER MEDITECH

AIM:

To make Diabetes testing **Easy** and **Affordable**

OUR SOLUTION:

- A waste free noninvasive device for measuring Blood Glucose levels that works on the principle of spectroscopy.
- No additional costs per test.
- Portable and low-cost device .
- Cloud based platform for storing and accessing readings.
- Cloud based platform enables direct sharing of test readings with doctors.

MARKET OPPORTUNITY

THE PROBLEM WE ARE TRYING TO ADDRESS:

A very large population of the world is suffering from Diabetes today. The common testing devices in the market today are all based on chemical strips that are not reusable and are quite expensive considering the sheer number of tests required per month by an average patient. The conventional process of testing is expensive (Rs12.78 per test),uncomfortable and poses a risk of infection. Our product is small, noninvasive and reusable(does not require any cartridges). This makes continuous blood sugar monitoring affordable and safe.

TOTAL MARKET SIZE:

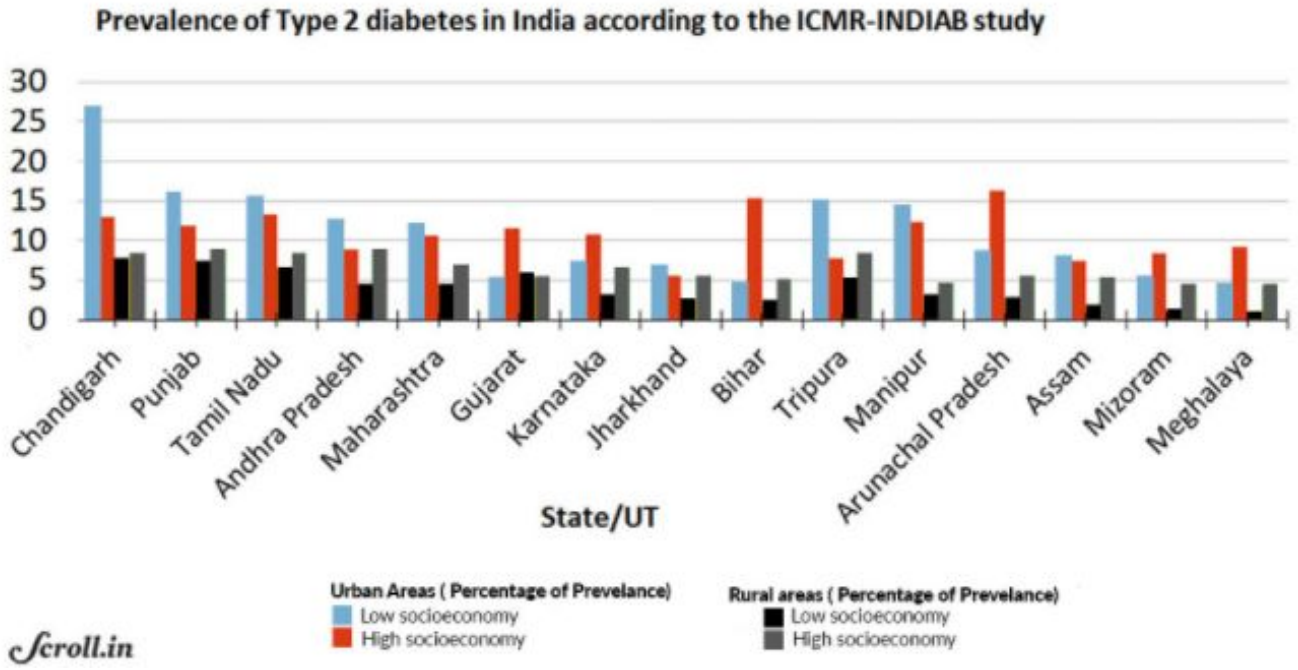
We aim to cater to a global market. We aim to manufacture and test our products indigenously adhering to the regulations and standards laid down by the medical board.

GLOBAL MARKET:

- The global diabetes prevalence in 2019 is estimated to be 9.3% (463 million **people**) and is expected to rise to 10.2% (578 million) by 2025.

LOCAL MARKET:

- One in every six Indian suffers from diabetes(77 million **people**) and the percentage is still growing.



