ASM INTERNATIONAL
The Materials Information Society
LONG ISLAND CHAPTER

METALLAGRAM

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Next Meeting . . . . . Wednesday, April 18, 2018

Where . . . . . Old Field Club, East Setauket, NY

******* Student Night *******

Oral and poster presentations by Stony Brook University Seniors

Joint Meeting with ESG/ESM Programs

6 pm…Posters Start 6:00-9:00 pm…Yummy Food

7:30 pm…Two Oral Presentations

Members … FREE! Guests … FREE! ASM 25 years … FREE! Students … FREE!

Cocktail-party style is three hours long. Included are seasonal fruit and international cheese display, antipasto display, pasta station, and high end passed hors d'oeuvres. Cash Bar.

RSVP to Chandrani Roy … Chandrani.roy@stonybrook.edu

Directions to Old Field Club

From The Long Island Expressway (495) either direction, take Exit 62 N (Nichols Rd. Rte 97). Follow Nichols Rd. to the end, turn left onto Rte. 25A, go about one mile. Turn right onto Quaker Path (opposite Stony Brook LIRR Train Station) and stay on Quaker Path north 1.3 miles to fork. Stay left at fork onto Mt. Grey Rd. and follow to West Meadow Rd. Turn left onto West Meadow Rd - the Old Field Club will be on the left, after the tennis courts. Physical address: The Old Field Club, 86 West Meadow Road, East Setauket, New York 11733. Telephone: 631 751 0571. Web site: http://www.oldfieldclub.com/.

The Presentations

Bio Send: Wearable Device for Continuous Monitoring Physiological Parameters

Pat Benedetto, Jordan Liebman, Andy Queliz-Tejada, Jessica Quizhpe

Exerting energy while exposed to extreme temperatures can lead to a number of health issues. Individuals at risk of developing temperature-related ailments would benefit from consistent monitoring of their health metrics. This can be done through the use of a wearable upper arm band that continuously measures and monitors body core temperature, oxygen saturation levels and heart rate through the use of non-invasive sensors. Detection of abnormal physiological parameters, like low oxygen levels for example, will alert the user and a third party so necessary precautions can be made to prevent any health issues from worsening.

Cyclist Safety Device to Prevent Rear-End Collisions

Chen (Kevin) Hao, Sebastian Puerto-Arenas, Sau (Jimmy) Lim, Jason Cheng

When navigating complex roads or densely populated streets, cyclists are in danger of accidents with neighboring cars and other cyclists. Rear end collisions are the leading cause of cycling fatalities in the United States. Adding on lowered visibility situations, cyclists blind spots, the lack of bike lanes, and comparative size making cyclists difficult to see exacerbates the situation. A device that can sense oncoming traffic, predict rear end collisions and alert drivers of the cyclist's presence is necessary to prevent potentially fatal outcomes.

Longboard Power Bank

Aasif Jain, Dohee Kim, Hanjie Tan, Kenneth Luong

The Longboard Power Bank is one of the solutions to extend battery life for USB devices. The design will convert mechanical energy produced from turning the longboard into electrical energy. This can be done with the help of dynamos attached to the wheels of the longboard. The dynamo will generate electricity as it rotates with the wheels. The current generated from the dynamo will be stored in the power bank which will be used to charge USB devices.

Centripetal Force Water Filtration System

Felicia James, Jerin George, Joy Abasolo, Mckingsley Williams

Clean drinking water is not easily accessible in disaster-affected areas. Lack of clean water will ultimately lead to various diseases and severe dehydration. The centripetal force water filtration system provides clean drinking water from contaminated water sources. The device consists of multiple filters, water passes through the filters using centripetal force driven by a mechanical device powered through a rechargeable battery.

The Presentations (cont.)

40-yard Dash Device

Jingyue Zheng, Constantine Sargentini, Ilya Stotland, Barnabas Mako, Kelly Pabon

Short sprints are commonly used to determine the speed and acceleration of athletes. These tests, such as the 40-yard dash, are timed during solo training sessions. However, studies have shown that athletes obtain better results when racing a physical competitor, such as in a game. Therefore, in order to achieve optimal performance during training that accurately represents an athlete's skills, a means of simulating a sense of competition is needed. The primary design goal is to create a mechanical pulley system which can be programmed to move a rope at a desired pace and attach a marker to the rope so that athletes can race against an imaginary opponent. By doing this, athletes will provisionally receive better results in training, and ultimately decrease their 40-yard dash times.

Smart Dispenser

Justin Cohen, Alexandrea Innes, Matthew Mannetta, Macky Li

Commercial buildings often have several bathroom stalls that may have insufficient amounts of toilet paper. The Smart Dispenser serves as a communication system that allows the custodial staff to get updated when the toilet paper supply is diminished. Using an optical sensor to distinguish the color of the toilet paper from the cardboard roll, the supply is always monitored. A GSM wireless communication device will be used to send a text message to the custodial staff once the optical sensor detects the color of the cardboard roll. A LED light will be used in the event that the notification system fails to increase reliability of the product. All electrical components will be encased within the dual toilet paper dispenser in order to reduce the exposure of wires to the environment.

Garden Maintenance System

Katarzyna Bramska, Ryan Gao, Lee Stetson, Zach Torpie

The Garden Maintenance and Monitoring System idea will be designed to effectively combine soil pH, moisture, and light sensor probes via an arduino system as well as automatically water small plants such as beans, strawberries, etc. The system will measure soil runoff collected below the soil container. Once the water reaches a pH from water certain level in the collection unit, it will be pumped up into a reservoir container and reused to water the plant again. The automatic watering system as well as pH, soil moisture, and sunlight sensors will be controlled and monitored with an Arduino.

Gaslight CO_2 Sensitive Lighting

James Bylicky, Tara Blittner, John Saputo, Michelle Nevins

In a room with automatic light sensors, the lights will turn off after little or no movement. A proposed hybrid CO_2 and motion sensor provides a method to both 1) Detect motion through a passive infrared sensor and 2) Detect CO_2 concentration emitted from a human exhale in order to keep the lights on by determining human occupancy. The proposed design consists of three central components: a CO_2 sensor, a central logic unit to record and process data, and an electrical relay capable of turning on and off a light. The goal is to keep the lights on effectively for a room size of 300 m^3.

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ASM MEMBERSHIP RECOGNITION PROGRAM

Congratulations and thank you to our members who reached the following milestones:

Life – Andrew Nicoll
25 Years – Lorraine Tawfik
15 Years – James Quinn, Christopher Dambra
5 Years – Genaro Layme, Dominic Marcoccia, Collin Olson, Terrence Rouge

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Metro NY-NJ Chapter

(http://www.asminternational.org/web/metro-nynj-chapter/home)

April 24, 2018 **Speaker: Susan Kazan**
Topic: Forensics of Material Science
Location: tba

Long Island Chapter Meeting Schedule

CLOSED FOR THE SUMMER