

About me

Mejdi NCIRI

Engineer in optical science (2010)



2010-2012

Tech-support

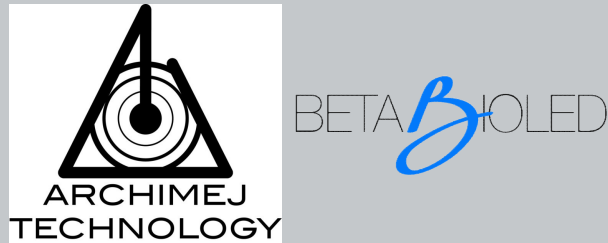
Spectroscopy training



2012 – mid 2017

Founder

CEO



Mid 2017- today

FabLab Manager




Pitch Plan

- Blood Analysis
- “Beta-Bioled” Project
- “Gamma” Project ?

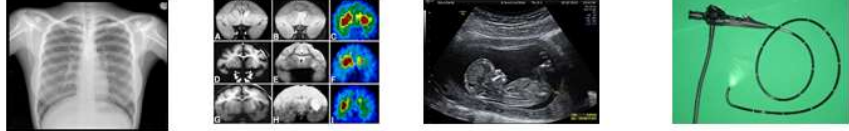
~10min

Medical Diagnostic Tools: The 1st step of healthcare

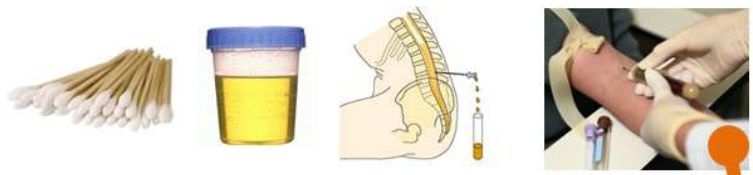
Vitals Signs



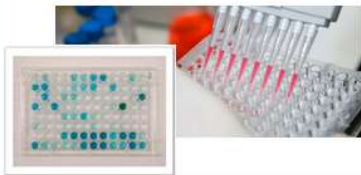
Imaging




In-Vitro Diagnostic (IVD)



Genetic
DNA - RNA - Gene



BioChemistry



Blood BioChemistry Analysis:

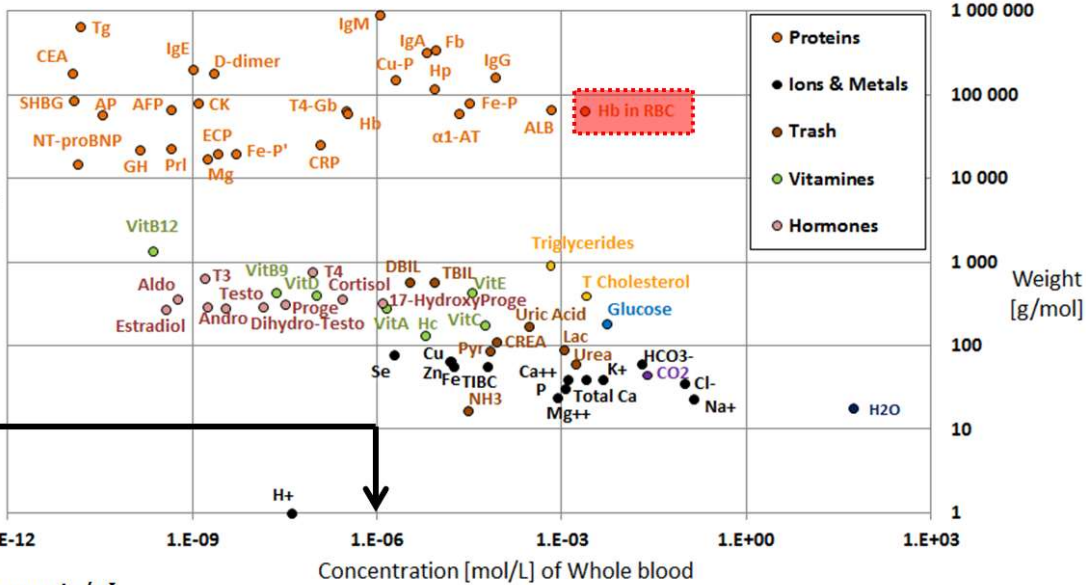
Backs more than 50% of all medical decisions.

