

Flying auto-rotating Seed with animated lights

Apasri Titatarn

Master Project : proposing idea for 3D MID

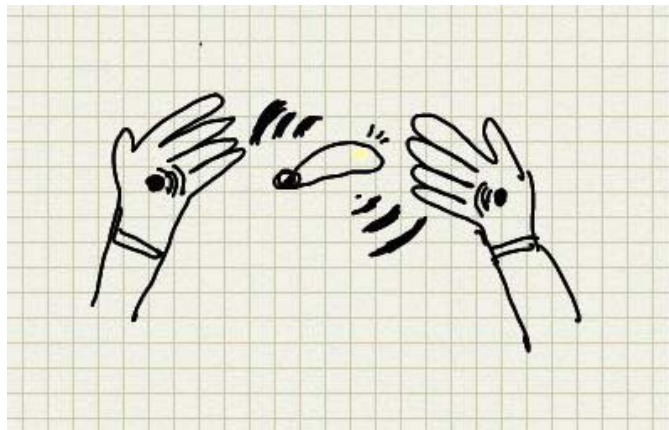
Future Lab 2013

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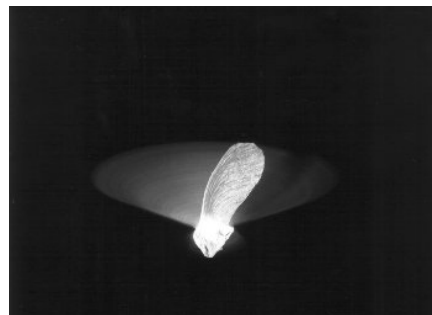
Interface Design

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With the impression of the nature of Ahorn seed falling from the sky, the kids put their hand up in the sky try to catch it. I proposed the project of using 3D MID in the shape of the seed with antenna and the participant wear a gloves to put around the seed to keep it rotation in the middle of the air. Then the seed will display colorful light changing color when rotating the hand gesture.



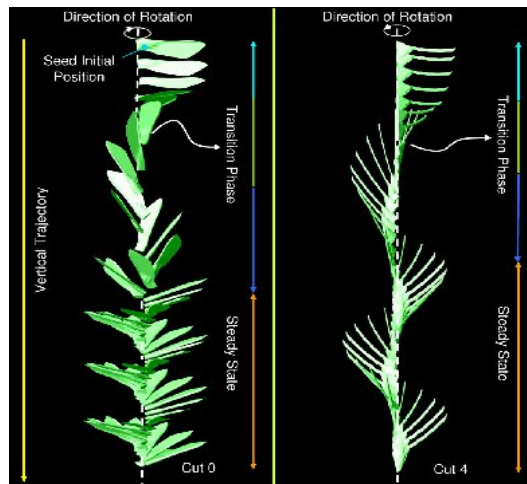
From the natural shape and the flying style of Ahorn seed, it is very challenging to create flying object imitating it because of its thin and light weight but it would be amazing product to show the facility of 3D-MID technology which allow to add small sensors and include the circuit into the object.



Benefit of using the shape and flying style of Maple seed ...“it is able to gently touch down after a period of flight causing no damage to the on board electronics, thus eliminating the need for any type of parachute or landing system.” William E. (<http://dottech.org>)

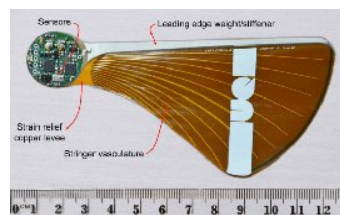
The proposing idea is to create Ahorn seed shaped- auto rotating object with LED-light and antenna. Once the object is threw up into the sky, it start rotating itself and fall down slowly. The light will lid up.

