2011 American Society for Engineering Education North Central and Illinois-Indiana Section Conference

April 1-2, 2011

Central Michigan University

Mt Pleasant , MI 48859

Full Papers

- Successive Experiments in Frequency Analysis and Technical Writing Component of an Instrumentation Laboratory Course in Mechanical Engineering
  - Erik Bardy, Mark Archibald, Mark Reuber
- International Based Engineering Management Course at Foreign Study Center with French University Partnership
  - Erik Bardy, Mike Bright, Frank Insignares, Mark Reuber
- CAN-Based Instrumentation With CANoe and MATLAB
  - David McDonald

Full Papers, cont'd.

- Student-Driven Development of a 1.2-MW Campus Wind Power Project
  - David R. Sawyers, Jr
- Developing a Multi-Faceted Survey of Engineering Course for Junior and Senior Level High School Students
  - Robert J. Korenic
- Capstone Lessons to Prepare Students for the Changing World of Corporate Innovation
  - Darrell Kleinke
- Vermilion Point Project, Phase One: Communication Infrastructure and Energy Assessment
  - Ben Martin, Brad Ekin, Eric Hoxie, Jameson Mattice, John Preczewski

Full Papers, cont'd.

- A Directed Project using Underclassmen
  - Gene L. Harding, Sean Hagan, Nathanial Strozier
- Tests for Assessing Graduating EET Students
  - William T. Evans
- A Friendly Approach to Transient Processes in Transmission Lines
  - Andrew Rusek, Subramaniam Ganesan, Daniel N. Aloi
- Energy Students' Perceptions on Global Issues and Engineering
  - Paul J. Weber

Full Papers, cont'd

- Robotics and Alternative Energies Summer Camps for High School and Middle School Students at Baker College
  - Anca L. Sala, Tom Spendlove
- Generator Exciter Replacement and Troubleshooting Efforts -- A Capstone Experience
  - M.M. A Rahman, T. Petersen
- Interdisciplinary Sophomore Design at Oakland University
  - Osamah Rawashdeh, Dave Schall, Richard Haskell
- The Evolution of Freshmen Without Borders: Coordinating International Preprofessional Service within the First-Year Engineering Curriculum
  - Kenneth Reid, Robin White

Full Papers, cont'd.

- Improvement of Engagement and Participation of First Year engineering Students through Metacognition Learning Tool
  - Quamrul H Mazumder
- Use of on-line Metacognition Strategies in Large Classroom to Improve Academic Performance of Mechanical Engineering Students
  - Quamrul H Mazumder
- Teaching the NPD Lifecycle to Engineering Students
  - Terry Robert Schumacher
- An engineering mathematics course project on modelling automobile suspension system
  - Shengyong Zhang

Student Papers

- Free Space Optical Communication
  - Kasey Hixson, Paul Trader and Chris Romanowski
- A CFD Study of Pickup Trucks Aerodynamics
  - Wael Mokhtar, Julie Kim, Justin Pattermann, Varun Menon, Jeremy Pruneau
- ASME H2GO Design Project/Competition
  - Joel Gough, Lance Riedel, Laura Halash, James Martin, Joseph Langenderfer

Student Papers, cont'd.

- The Web Camera Mouse with Smart Base: An Electrical Engineering Design Project
  - Richard Muysenberg, Lisa Zyonse, Olaoluwa Ayinde Fadiran, Wenjun Li, Qin Hu
- Rain is a Good Thing: an ASME Project
  - Aaron Klenke, Stephen Martin, Mark Netzly, Andrew Gross, Daniel Chen
- Mobile Power Generation
  - Ryan Brune, John Garlitz, Jason VanAtta
- 2011 ASME Student Design Competition: Water Powered Model Car
  - Sheri Smith, Timothy Tori, Jeremy Kiley, Nick Grenon, Kristina Lemmer

Student Papers, cont'd.

- The Effect of Crank Length on Delta Efficiency In Recumbent Cycling
  - Tyler Baker, Mark Archibald
- Design and Construction of Vibration Test Stand
  - Michael Krak, Kurt Heitkamp, Lee Heitkamp, Josh Masters, David Mikesell
- Wind Data Analysis and Performance Predictions for a 400-kW Turbine in Northwestern Ohio
  - Caldwell Reed, Sarah Fiffick, David Sawyers
- Analysis of the Power Conversion Efficiency on Energy Scavenging Interface Circuits
  - Kevin Petsch, Robert Balma, Tolga Kaya

Student Papers, cont'd.