100 million/day (worldwide)

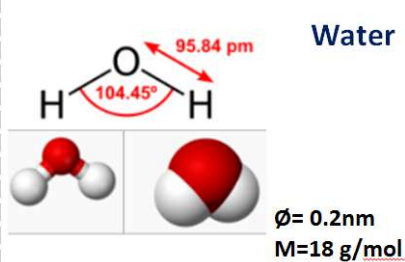
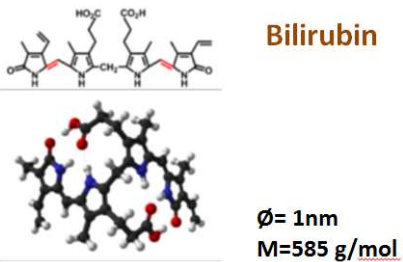
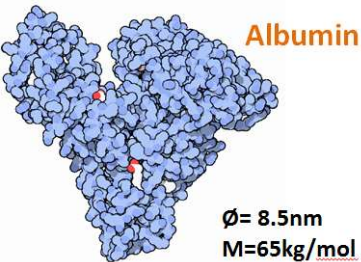
What's a Blood-chemistry panel?

55%
Plasma/Serum

Elements of Blood-Plasma (~80)



1 $\mu\text{mol/L}$
= 600 Billion elements/ μL



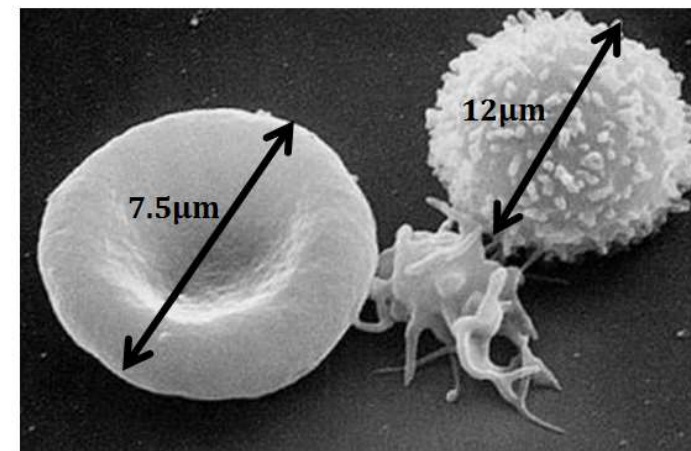
Whole Blood



Bacteria

Virus

45%
Blood Cells



RBC
95%
~5 Million cells/ μL (8pmol/L)

Platelets

WBC



The pricing of Blood-chemistry panel

The Automated way Cobas by Roche

All tests available (~100)
2mL of Blood / panel
100 to 2000 tests/hour



Equipment:
200 k€ / 5 years



Reagents:
300 k€ / years
(400 beds hospital)

Average cost:
1€/test
10€/panel (~10 tests/panel)

The Desktop way LabGeo by Samsung

~10 tests available
70uL of Blood / panel
1 panel in 7minutes

Device:
8k€



Cartridge of 9 tests: 15€

The Portable way I-Stat by Abbott

~20 tests available
70uL of Blood / panel
1 panel in 7 to 12minutes

Device:
10k€



Cartridge of 1 test: 7€

Cartridge of 8 tests: 20€

Portable & Frugal IVD Tools:



Qualitative



Single test only

Full Blood Chemistry?



