

## Minutes Meeting 2 30.09.2016

**Present:** Dominik, Loïc, Cyrill, Louai, Tamara, Mikka

**Excused:** -

**Head:** Cyrill

**Minutes:** Dominik

Brainstorming list (first session)

- Peltier element
- Gravity (shaker)
- Wearable
  - Shaker
  - Backpack
  - Shoe
  - Ring
  - Connected
  - Headlight
- Design product
  - Stressball
  - High end
- Functions
  - Bottle opener
  - tool knife
- Propeller → ski/bike

More concrete idea list for session 3:

- ~~Headlight with Peltier element → new technology, not predictable → high risk~~
- **Wind headlight for ski / bike (easiest) 3**
- ~~Stressball~~
- ~~Credit card format LED with Piezo energy harvesting (promotional gift) → as for peltier pretty new technology, not predictable → high risk~~
- **Classical Crank 1**
- **Headlight with crank/shaker in hand 1**
- **Removeable lighth on shoes 3**

## - **Magneto-inductive shaker 6**

- How much power? 0.625 W → 20% efficiency = 125 W
- Is it miniaturisable for a headlight? Battery like design → main design (prototype!)
- emergency solution: 2 modules → hand shaker and headlight
- ~~Piezo energy harvesting → as for peltier pretty new technology, not predictable → high risk~~
  - How much power?
    - a lot of V's not much A's.
  - ~~Which sizes of elements are available?~~

- ~~Key - plastic with light when pressed.~~
  - piezo energy needed -> as for peltier pretty new technology, not predictable  
-> high risk

#### Responsibilities/Tasks:

- Dominik: Harvesting (Head); Storage
- Loïc: LED output (Head); Storage
- Cyrill: Storage (Head); Harvesting
- Louai: Structure; LED output; Head advisor
- Tamara: Structure (Head)
- Mikka: Packaging, marketing and presentation (Head); PCB layout; Harvesting (Helper)
  
- Basic ideas of weight and size
- Structure: (Tamara, Louai)
  - Find ideas for interfaces (buttons) -> comfort
  - PCB mounting, basic idea
  - Materials: headband, plastic, etc.
  - Production
- LED output:
  - Chose a LED (luminosity comparison, efficiency, etc.) -> Design driver! [for 14.10.2016] (Loïc)
- Harvesting:
  - Conversion (Mikka)
  - Optimize mechanical harvesting (frequencies, etc.) [for 14.10.2016] (Dominik)
  - Engineering model [for 21.10.2016]
- Storage:
  - Define storage type [for 14.10.2016] (Cyrill)
  - Storage size (650 mW Led)
  - Lifetime
- Market research:
  - concurenz products (Mikka)
  
- Create a Trello to organize data collection

#### Hints:

- Create a good market case. (Someone needs to buy it)
- 2 modules possible, but should be pretty small and make a good marketing case
- Li-battery -> shipping problems & charging cycle
- Define interfaces (ICD = Interface Controll Document))
- Things added to the drive need to be added to the blog as well!!!
- Think of power losses if there are 2 modules

#### Shops:

- <https://us.misumi-ec.com> (Mechanical parts)