- Development of Thin Film Photolithography Process: Patterning Printed Circuit Boards (PCBs) and Copper Electroplating
  - Robert Balma, Kevin Petsch, Tolga Kaya
- Composite Propeller Construction
  - Andy Gunkler, C. Mark Archibald
- Design of Optimal Turbines for Wind Energy Conversion
  - Chuck Witt, Josh Norman, Mark Archibald
- Human Powered Hydrofoil Design & Analytic Wing Optimization
  - Andy Gunkler, C. Mark Archibald

Student Papers, cont'd.

- Dielectric Properties of Low-Density Polypropylene with Multiwall Carbon Nanotube (PP/MWNT) Polymer Nanocomposites
  - Olaoluwa Ayinde Fadiran, Leela Rakesh, Stanley Hirschi, Axel Mellinger, Anja Mueller, James Falender
- Tour Guide Robot: An Electrical Engineering Capstone Senior Design Project
  - Julie Mitchell, Andrew Adkins, Nathan Trela, Kumar Yelamarthi
- Implementing an OpenFlow Switch With QoS Feature on the NetFPGA Platform
  - Yichen Wang, Yichong Qin, Long Gao
- Pipe Loss Experimental Apparatus
  - Kathleen Lifer, Ryan Oberst, Benjamin Wibberley

Student Papers, cont'd.

- Electrorotation of Electroporated Malignant and Normal White Blood Cells
  - Wenjun Li, Qin Hu
- Alternative Materials for Steam Locomotive Staybolt
  - Craig Norman, Edward Donatham
- Dielectrophoresis (DEP) of Spherical Cells after Nano-Second Pulsed Electric Field (nsPEF) Induced Electroporation
  - Olaoluwa Fadiran, Qin Hu
- Heat Index Characterization of the Human Body for a Wireless Track and Alert Sensor System (WTASS)
  - Olaoluwa Fadiran, Tolga Kaya

Student Papers, cont'd.

- Quantifying Helmet Safety: The Design and Construction of a Testing Apparatus
  - Brandon Bryant, Nolan Faber, Shawn Fisher, Daniel Simon, Brian Dejong
- Affecting electronic and wireless devices using low-energy wave-shaped pulses
  - Ben Hopf, Andrew Kimbell, David Silwanowicz, Alex Wolf
- Characterization of Blind, Buried, and Through Hole Vias at High Frequencies
  - Seth Hendrickson, Jon Klein, Josh Manore, Kyson Mathiew, Ketan Shringarpure
- Autonomous Recyclable Material Sorter
  - Oliver J Zemanek, Nathan P Geib, Eric G Tauzer, Jeffrey M Movsesian, Scott F Kiefer

Student Papers, cont'd.

- Microstructural Analysis of Ceramic-Metallic Interpenetrating Phase Composites
  - Anthony Yurcho, Klaus-Markus Peters, Brian Hetzel, Timothy R. Wagner, Virgil C. Solomon
- SmartOutlet: A Remotely Controlled Outlet
  - Ross Stienecker, Andrew Swick, MaryJo Guthrie, Mohammad Alsuraihi, and Srinivasa Vemuru
- Need for Public Speaking in the Engineering Curriculum
  - Dan Budny, Tim Tallon
- A Review on Basic Fuel Cell Design and Applications
  - Dean Alan Boomgaard, Kumar Yelamarthi, Leela Rakesh

Extended Abstracts

- Creating an Atmosphere of Communication in a Deformable Solids Course
  - Craig James Gunn
- Revisiting a Liberal Activity in a College of Engineering Engineers as Poets 10 Years Later
  - Craig James Gunn
- Undergraduate and High School students interested in chemical engineering test the effects of phytochemicals on cancer cell lines
  - K. Virginia Lehmkuhl-Dakhwe, Awet Jonathan Afework
- Using NetFPGA Platform as a Project-Based Learning Tool in Computer Engineering Program
  - Yichen Wang

Extended Abstracts, cont'd.

- Text Messaging as a Tool for Enhancing Student-Instructor Interactions
  - S. Patrick Walton, Daina Briedis, Stephen Lindeman, Amanda Portis, Jon Sticklen
- Development of Rubrics for Assessment of General Education Learning Outcomes
  - Olanrewaju Aluko
- The Robert E Noyce Program at the National Science Foundation
  - Sheryl Ann Sorby