



ADVANTAGE ANALYTICAL CONSULTING SERVICES

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ANALYTICAL CAPABILITIES

- Electrical and Electronic Failure
- Failure of Composites
- Failure of Pressure Vessels
- Fatigue Failure
- Foreign Substance Identification
- Materials Compatibility
- Materials Science
- Metallurgy
- Particle Characterization
- Patent Infringement
- Polymer Chemistry
- Product Liability
- Textiles
- Tire Failure
- Weld Quality

EXPERIENCE

FAI Materials Testing Laboratory, Inc., Marietta, GA, *Founder and President*

January 1999-present

Georgia Tech Research Institute, Atlanta, GA, *Research Scientist II*

January 1999 to July 2002

Applied Technical Services, Inc., Marietta, GA, *Senior Chemist*

June 1991 to January 1999

Thomas Foundry, Birmingham, AL, *Analytical Metallurgical Chemist*

May 1986 to September 1986

CERTIFICATES

- 2013-X-ray Photoelectron Spectroscopy, GA Institute of Technology, Atlanta, GA
- 2013-Cleanroom Protocol and Safety Course, Georgia Institute of Technology, Atlanta, GA
- 2001- Dionex Fall Seminar Series for Ion Chromatography Professionals, Atlanta, GA
- 1999-TA Instruments Thermal Analysis Workshop, Atlanta, GA
- 1999-2013 Radiation Safety Course, Georgia Institute of Technology, Atlanta, GA
- 1998-Society of Plastics Engineers Plastics Failure Analysis and Prevention Course, Chicago, IL
- 1996-Laboratory Safety Course Georgia Institute of Technology, Atlanta, GA

PROFESSIONAL ASSOCIATIONS

ASM International, Member

Society for Automotive Engineers (SAE), Member

Society of Plastics Engineers, Inc. (SPE), Member

American Chemical Society (ACS), Regular Member

American Society for Testing and Materials (ASTM), Voting Member Sitting on the Following ASTM Committees:

- D11 Rubber: D11.11 Chemical Analysis of Rubber
- D11 Rubber: D11.15 Degradation of Rubber
- D13 Textiles: D13.19 Tire Cords and Fabrics
- D20 Plastics: D20.70 Analytical Methods for Plastics
- D30 Composites: D30.06 Interlaminar Properties
- E08 Fatigue: E08.05 Cyclic Deformation & Crack Growth
- E37 Thermal Measures: E37.01 Test Methods in Thermal Analysis
- F09 Tires: F09.30 Laboratory Testing

PUBLICATIONS

Weaver PG, Doguzhaeva LA, Lawver DR, Tacker RC, Ciampaglio CN, Crate JM, and Zhang W. (2011)

Characterization of Organics Consistent with β -Chitin Preserved in the Late Eocene Cuttlefish *Mississippia mississippiensis*. [PLOS ONE](https://doi.org/10.1371/journal.pone.028195) 6(11): e28195.

Norman Brown and Jon M. Crate (2012) Analysis of a Failure in a Polyethylene Gas Pipe Caused by Squeeze off Resulting in an Explosion. [Journal of Failure Analysis and Prevention](https://doi.org/10.1080/10915864.2012.658888) February 2012, Volume 12, Issue 1, pp 30-36

FAI LABORATORY CAPABILITIES:

Our 5,100 SF laboratory was designed by us for what we do. Our equipment is among the finest available and includes a large chamber Amray 1850 FE Scanning Electron Microscope with Chemical Analysis Capability by EDXS, Wild/Leica M420 Optical Imaging Microscope, Nikon Optiphot/Epiphot Metallograph Microscope, Infrared (FT-IR) microscope and IR Spectrometer, Instron Testers, Mettler Thermal Analysis Equipment (DSC, TGA, etc.), HP Gas Chromatography – Mass Spectroscopy, and much more.