-Interact with the gloves with magnetic field, when the hands are near the seed, the magnetic field created. The seed will keep on rotating without falling down, and the color of the light can be controlled. With the beautiful falling line of the seed.



from "The kinematics of falling maple seeds and the initial transition to a helical motion"
http://dragonfly.tam.cornell.edu/publications/2012_nonlinearity_kapil.pdf

After gathering information of the previously existed research about Ahorn seed, it is confirmed by a research done by a research group of the University of Queensland Australia that it is possible to create flying object imitating Ahorn seed. The researched group successfully create a flying object called UAVs (Unmanned Aerial Vehicles) which is said that it is "inexpensive, disposable" and can be controlled the landing point.



Smart Dumbbell

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With the help of technology in smart object, many types of sport equipments are developed to be able to inform the users useful information such as amount of calories they have burnt and guide them to the more precise correct movement of the users.

Nowadays large scale exercise equipments such as running tracks are developed to be super smart. They can display every useful information for doing sport; calories, heart beat rate, distance, play along the music and create illusion pictures in front of the runner in a big screen. With its large size, the running track can be included with all the sensors and complicated circuits with out any problem. On the contrary, when it turns to the smaller type of exercise equipment like dumbbell, this categories has not been developed much due to the limitation of the size and the portable stand alone property.

With 3D-MID technology, it is possible to include all the required sensors and complicated circuit in the 3D shape of the dumbbell, and make it become smart objects which can show information through smart phone.

- Detect heart beat rate
- calculate burning calories
- count the reps
- **Special for dumbbell workout, the way and the correct degree which the dumbbell is lifted is very important to build specific muscles. Smart dumbbell can tell the degree that it is lifted, to hepl the user get the precise movement

Target

- Fitness studio

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- Adding many sensors creates no problem of increasing weight of the object because of its original weight is far more.

3D-MID-Technology

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Master project

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Traditional remote controles



