

## **Paul Orleans Biney, Ph.D., P.E**

**Prairie View A & M University**

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### **Position**

**Professor , Director of FAST Center, Associate Director of CFD Institute., & Technical Coordinator of CEES CREST Center.**

Mech. Engr. Dept., Prairie View A & M University, Prairie View, Texas 77446

### **Education**

University of Houston, Ph.D. Mechanical Engineering, August 1987.

Oklahoma State University, M.S. Mechanical Engineering, May 1980.

University of Science and Technology, B.Sc. Mechanical Engr , May, 1976

### **Appointments**

2003–present, Prairie View A&M University, Professor, Mechanical Engineering Department  
1995–present, Prairie View A&M University, Director of FAST Center & Associate Director of CFD Institute  
1994-1997 Prairie View A&M University, Department Head, Mechanical Engineering Dept  
1991-1993 Prairie View A&M University, Associate Professor, Mechanical Engineering Department  
1987-1991 Prairie View A&M University, Assistant Professor, Mechanical Engineering Department  
1984-1987 Prairie View A&M University, Visiting lecturer, Mechanical Engineering Department

**Professional Registration:** Registered Professional Engineer in Texas

### **Teaching Areas**

Fluid Mechanics, Thermodynamics, Heat Transfer, Thermal Systems Design, Senior Design Projects, Thermal Science Lab.

### **Research Interest**

- Thermochemical conversion of biomass into biofuels.
- Nanomaterials, Composite materials (high temperature lightweight polymers and polymer composites), Polymeric Composite Materials: hygrothermal and oxidative degradation reduction research effect of processing on long term stability of PMCs
- Energy systems and Waste Management
- Emission Control and Alternative Fuels for Small IC Engines
- Basic and applied research in fluid flow and thermodynamics,
- Theoretical and experimental research (instrumentation, data acquisition and reduction) on the thermodynamic property determination and behavior of liquid and gases.
- Modeling of Liquid Metal/Water Interactions, Metal Ignition, Heat Transfer and Cooling of micro-electronic device.
- Thermodynamics of fluids in the metastable and unstable states. Development of accurate equations of state and fundamental equations for liquids and gases.
- Applied Computational Fluid Dynamics, Finite Element Analysis and its application in the Thermo-Fluid Sciences.

### **Consulting Experience**

- Technical assistance to Uganda to introduce design modeling at Makerere University, Jan –Mar. 2004
- Technical Assistance to the Republic of Ghana to introduce design modeling at the Kwame Nkrumah University of Science & Technology, July 2003.
- Technical Assistance to the Republic of Ghana to establish Energy Assessment Center at the University of Science & Technology,

### **Membership**

- Member of the Alternate Fuel Research Committee of the Texas Railroad Commission of Texas (Member 2003-2010).

- American Society of Mechanical Engineering (member since 1986),
- Society for the Advancement of Material processing Science, SAMPE (member since 1998),
- American Society of Engineering Education, ASEE (Member since 2000).

### Recent Publications

- Extraction and characterization of triglycerides from coffeeweed and switchgrass seeds as potential feedstocks for biodiesel production; Grace Armah-Agyeman, Michael Gyamerah, Paul O Biney and Selamawit Woldesenbet; *Journal of the Science of Food and Agriculture*, DOI: 10.1002/jsfa.7649, 2016
- “Effects of extended surfaces on temperature distribution inside a fixed bed biofuel pyrolysis batch reactor”, Kamau Tillmutter, Paul O. Biney. Submitted for publication in the Proceedings of the ASME 2015 International Mechanical Engineering Congress & Exposition (IMECE 2015), November 13-19, 2015, Houston, Texas.
- “Kinetics of the pyrolysis of arundo, sawdust, corn stover and switch grass biomass by thermogravimetric analysis using a multi-stage model”; Paul O. Biney, Michael Gyamerah, Jiacheng Shen, Bruna Menezes. *Bioresource Technology* 179 (2015) 113–122.
- Joshua Budu, Paul O. Biney, and Michael Gyamerah; “Biofuels from Biomass: The Current State of Conversion Technologies”. Paper presented at the CREST-RESSACA Environmental and Energy Sustainability Conference in Houston, April 26-27, 2012.
- Ashley Merritt, Paul O. Biney, Michael Gyamerah, “Compositional Analysis of Biomass Feedstock”. A poster presented at the CREST-RESSACA Environmental and Energy Sustainability Conference in Houston, April 26-27, 2012.
- Renee Kendrick; Michael Gyamerah, Paul O. Biney; “Catalytic Pyrolysis of Wood Biomass for the Production of Bio-oil”. Poster presentation at the CREST-RESSACA Environmental and Energy Sustainability Conference in Houston, April 26-27, 2012.
- “Design of Auger Type Bioreactor for Pyrolysis of Plant Biomass”, Senior Design project final report, Mechanical Engineering Department, Prairie View A&M University, 2009.
- “Development of Performance Criteria for Assessing Program Outcomes in Engineering, Engineering Technology and Computer Science Program”, 2008 ASEE Conference, Pittsburgh, June 2008.
- “Direct Assessment Process for Educational Objectives and Outcomes Developed at PVAMU”, presented at the ABET Best Assessment Practices Symposium at Rose Hulman Institute, Indiana, 2006.
- Biney, Paul; Bryant, Milton R.; “A Novel Strategy for the Direct Assessment and Improvement of Engineering Programs Developed and Implemented by Prairie View A&M University”, presented at the ASEE conference in Portland, Oregon, 2005.
- “Functionalization of single-walled carbon nanotubes with N-[3-(trimethoxysilyl) propyl]ethylenediamine and its cobalt complex,” *Journal of Physics and Chemistry of solids*, 2007 in press
- “Dispersion of aminoalkyl-silyl ester or amine alkyl-phosphonic acid Side wall functionalized Carbon Nanotubes in silica using sol-gel processing” *Mater. Lett.* 2007 doi. 10.1016/j.Mat. let.2007.07.030
- Screening Tests for Candidate Cryogenic Tank Materials, 2004 HighTemple Workshop, Sacramento, CA.
- “Thermal Effects on the properties of Epoxy and Polyimide Adhesive Bonded Graphite/Bismaleimide Composites”, *Journal of Advanced Materials*, Vol. 35, No. 2, April 2003, Society for the Advancement of materials and process Engineering.
- Cure Optimization of IM7/5250-4 Prepregs Under Field Repair Conditions, 46<sup>th</sup> International SAMPE Symposium, May 6-10, 2001.
- Study on the Thermal and Hygrothermal Behaviors of Epoxy and PolyInide Adhesives, 46<sup>th</sup> International SAMPE Symposium, May 6-10, 2001.
- Butuk, N.K., Biney, P., and Huque, Z, 1998, “Development of a Reduced Chemical Mechanism for Combustion Simulations of Ramjet/Scramjet Engines” *Central States Section of the Combustion Institute: Combustion Fundamentals and Applications*- Lexington, Kentucky,