Challenge pending

Global Distribution of Physicians per 10,000 population



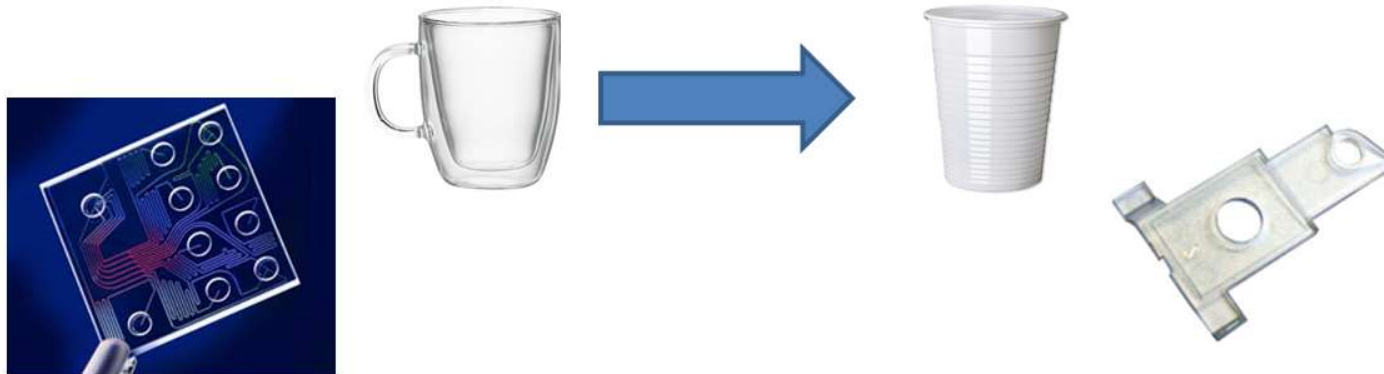
Target: Better data, better healthcare, for everybody.

Portable Blood analysis, The Frugal Way :

=> Minimise/Lose the expensive reagents



=> Reduce the complexity of the μ Fluidic:

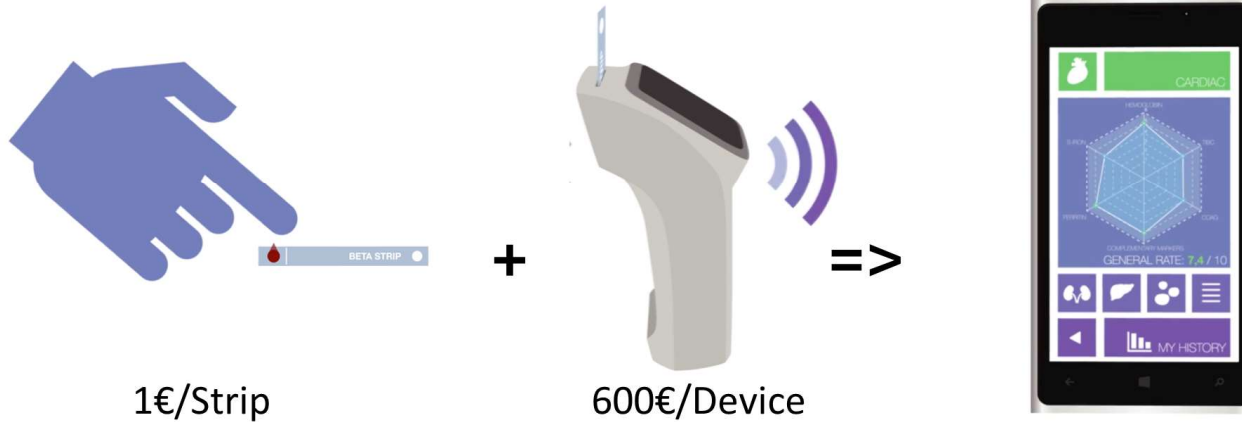


Use the **Light**, the whole **Light**, nothing but the **Light**
(and some reagents if needed)

NB: VISION in 2014

BETA *B*IOLED

A **Light** chemistry panel from one drop of blood



Markets:



NGO
ER



Medical
deserts



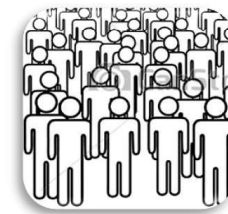
Developing
countries



Silver
Economy



Chronic
diseases



Mass

2015 - 2017

2017 - 2020

2020+

NB: VISION in 2014

BETA **B**IOLED

A **Light** chemistry panel from one drop of blood

What are the tests of a blood PANEL?