Proposed remote control

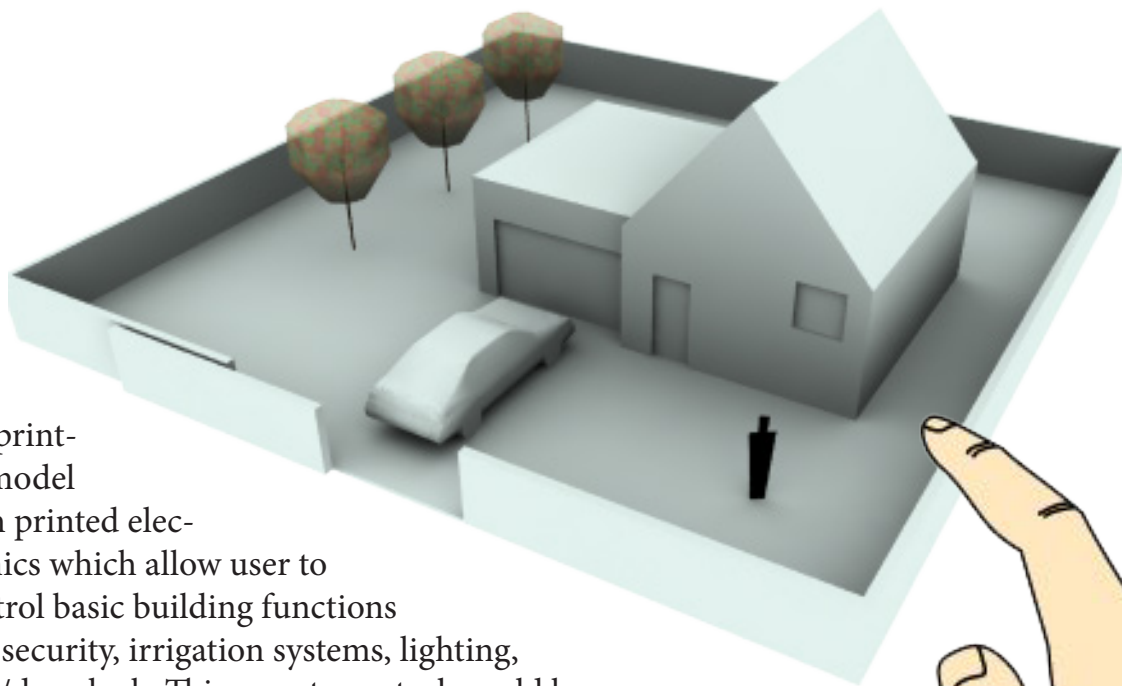


3D printed model

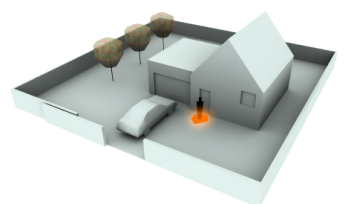
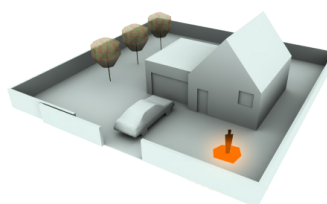
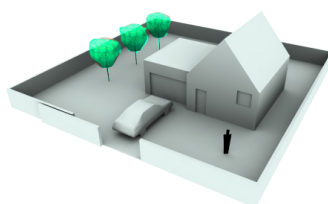
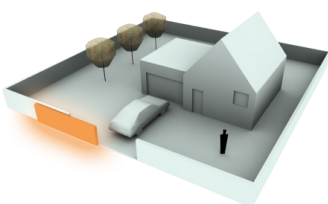
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Printed electronics with LEDs and switches



3D printed model with printed electronics which allow user to control basic building functions like security, irrigation systems, lighting, gate/door lock. This remote control would be easier understandable for kids and older people because of its shape and functions. Simple 3D model with integrated switches and LEDs would give just the most important information. For instance, green LEDs started blinking by reminding that you should water your plants in the garden. Any building shape could be printed with electronics included. This possibility would allow customer to have a unique remote control just for his/her house.



Message Pin System

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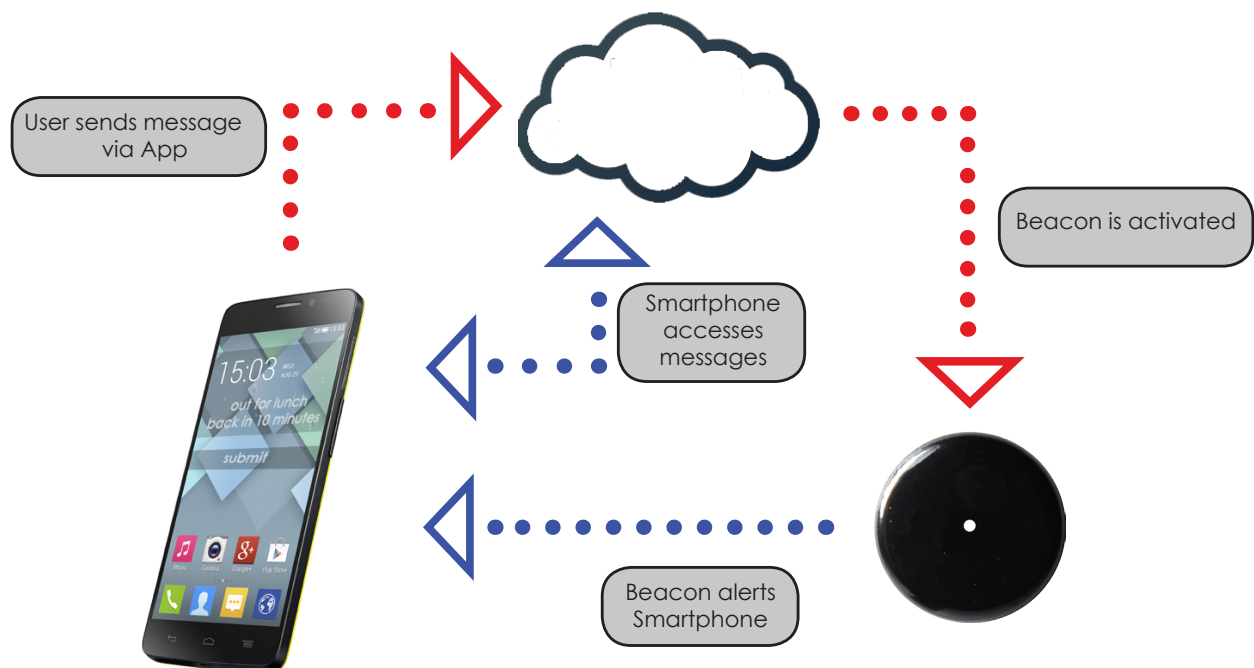
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Analog message boards have been a part of houses and offices for a long time, they are commonly seen on doors or inside rooms to remind people of pending tasks or appointments, among other things. The Message Pin System proposal's objective is to build up on that concept using MID-Technology in communication with smartphones to control the access to the information.

