



Engineering Mechanics Corporation of Columbus
3518 Riverside Drive - Suite 202
Columbus, Ohio 43221

Phone: (614) 459-3200x264

Fax: (614) 459-6800

E-mail: yhioe@emc-sq.com

Yunior Hioe

Research Engineer

Education

B.S., Industrial, Welding, and System Engineering, Ohio State University (2004)
M.S., Industrial, Welding, and System Engineering, Ohio State University (2006)
Ph.D., Industrial, Welding, and System Engineering, Ohio State University (2010)

Areas of Expertise

Polymer (thermoplastic and thermosetting) and composite manufacturing processes, analysis and testing, experimental design and instrumentation.

Experience

The Ohio State University: Polymer and Composite Lab, Nanoscale Science and Engineering Center (NSEC), Columbus, OH

Research Fellow, Professor Jose. M. Castro, June 2007-2010

- Responsible for mechanical testing facility and conduct test on static, dynamic and impact test for thermoplastic and thermosetting composite materials.
 - Tensile and flexural test were performed to compare and study the decrease of properties caused by regrind thermoplastic materials from automotive parts.
 - Flexural and dynamic loading were used to study the different nano reinforcement advantages and disadvantages in composite parts.
 - Designed fixture system for dynamic flex test to prevent early material failure due to friction.
- Supervise and guide research group for simulation work.
 - Supervised 1 master student to use the heat transfer software previously developed and integrated it with his thesis project
 - Advised and cooperated with other PhD. Student to implement statistical metamodelling approach for smart, self optimizing flow simulation modeling.
- Designed and constructed composite material characterization lab. (working together with partner company under RCP project such as: Owens Corning, Ashland chemicals, and Webcore)
 - Designed fiber porosity, permeability, and compressibility measurement equipment.
 - Machined and constructed porosity and permeability molds, fixturing and data acquisition probes.
 - Programmed LabView data acquisition to measure and calculate observed parameters.

Teaching Assistant, Professor Jose. M. Castro, June 2007-2010

- Assisted and partially lectured 2 different polymer processing class and developed lab projects utilizing flow simulation software and real world research topics.
- Instructed lab sessions for polymer processing and metal forming in general introduction to manufacturing course with 100+ students.

Center for Advanced Polymer and Composite Engineering (CAPCE), Columbus, OH
Graduate Fellow, September 2005-June 2007

- Developed injection molding heat transfer software with multi-cycle capability to predict quasi steady state temperature for both part and mold (sponsored by Honda America Manufacturing).
- Demonstrated the heat transfer software to the automotive manufacturer sponsor and helped identify and resolve potential problems in their new product.
- Assisted microflow rheology experiments to predict apparent slip condition in high shear non-Newtonian fluid flow (sponsored by Omnova Solution).
- Performed In-Mold Coating (IMC) flow simulations.
 - Constructed and diagnosed CAD model to be meshed into 2D mid-plane and 3D mesh data.
 - Analyzed finite element simulation output and created report for industry sponsor

The Ohio State University: System and Network Administrator, Columbus, OH
Graduate Assistant, Mr. Cedric Sze, March 1998-June 2005

- Designed, implemented and maintained departmental servers file storage, physical and virtual network infrastructure and network security systems.
- Maintained 3 departmental student computer labs, multimedia classroom and CAD/CAM lab.
- Assisted department faculty and research computer labs for various troubleshooting and data acquisition needs.

Professional Recognition and Affiliations

- Society of Plastic Engineers
Member, 2007-Present
- Research Assistantship (Nanoscale Science and Engineering Center, NSEC, 2007-2010)
- Fellowship (Center for Advance Polymer and Composite Engineering, 2005-2007)
- Graduate Assistantship (Industrial, Welding, and Systems Engineering Department Computer Lab, 1998-2005)

SELECTED PUBLICATIONS AND PRESENTATIONS

- Y. Hioe, K.Chang, M. Villarreal, and J.M. Castro., “**Minimum “Safe” Cycle Time: Selecting the Frozen Layer Thickness**”, Polym. Eng. and Sci., SPE. (Accepted for publication).
- Z. Cai, Y. Hioe, S. Movva, L.J. Lee, and J.M. Castro., “**Effects of Nanoparticles on Curing Kinetics of Epoxy System**”, Annl. Tech. Conf, SPE. (2008).
- Y. Hioe, K.Chang, K. Zuyev, N. Bhagavatula, and J.M. Castro., “**A Simplified Approach to Predict Part Temperature and Minimum “Safe” Cycle Time**”, Polym. Eng. and Sci., SPE. (2008).
- Y. Hioe, K.Chang, K. Zuyev, N. Bhagavatula, and J.M. Castro, “**Mold Thermal Design: A Simplified Approach to Predict Part Temperature and Minimum “Safe” Cycle Time**”, Annl. Tech. Conf, SPE. (2007).
- Podium presentation: Annl. Tech. Conf, SPE. (2007), Yunior Hioe, “**Mold Thermal Design: A Simplified Approach to Predict Part Temperature and Minimum “Safe” Cycle Time**”