+



=>



1€/Strip

600€/Device

Markets:



NGO
ER



Medical
deserts



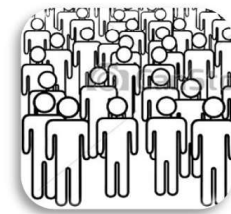
Developing
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2015 - 2017

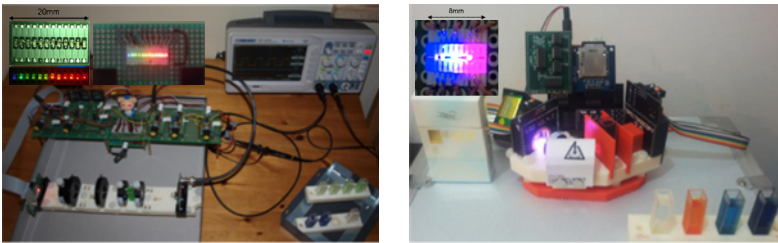
2017 - 2020

2020+

HISTORY & MILESTONES

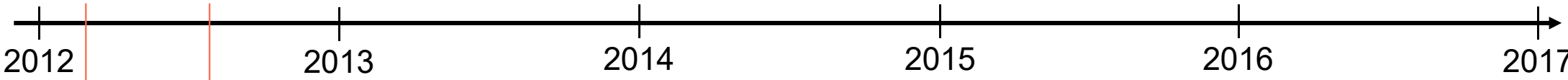
2012 – 2014: 450 K€ Love Money + Grant

Conception, assembling and validation from scratch of core technology (Spectroscopy 2.0®)



2015 – 2016: 2 M€ Post-Money Valuation: 12M€

Technology platform: demonstrator of Beta-Bioled™, prototypes of disposables and validation of first “reagents” tests

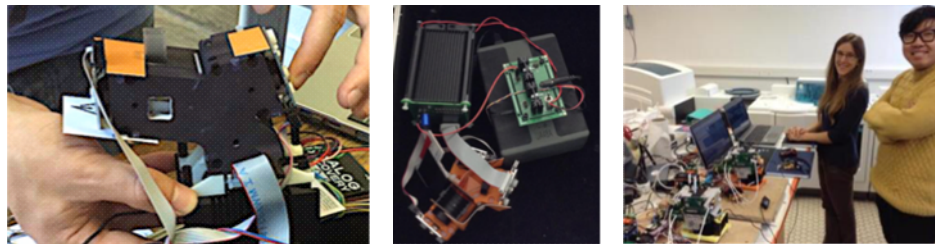


Project Inception

Company Incorporation

2014 – 2015: 550 K€ Post-Money Valuation: 5M€

First functional prototypes of blood analyzer (Beta-Bioled™) and proof-of-concept of the first “Light” tests on human serums



Death

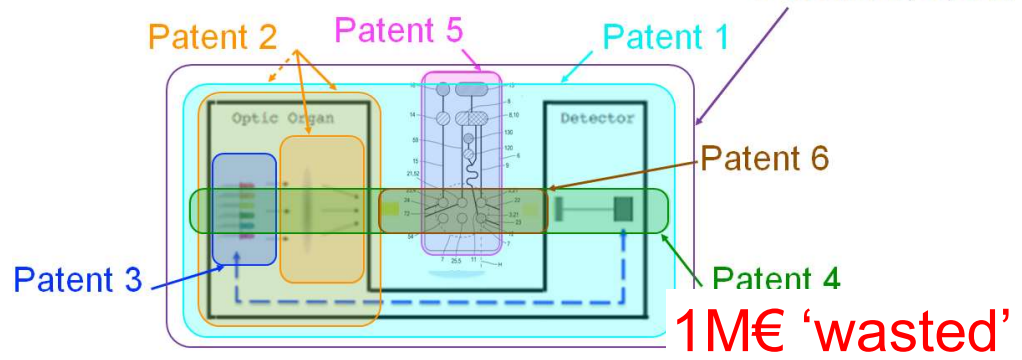


Achievements before death...