The system would consist of a smartphone app and a series of small beacons made with MID-Technology. These beacons would be programmed to send a signal to a smartphone, making a message and/or reminder appear in the smartphone of a member of the app's network when he/she comes near it.

This could be an interesting tool in an office or a home environment, making it possible to leave notes and messages to intended receivers in specific locations. And it would also be useful for one self, as a reminder system of things to do or take at specific locations.

The usage would be extremely simple, the user would enter the smartphone app and access one or many of the pins in the system, then select the intended receiver(s) from the list of members of the desired network, then he/she would write the intended message.





Remember me

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The idea comes from the necessity to remember different activities during the day, especially parents who spend part or most of the time in the car.

This simple object is synchronized with your mobile phone calendar or even with more of this projects, it will help you remembering the quantity of your daily tasks and the time you will have to do it without losing track.

It is a talking recordatory assistant inside your car, this little friend will tell you what is the next activity, also you will be able to record new activities, so you won't have the chance to forget it later without stop driving.

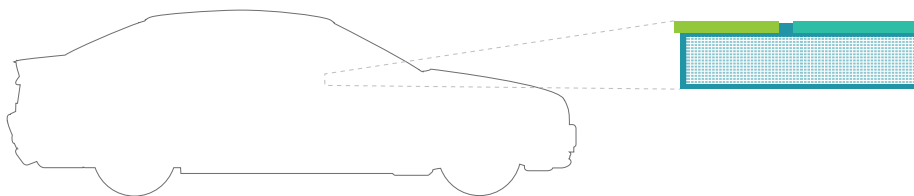
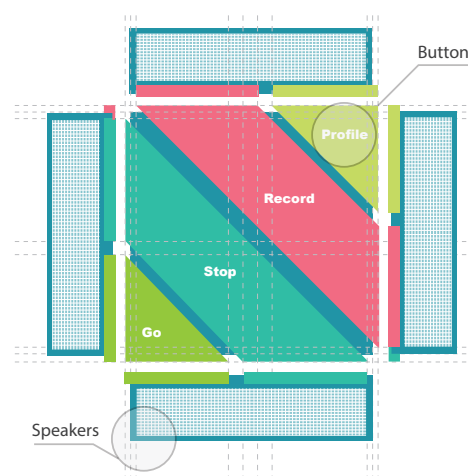
The design is very simple, just a little silicone brick with 4 buttons GO, STOP, PROFILE, RECORD, a speaker and a microphone and people will be able to find it in different colors.
The object will have no screen, is only about sound and light .

