

BIOGRAPHICAL SKETCH

Dr. AKLILU T. G. GIORGES
Georgia Institute of Technology
Georgia Tech Research Institute
Research Engineer

Food Processing Technology Division
640 Strong Street, Atlanta, GA 30318-0823

(a) Professional Preparation

Doctor of Philosophy, Mechanical Engineering Jersey Institute of Technology	1998
Master of Science, Mechanical Engineering Jersey Institute of Technology	1994
Bachelor of Science, Mechanical Engineering Jersey Institute of Technology	1992

(b) Appointments

Research Engineer II	Georgia Tech Research Institute	2005–present
<ul style="list-style-type: none">• Developing a separation technology to enhance current separation and filtration processes• Investigated dynamic membrane filtration system using CFD• Modeled ultraviolet (UV) light intensity field for photolytic reactor• Developed model and method to estimate the single and multiple lamps effective disinfection zone• Modeled the flow dynamics (CFD) and develop UV disinfection system for turbid fluids in laminar Taylor mixers• Model (CFD) and designed experiments to address the rotor and other shape changes in the Taylor vortex reactor and the effect of the flow field in UV disinfection system• Investigating the UV effect in quality, and the application of UV reactor on fresh fruit juice• Modeled and produced a new prototype to improve the system performance of interferometric chemical and biological sensor• Developed cooking and freezing processes thermal model (CFD) that can be used with 3-D camera to estimate the thermal• Investigated chiller water disinfection management system		

Research Assistant (post doc)	Georgia Institute of Technology	2003-2005
<ul style="list-style-type: none">• Investigated jet and multi jet mixing and developed correlations that referred by “Handbook of Industrial Mixing”• Investigated large tank mixing using CFD• Assisted teaching the laboratory course in computational fluid dynamics (CFD) and supervised students’ course work		

Assistant Scientist (post doc)	Institute of Paper Science and Technology	1998-2003
<ul style="list-style-type: none">• Investigated paper pulp mixing process experimental and numerically• Coordinated, scheduled, and managing the concentric pulp mixing research program (Approach Flow Mixing)• Developed the idea of passive mixing augmentation for concentric pulp mixing from concept to prototype (pipeline mixing enhanced inserts)		

- Outlined a recommendation to improve the current pulp mixing practice.

Computer Laboratory Assistant New Jersey Institute of Technology 1994-1998

- Instructed and supervised students in designing systems and parts using Pro-Engineer

Instrumentation Laboratory Assistant New Jersey Institute of Technology 1994-1998

- Instructed and supervised students in performing experimental work in the instrumentation laboratory

Teaching Assistant New Jersey Institute of Technology 1994-1998

- Tutored and assisted graduate and undergraduate courses: kinematics of mechanisms, machine design, engineering graphics, thermodynamics, fluid mechanics, heat transfer, computer aided design (CAD), and finite element analysis (FEM).

(c) Publications

Book chapter

Aklilu T. G. Georges,(2011) "Finite Element and Finite Difference Methods for Elliptic and Parabolic Differential Equations," in Numerical Analysis- Theory and Application, pp. 1-28, (Jan Awrejcewicz., ED), InTech, ISBN 978-953-307-389-7 (September 2011).

Selected Journal Papers

1. G. Georges, A. and J. Pierson, "Flow dynamic effect in cake shape and resistance in membrane filtration," ASME IMECE 2011, Denver, CO, accepted.
2. G. Georges, A., J. Stewart, and J. Pierson, "Experiment and 2D Numerical Simulation of Cooking of Chicken Breast," ASME IMECE 2009, Orlando, FL, USA.
3. Stewart, J. and A. Georges, "Using a 3D Profiler and Infrared Camera to Monitor Oven Loading in Fully Cooked Meat Operation," In Proc. SPIE. 2009, Orlando, FL, USA.
4. Georges, A G., J. Pierson, and L. Forney, "Effect of Reactor Length on the Disinfection of Fluids in Taylor-Couette Photoreactor," Ind. Eng. Chem. Res., Vol. 47, pages 3444-3452, 2008.
5. Ye, Z., L. J. Forney, T. Koutchma, A. T. Georges, and J. Pierson, "Optimum UV Disinfection between Concentric Cylinders," Ind. Eng. Chem. Res., Vol. 47, pages 7490-7495, 2008.
6. Forney, L.J., Z. Ye, and A. Georges, "Fast Competitive Reactions in Taylor-Couette Flow," Ind. Eng. Chem. Res., Vol. 44, pages 7306-7312, 2005.
7. Forney, L.J., J. A. Pierson, and A. Georges, "Photon Absorption in Modified Taylor-Couette Flow: Theory and Experiment," Ind. Eng. Chem. Res., Vol. 44 (14), pages 5193-5198, 2005.
8. Georges, A., White, D.E., and Heindel, T.J. "Concentric mixing of hardwood pulp and water," TAPPI JOURNAL, Online Exclusive, May 2004, Vol. 3(5) .
9. G.Georges, A.T., Forney, L.J., and Wang, X., "Numerical Study of Multi-Jet Mixing," Trns. IChemE, Vol. 79, pages 1-9, 2001.
10. G.Georges, A.T., Wang, X., and Forney, L.J., "The Jet Shape of Concentric Mixing," Can. J. Chemical Engineering, vol.79, pages 87-93, 2001.
11. Wang, X., G.Georges, A., and Park, C.," Simulation of a Deformable Ball Passing Through a Step Diffuser." Journal of Computers & Structures, Vol.72, pages 435-456, 1999.