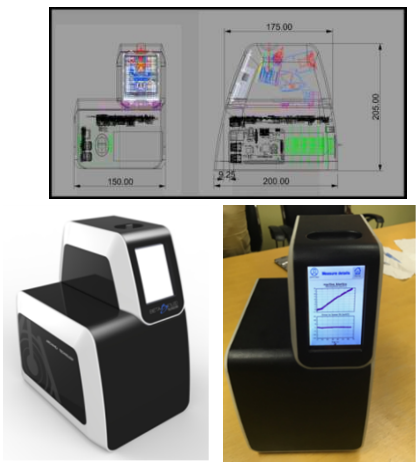
Tests with Light: ~4
Test with liquid reagent: ~4

PATENTS

7+ applications (4 granted, 3+ pending) Patents 7, 8, 9...



PLATFORM BETY v4

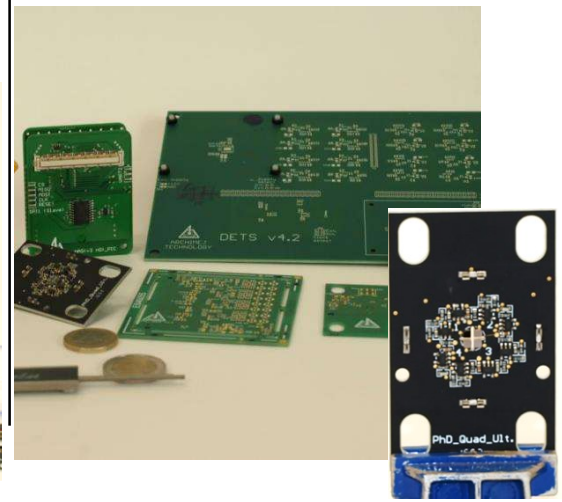


KNOW-HOW Light Source (μ LSD)

16 LEDs from 300 to 900nm



Electronics



Filter

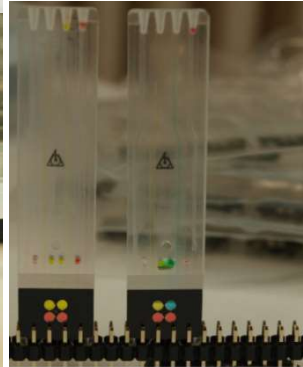
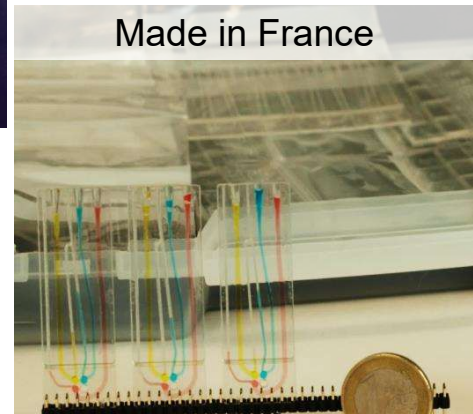


Disposable

Optical Chambers

Made in France

Made in China



“Gamma Project”: Because a portable 1€ blood panel WILL change the world

ONLY with LIGHT => Low-Cost, Robust, Pharma-independant



But how could it work?