Target Group

People 25 -45 who spend many time in the car or the office and hast lost of activities involved

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- Keep track of your own and your kids activities
- Mobile synchronization with calendars
- Record a new activity so u wont forget it later
- Speaks out loud so you don't have to stop driving
- create diferent profiles
- little and light in case you want to carry it
- It will tell you your daily tasks with the time
- It reminds you of the next tasks (10, 15, 30 min before)



Wine Defects Detector

For Master Wine Makers & Wine Enthusiasts

Master Project-Future Lab-2013WS

Bauhaus-Universitaet Weimar

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In general, a wine is safe-guarded by observing an acceptable range of pH, acidity, alcohol and sulfur dioxide. Unfortunately, during the winemaking process, infections can occur if equipments are not sanitized carefully, storage conditions are not proper. Even if the wine is of good quality upon bottling, transportation and cellaring conditions can also affect the final quality. As a homemade winemaker or a wine enthusiast, before drinking normally you are suggested to check your homemade wine is spoiling or not. The basic steps in assessing a wine are as follows: Appearance, Nose and Palate. Bad wine is the result of chemical changes that have taken place in the liquid, making the wine unappetizing to the taste buds and unhealthy to drink. Sometimes bad wine has harmful substances which harm our health.

Your Wine could be spoiling in every process: **wine making, cellaring, storing.**

Knowing and **Controlling conditions** can affect your final wine quality.

Wine Defects Detector is designed as an new perspective to assess wine.

It will inspire all **Master Winemakers** and **Wine Enthusiasts**.

- *Wine Defects Detector, which could be composed of wine defects detect devices, can help you to check whether the wine containing harmful substances. They offer a scientific detecting wine making matrix by working together.*
- *You can easily prevent drinking bad wine by taking just a minute to check the quantities of harmful substances in wine. Factors such as pH, temperature, residual sugar, nutrients, oxygen will affect the accumulation of harmful substances if they are not controlled within the range.*
- *Every detecting device is oversmartering to identify how you wine has gone bad.*
- *Tracking and recording wine detecting data can help you to alter and refine your winemaking and storing process in the future.*

How to tell when your homemade wine is spoiling? There are essentially four things that constitute defects in a bottle of wine such that you should not drink it: It can be corked, oxidized, maderized or having sulfur smell. **So, how does wine spoilage come about?** There are two possible causes: chemical spoilage and microbial spoilage.

Process	Wine Making				Storing
Harmful Substances	Quantities of Nitrates & Left Synthetic Fertilizers	Mercaptans			
		Disulfides & Free Sulfur Dioxide			
		Hydrogen Sulfide			
Wine Making Environmental Factors				Temperature	Temperature
				Humidity	Humidity
				Nutrients	
				pH	
Resulted Defects Factors				Residual Sugar	
		Oxygen		Nutrients	
		Carbon Dioxide		Acetic Acid & Ethyl Acetate	
Factor Analysis	Raw Produce	Causes of Chemical Spoilage		Causes of Microbial Spoilage	

The most common defects of spoiling wine, and spoiling factors analysis and how to detect them.

