

## 2006 MIT \$1K Award Winners

### *Information Technology winner*

#### **Borisville**

OpenContentMart (OCM) is a forum to create, publish and trade interactive web content. While similar to MIT OpenCourseWare and Wikipedia aiming to provide valuable content in public domain, OCM goes beyond the static content by allowing participants to create interactive online tutorials, questionnaires, stories, and textbooks that could adapt to user inputs. Authors not only have option to release their work into public domain and profit from voluntary donations but may also sell content to individuals or self-organized groups with consequent publishing of the content on the web site. OCM also services participants to pool their resources to buy content into public domain, giving authors fair compensation for their efforts, while publishing the material freely and permanently in public.

### *Biotechnology winner*

#### **HEMETRICS DEVELOPMENT**

Hemetrics is developing a rapid, accurate, handheld device for measuring hydration levels, initially in the chronically dehydrated elder population.

### *Tiny Tech winner*

#### **MAD Nanolayers**

Multi Agent Delivery Nanolayers has pioneered a novel layer by layer coating platform technology for delivering multiple agents sequentially in a controlled manner for therapeutic and non-therapeutic uses. Our technology can impact many markets in dire need of sequential delivery of active agents, like orthopedic implants, cardiovascular stents, fragrance releasing perfumes in consumer goods and fertilizer coated seeds in agriculture. Our first product offering will be delivering antibiotics, painkillers and growth factors coated on orthopedic implants to reduce the chances of infection, rejection and subsequently revision procedures. With reduced rejections of implants, we aim to reduce the hospitalization costs and improve patient life by mitigating pain and postoperative complications.

### *Consumer Products winner*

#### **RadioSherpa**

RadioSherpa, Inc. has developed the first real-time program guide and search engine for terrestrial radio. This guide allows radio listeners to find programs in real-time and to listen to them via the Internet or via radios leveraging the RadioSherpa solution.

### *Services winner*

#### **RemesaTel**

RemesaTel enables international remittances through SMS technology. Drawing on the insight that mobile phones have higher penetration among immigrants than bank accounts, RemesaTel offers huge convenience over traditional money transfer options and increases access to service for large unbanked populations. Worldwide remittances are a massive \$230 billion market even excluding substantial informal flows – we target nearly \$14 billion in transfers by unbanked Mexican immigrants in the US.

## ***Social winner***

### **Bagazo**

Indoor air pollution caused by cooking fires is an incredibly under-publicized problem.

- o Acute respiratory infections are the leading cause of death of young children around the world, killing more than two million people annually.
- o Smoke emitted by wood and dung cooking fuel is the primary factor contributing to respiratory infections in the developing world.
- o 2.4 billion people rely on dung or wood-based products as their primary cooking fuel.
- o Furthermore, the use of wood-based cooking fuels has led to severe deforestation throughout the world. Bagazo is a non-profit organization dedicated to addressing these issues by finding an innovative energy source for the poorest people of the world.

Utilizing research from MIT's Development Laboratory (D-Lab) and funded in part by a MacArthur Fellowship Award, we have developed a unique process to create concentrated cooking fuel from agricultural waste products. This fuel will offer a viable substitute for the wood, dung, or petroleum-based products and will create business opportunities at the grassroots level.

## ***Energy winner***

### **AeroVortex Mills**

The Company AeroVortex Mills Ltd is a wind technology company. It is currently developing a pioneering mechanism, which significantly enhances the efficiency and energy-capturing potential of wind turbines and improves their cost-effectiveness in low wind areas. This technology will substantially improve the competitiveness of Class 4 sites and make them more attractive for wind development.

Wind Technology for the Future

AeroVortex is an Innovative Technology that can be attached to existing, or integrated into new wind turbines. It uses models of Nature to change the way the air flows over turbine blades in order to achieve the following:

- Increase Output Efficiency
- Massively expand the potential to use wind turbine technology in low wind areas and closer to power grid lines
- Reduce Noise

Technology will ultimately be the solution for using Low Wind Turbines to harness wind energy, efficiently and competitively to existing high wind speed technology. In the near future, high wind speed Class 6 sites will be fully developed and wind energy will plateau. Currently, low wind Class 4 sites are not being exploited yet, even though the size of this land area is 20 times bigger (!) than that occupied by high wind Class 6 sites. Also, Class 4 sites are a lot closer to power grid lines.

Unstable global fuel supplies and deteriorating environmental impact of fossil and nuclear energy sources, make it imperative that we use technological advances in order to expand the use of Renewable and Sustainable energy sources into the future.

## ***Future Technology winner***

### **OLED**

LightFace will manufacture customizable luminescent panels for high-end architectural lighting applications. Whereas at present, architects are constrained to use point source lighting, LightFace products would offer the ability to customize the shape, form, and area of lighting panels. This would allow for the integration of lighting design and architecture to an unprecedented degree, creating exciting new aesthetic environments in high-end retail spaces, concert halls, museums, and ultimately, private residences. Until recently it was not feasible to make this kind of product, but the development of OLED technology allows luminescent panels to be cheaply printed onto flexible substrates of different sizes and cut to shape. By utilizing its patented method to achieve a 10-fold fluorescent OLED lifetime improvement, LightFace will become the first supplier of a customizable luminescent panel with an

acceptable product lifetime. Additionally this IP will generate licensing revenue to fund R&D for several years.

### ***Medical Devices winner***

#### **picosense\***

Every day 3 million people in the U.S. suffer from peanut allergies, afraid of the life-threatening allergic reactions that can occur from minimal contact with peanuts. Currently, the only means of preventing a severe allergic reaction is a lifetime of strict avoidance. Despite their vigilance, each year thousands of people are rushed to emergency rooms due to the accidental ingestion of peanuts. Picosense offers the P.N.U.T. (Personal Nut Ultra-trace Tracker) – a portable, solid-state sensor that detects trace amounts of peanut contamination. It will give users valuable information as to whether a meal is safe to eat or a surface is safe to touch, allowing people with a peanut allergy to better manage their anxieties and improve their quality of life.

“A peanut sensor would be extremely useful for my patients and I would be the first to recommend it. It's a device that I can see being used daily by not only families, but also institutions like daycare centers, schools, and restaurants as well.” Michael C. Young, MD (Former President of the Massachusetts Allergy Society & Author of The Peanut Allergy Answer Book)

### ***Development winner***

#### **Solar Turbine Group**

For as long as the sun rises, the Earth will have a sustainable source of energy: solar energy. Harvesting this abundant energy source and putting it into the hands of people in under-developed areas is our ultimate goal. To that end, we've designed a solar power generator that provides heating, cooling and electricity for off-grid communities and small businesses in developing world countries. Imagine if you could take components from a car engine (pumps, alternator, turbocharger) and recombine them in a new way to create a simple turbine. Add to it a source of free fuel, the sun, and you get a clean, sustainable and inexpensive energy source which could generate hot water, electricity and refrigeration for community centers, clinics, schools and small businesses in poverty stricken areas where there's limited access to energy sources, but plenty of access to the sun. Our product is an innovative solar micro-generator that combines solar thermal concentration with a simple thermodynamic cycle to generate the entire range of commercial and residential energy needs unlike a solar photo-voltaic (PV) panel that generates only electricity.