Curriculum Vitae

Tiffany Lucas, P.E.
Materials Engineer

Professional Practice

Tiffany Lucas is an accomplished materials science engineer with 11 years of experience in materials science engineering for global manufacturing industries. She has extensive experience in laboratory testing of product components and failure analysis. In addition, Tiffany teaches applied science, engineering and technology classes at a Madison area college.

Employment History

Materials Engineering – Crane Engineering

Madison, WI • 2014 - Present

Specializing in materials and process engineering. Provides industrial clients with failure analysis, design support, prototype and production fabrication and manufacture process analysis. Works closely with clients to solve metallurgical and materials problems.

Electron Microscopy Professor – Madison College

Madison, WI • 2012 - Present

Electron Microscopy Teacher training students to use scanning electron microscopy, transmission electron microscopy, optical microscopy and sample preparation. Teaching failure analysis including integrated circuits and technical writing and presentation skills.

Metallurgical Project Engineer – Kohler Company

Kohler, WI • 2003 - 2010

Responsible for failure analysis of field returns, manufacturing problems, and new product development in plumbing, engines and generators. Lead teams to improve current processes to reduce scrap, improve quality and lower production costs. Lead her own green belt project team which included 8 core members, as a team they cut scrap on a hydroforming from 46% down to <1% on one part number. The principles learned in that study were applied to other part numbers with a cost savings to the entire operation overall. Worked with suppliers and cross-functional production teams to problem solve new products and new production lines. Lead teams that eliminated process steps resulting in an initial drop of processing time from 80 days down to 40 days. Yellow belt and green belt in quality systems. Responsible for purchasing laboratory

equipment; including handling budget, timeline, specification of equipment and requesting quotes from manufacturers. Also responsible for learning the new equipment, writing procedures and maintenance manuals for the new equipment and training laboratory staff on use of new equipment.

Materials Lab Intern – Harley Davidson Motor Company

Wauwatosa, WI • Feb. 2001-Dec. 2001 and Jan. 2003-April 2003

Evaluated heat-treated and induction hardened parts for case depth to verify that parts meet printed specifications. Tested plated and painted parts for surface adhesion and corrosion resistance, then communicated quality and purchasing specifications to suppliers. Mounted samples to microscopically examine plating, microstructure, hardness, microhardness, plating defects and fracture surfaces. Trained in various types of equipment such as: microscope, stereomicroscope, image analysis software, tensile tester, corrosion testing and various types of Brinell, Rockwell, Vickers and Knoop hardness testers.

Materials Lab Co-op – Mercury Marine

Fon du Lac, WI • 2002

Analyzed porosity problems and foam fold problems in lost foam with pressure casting line and worked on development of solution to the new process. Evaluated parts after corrosion testing for acceptability according to testing specifications. Mounted samples to microscopically examine plating, microstructure, microhardness, plating defects and fracture surfaces. Trained in various types of equipment such as: microscope, stereoscope, image analysis software, corrosion testing, SEM, EDS, FTIR, x-ray diffraction, Optical Emission Spectroscopy, Magnaflux and various types of Brinell, Rockwell, Vickers and Knoop hardness testers. Including extensive training in failure analysis. Designed a patented test cell with a team of two other engineers.

Safety, Quality and Regulatory Intern – Hydrite Chemical Company

Brookfield, WI • 1997 - 2001

Safety training: created spill response guide for plants, wrote SOPS for plants, and monitored safety training results by keeping spill reports and training records. Experience with SARA reports and permit compliance. Extensive product information experience working on and with technical sheets and MSDS sheets.

Professional Licenses

Licensed Professional Engineer - Wisconsin

Professional Affiliations and Honors

American Ceramic Society

American Society for Materials (Milwaukee Chapter Executive Board Member)

Recipient of ASM “Most Accomplished Young Member” for 2007

Education

M.S. Materials Engineering, University of Wisconsin-Milwaukee, Milwaukee, WI, 2005.

B.S. Materials Engineering, University of Wisconsin-Milwaukee, Milwaukee, WI, 2001.

Continuing Studies

ASM-Advanced Heat Treating, 2008.

ASM-Fundamentals of Brazing Online, 2007.

Lehigh Microscopy and Microanalysis, Lehigh, PA, 2007.

Designing and Manufacturing with Plastics: In a Global Marketplace, Milwaukee, WI, 2006.

KOS Workshop – Incoming Stock Inspection/Verification, Kohler, WI, 2006.

ASM – Electroplating, 2005.

North American Hydroforming Conference & Exhibition, 2004

ASM – Principles of Failure Analysis Online, 2004

ASM – Corrosion, 2004

Finkl Forging Forum, Chicago, IL, 2004

EDAX – Microanalysis, Mahwah, NJ, 2003