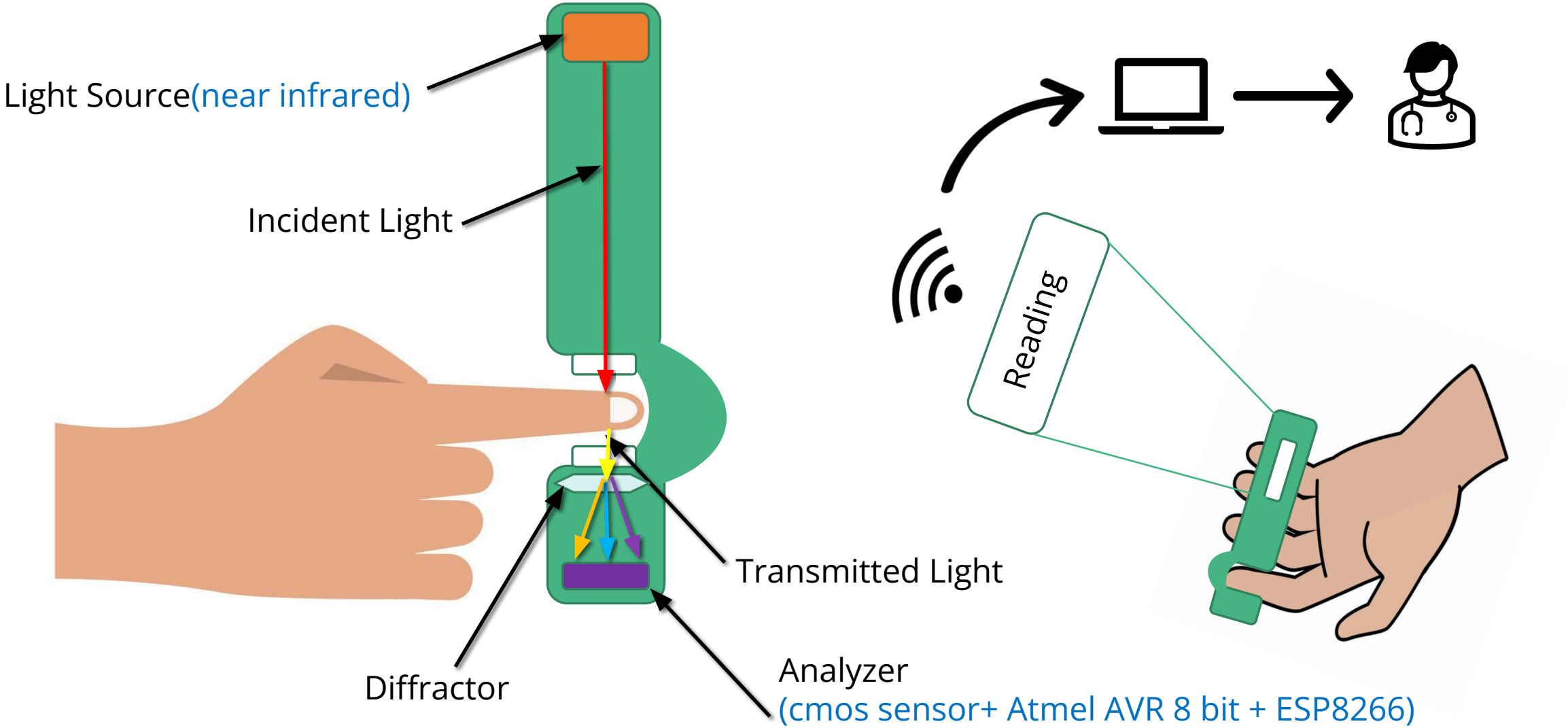
THE PREVALENCE OF DIABETES IN INDIA

BIRD'S EYE VIEW

- 9.3% of entire global population suffers from diabetes (463 – 578 million).
- One in every six Indian suffers from diabetes.

- One third of the total diabetic population in India belongs from the rural lower income strata that cannot afford regular testing.

- Conventional testing costs Rs. 12.73 per reading.
- Approx. Rs 10K is spent annually.
- Conventional blood sugar tests pose a 30% increased risk of infection.