- $A @ \lambda_{LEDs}$
- $\Delta A @ \lambda_{LEDs}$ versus T° of blood
- $\Delta A @ \lambda_{LEDs}$ versus Photo-chemistry
- $\Delta A @ \lambda_{LEDs}$ versus Photo-degradation

“Gamma Project”: Because a portable 1€ blood panel WILL change the world

My target by Mid 2018:

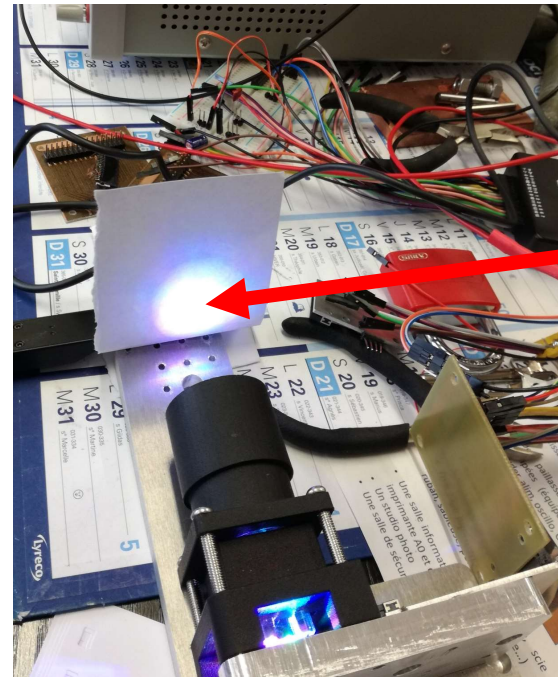
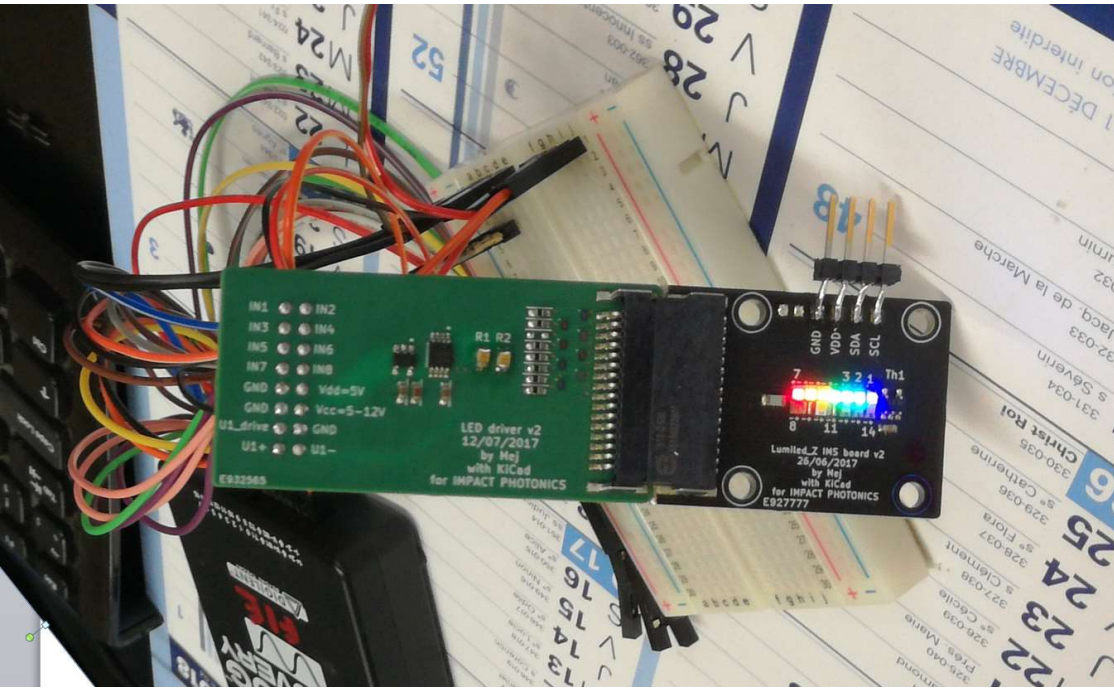
What blood tests can be done with light ONLY?