Wine Defects Detector

For Master Wine Makers & Wine Enthusiasts

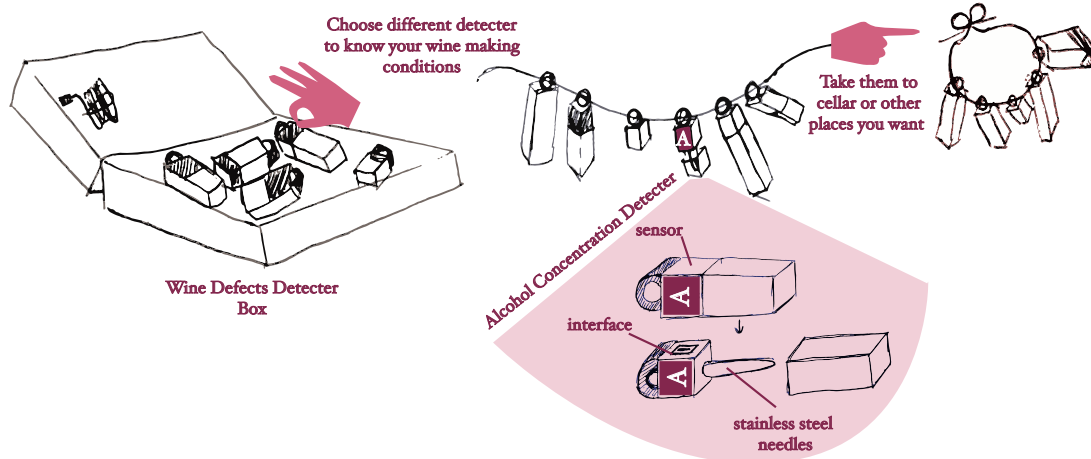
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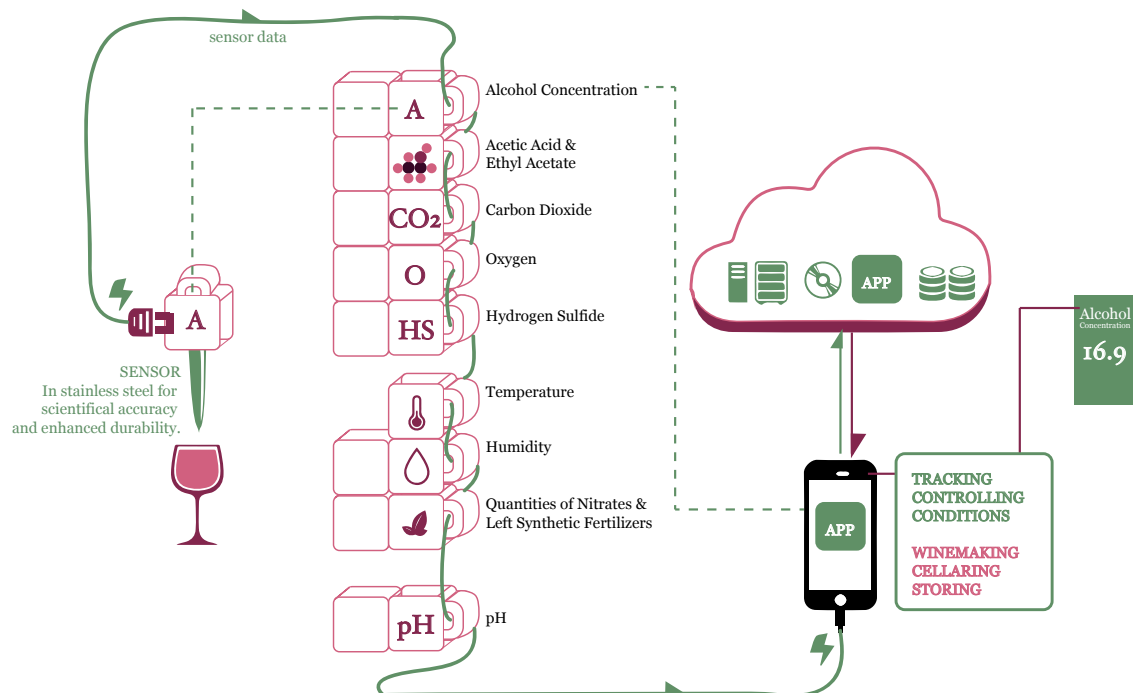
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Wine Defect Detector could help you alter your winemaking process by offering the conditions data of the most common defects detecting.



- Stainless steel needles connect to different kinds of sensors each one of them can detect specific wine ingredient. All the wine ingredient information can be transformed by Headphone Cable or data cable.
- The smart phone app receive the information and store the wine ingredient information to its hard disk. The app will do some necessary processing such as marking different kinds of wine specific ID, environment surrounding, the wine's history, the area your wine stand and etc.
- With cloud service, the app has the ability to make a judgement by its own data base which stored in the smart phone.
- The server receive the wine information and do a large data comparison.



References

NYMag: [The Four Most Common Defects and How to Detect Them](#)
 Practical Wine: [How to Tell that this Wine has Spoiled?](#)
 WineEnjoymentGuide: [Corked Wine/Spoiled Wine/Tainted Wine](#)

Resources

NYMag: [The Four Most Common Defects and How to Detect Them](#)