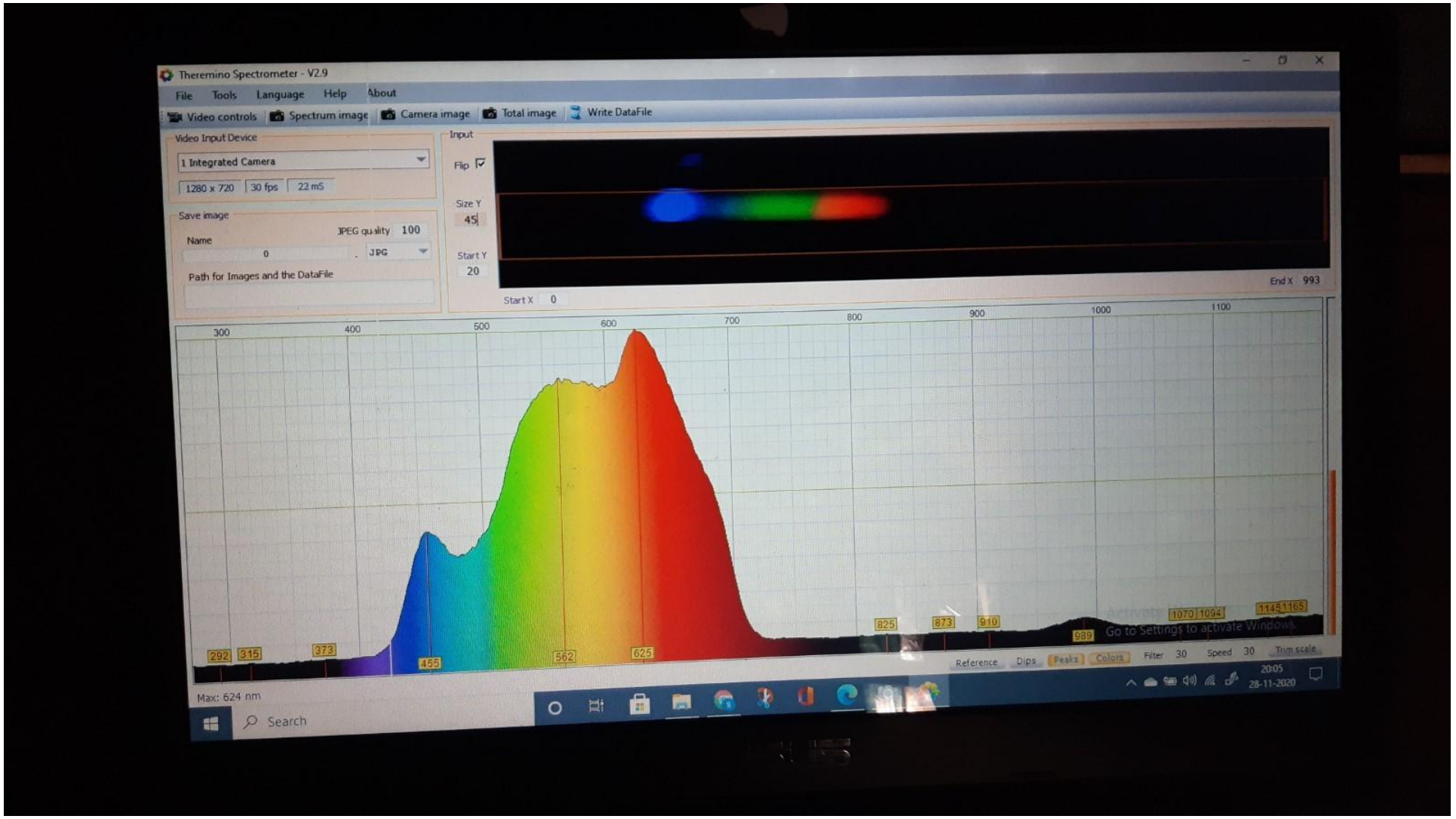

Light Source(near infrared)
Incident Light
Transmitted Light
Diffractor
Analyzer
(cmos sensor+ Atmel AVR 8 bit + ESP8266)
Reading