Plan:

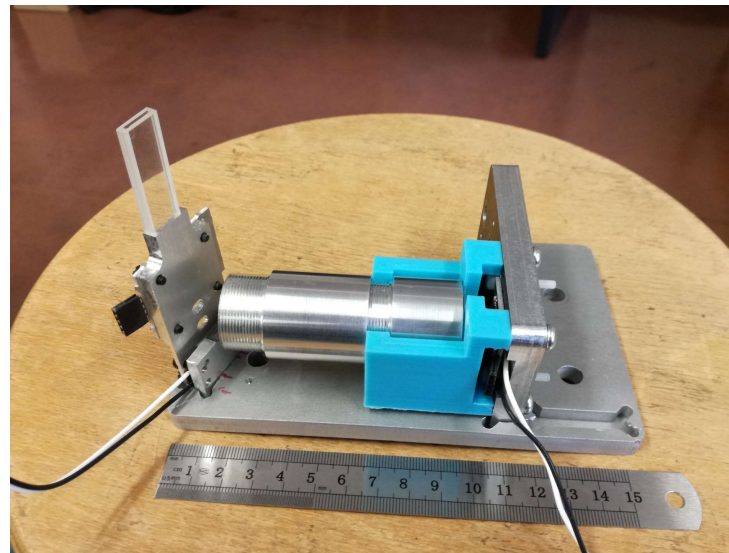
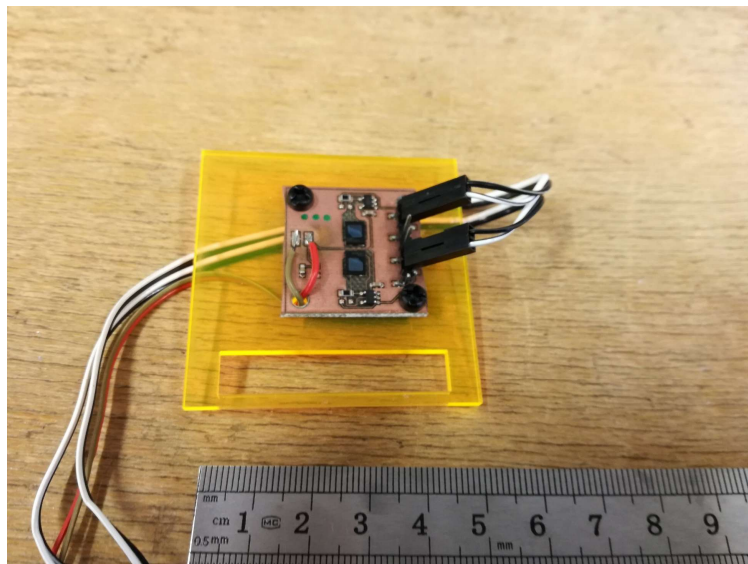
1. (re) Build a high sensitivity absorption spectrometer (80% done)
 2. Characterise pathological blood samples (1% done)
-

Profile needed:

- . Blood hunter
- . Data-scientist
- . Bio-chemist
- . Other?



1 to 10 mW
Over UV-VIS-NIR



“Gamma Project”: Because a portable 1€ blood panel WILL change the world



open source
hardware

Business Model TBD...
Open hardware & software, but closed database?



Explore Our Newest Products

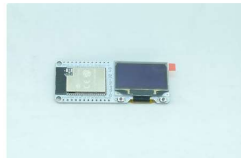
Find Interesting Things



Shield for WeMos D1



Happy Cloud PCB Keychain
(White Pixelated)
The Cloudartist
\$8.99



WiFi Packet Monitor V3
(Preflashed D-duino-32 SD)
Travis Lin
\$19.00



GRiSP-base board with SD Card
Peer Stritzinger GmbH
\$210.00

The Smart Citizen Kit: Crowdsourced Environmental Monitoring



CROWDSOURCED
ENVIRONMENTAL
MONITORING



[HTTP://SMARTCITIZEN.ME](http://SMARTCITIZEN.ME)

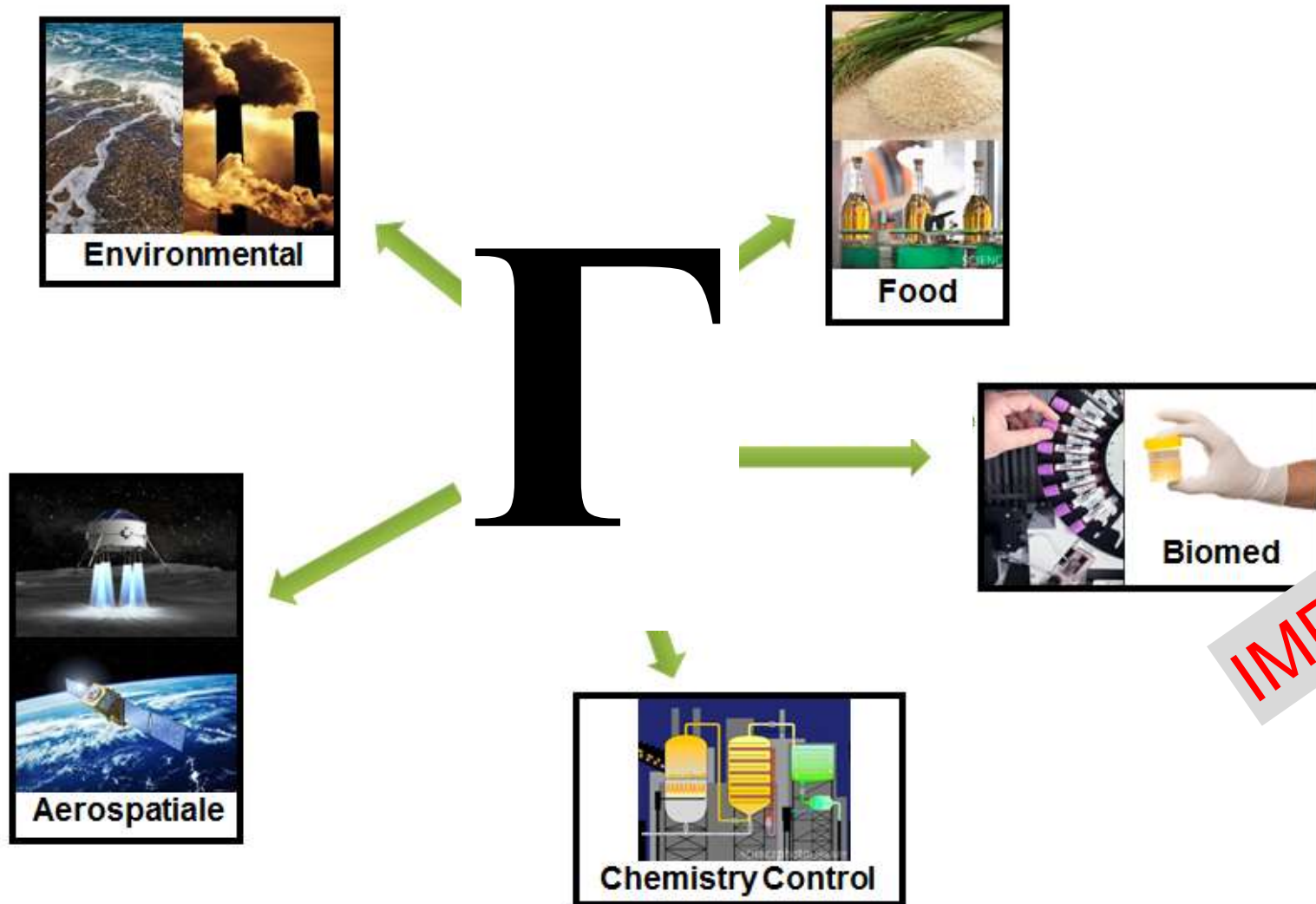
An Open-Source Environmental Monitoring Platform consisting of arduino-compatible hardware, data visualization web API, and mobile app.

Order yours today!

Créé par
Acrobotic Industries

517 contributeurs ont engagé 68 000 \$ pour soutenir ce projet.

Other potential application markets:



IMPACT