PRODUCT DETAILS

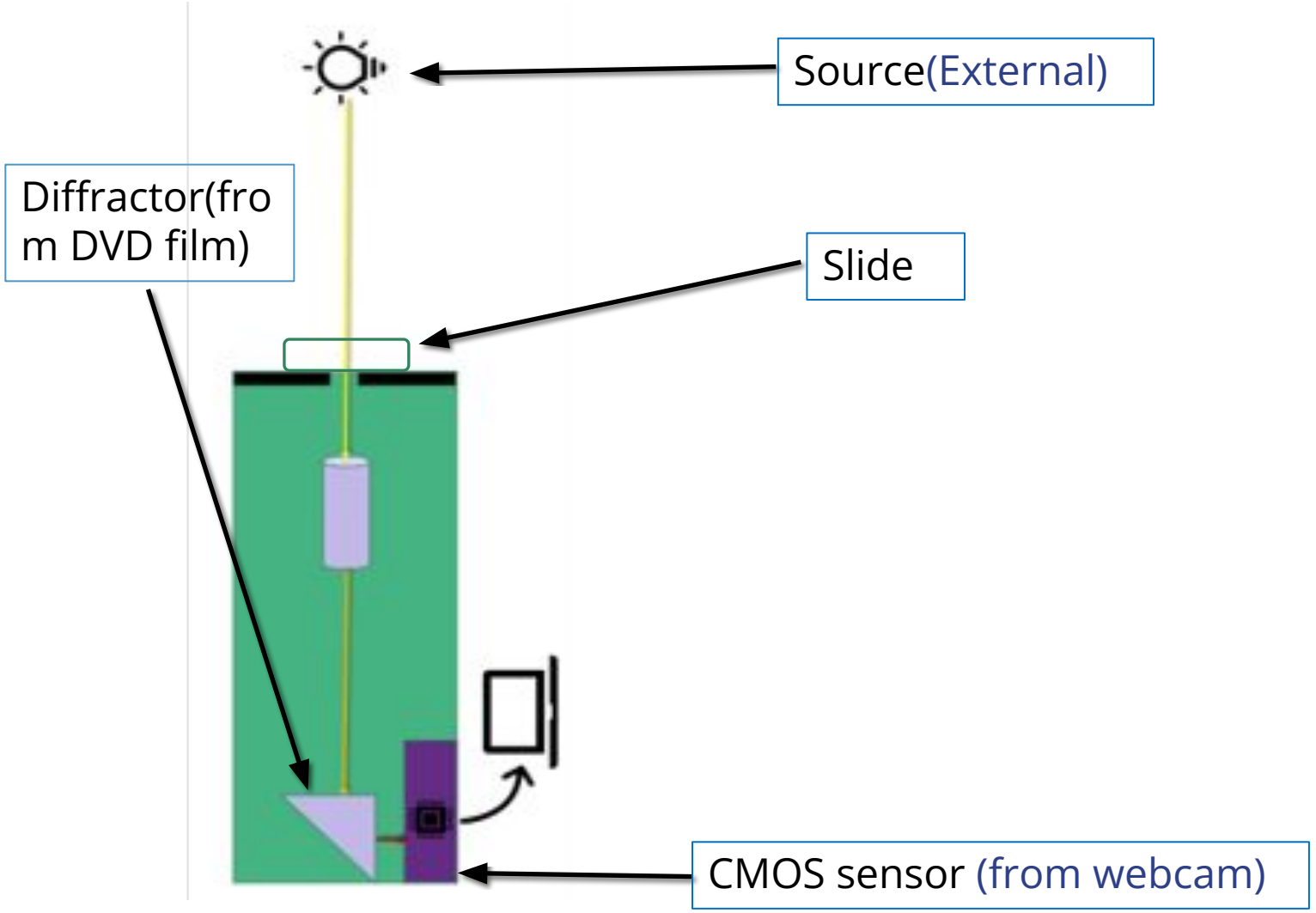
OUR PRODUCT	CURRENTLY AVAILABLE PRODUCTS IN MARKET
▪ Noninvasive.	▪ Invasive
▪ No risk of infection	▪ High risk of infection
▪ No additional operating cost. No additional components requires required.	▪ Requires single use cartridges per test. Requires sanitizing swabs for disinfecting the needle.
▪ Time required per test is very low and provides web-based platform for monitoring blood sugar fluctuations	▪ Slow and do not provide interface for monitoring blood sugar trends.
▪ Platform is diverse. This principle can be used for the development of a range of products designed for the diagnosis of other diseases also after the biological markers have been identified and their respective absorption spectra determined.	▪ Platform is static and cannot be extended for the diagnosis of other diseases.

CURRENT STATUS OF PROJECT

We have just started working on the idea. So far, we have been able to build a spectroscope from a webcam sensor however we have not been able to extend it to the infrared region(for analysis of blood samples) due to technical issues. We have been able to collect some readings for other fluids such as chlorophyll. We have been able to calculate the variations in the concentration of chlorophyll using a modified form of Beer Lambert's Law. An open-source software called Theremino was used for observing the spectrums and all calculations were done by hand.



Sample reading from prototype



Schematic of prototype

Taking a reading from the table lamp

BUSINESS MODEL

- We aim to cater to a very diverse clientele considering the fact that Diabetes is a widespread disease and is quite evenly distributed across the various economic strata of the society.
- The product will be first marketed in India. Our primary consumers will be the middle-income strata(taking into account the density of diabetic patients) and the specialty hospitals across the country.
- We aim to sell our product directly to the customer through Ecommerce sites such as Amazon and Flipkart and offline through the Leading Pharmaceuticals outlets across the major cities of the country. Hence our business model would be a hybrid between the **B2C** model and the **B2B** model.

REVENUE MODEL

- Right now, we have not yet decided on a revenue model. The primary aim for us is not to make huge profits but rather to generate a strong client base .We will provide a 5 years warranty and a lifetime free membership to our cloud-based platform with the purchase of our product to every customer. The product would be competitively priced, and no post purchase revenues would be collected.
- The Hospitals would be charged differently. We will be supplying our products at cheaper rates in large batches to the hospitals. Advanced features of the cloud-based platform would be provided on a yearly subscription in order to enable seamless integration between the wards and departments.

TEAM

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