Brad A. Lindner| Principal Materials Scientist

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Professional Summary:

Materials engineer with numerous years of industrial, commercial laboratory, and failure analysis experience including brazing and welding engineering, powder metal production and processing, foundry engineering, alloy design, mechanical and structural component failure, and analytical test methods.

Mr. Lindner's expertise includes:

- **Materials:** Carbon & Low Alloy Steels, Stainless Steels, Cast Iron, Aluminum Alloys, Brazing and soldering alloys (precious metals, aluminum, zinc, tin), Superalloys, Plastics, Polymers.
- **Industries:** Foundry, Heat Treating, Brazing, Soldering, Welding, Oil and Gas, Plating, Mining, Transportation, Aerospace, Electronics, Additive Manufacturing, Forging, Automotive, Power Transmission
- **Processes:** Metal Powder Production (Atomization), Powder Metals, Additive Manufacturing, Rolling, Drawing, Stamping, Metal Casting, Brazing, Soldering, Welding, Heat Treatment, Plating, Alloy Development, Quality Assurance, Forging, Induction Heating
- **Testing:** Visual Inspection, Metallography, Scanning Electron Microscopy/Energy Dispersive X-Ray Spectroscopy (SEM/EDS), Differential Scanning Calorimetry (DSC), Mechanical Properties Testing, Weld Qualification Testing, Optical Emission Spectroscopy, Particle Size Analysis

Licenses and Certifications:

Professional Engineer – Wisconsin, 47625-6
Illinois, 062.089505
Minnesota, 66205

Weld Test Conductor – Wisconsin, 1446200-WTC

Project Experience:

The sample projects here outline a small sampling of the types of projects and losses Mr. Lindner regularly investigates. For further information or additional examples, please contact EFI Global.

Brazing Alloy Producer, Cudahy, Wisconsin
Brazing Applications Support
Performed troubleshooting for a wide range of brazing end users. This included inspection and failure analysis of joints, suggesting joint design, and recommending alloy selection based on in complex metallurgical systems.
Water Heater Manufacturer, Milwaukee, Wisconsin
Water Heaters Malfunction Evaluation

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Investigation of several residential water heater failure via corrosion cases. Suggestions were provided to mitigate corrosion via materials selection and design, which resulted in significant cost savings to manufacturer and higher quality equipment supplied to end user.

Engine Manufacturer, Waukesha, Wisconsin
Heat Exchanger Failure Investigation
Investigation of corrosion in large heat exchanger that involved multiple parties and significant evidence collection and witness interviews. The source of the corrosion was identified and eliminated via engineering controls.

Department of Public Works, Milwaukee, Wisconsin
Municipal Piping Failure Investigation
Investigation of failure in biohazardous waste pipeline used for municipal sewage treatment. This involved possible litigation between the municipality, pipe manufacturer, pipe installer, and welding firm. The results of this investigation unambiguously determined the cause of failure and avoided a costly, protracted trial.

Generator/Small Engine Manufacturer, Waukesha, Wisconsin
Failure Analyses, Material Characterization, and Quality Evaluations
Investigation of small engines failures including connecting rod, valve, valve seat, and crankshaft, cylinder, and cylinder bore failures

Weld Analysis and Testing, Multiple Locations
Analyses Pertaining to Weld Quality
Performed weld inspection, testing, and troubleshooting of multiple welding methods and configurations with a variety of base metals.

Professional Experience:

EFI Global, Principal Materials Scientist (current title), 2025-present

Lucas Milhaupt, Senior New Product Development Metallurgist, 2021-2025

Element, Senior Materials Engineer – Failure Analysis, 2019-2021

Anderson Laboratories, Senior Metallurgical Engineer, 2017-2019

Quant Corporation, Principal Metallurgist, 2009-2017

Metallurgical Associates, Senior Staff Metallurgist, 2006-2009

Grede Foundries, Plant Metallurgist, 2004-2006

Formal Education:

Master of Science, Materials Engineering, University of Wisconsin - Milwaukee, Milwaukee, WI, 2014

Bachelor of Science, Materials Engineering (with honors), University of Wisconsin - Milwaukee, Milwaukee, WI, 2004

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Specialized Education/Training:

American Chemical Society, Fundamentals of Fourier Transform Infrared Spectroscopy, 2026

American Welding Society, Safety in Welding, 2025

Society of Plastics Engineers, Failure of Plumbing Parts, 2025

EFI, Plumbing Connection Failures, 2025

EFI, Water Heater Investigations, 2025

EFI, Degree Day Analysis for Freeze Losses, 2025

EFI, The Scientific Method as Applied to Fire and Engineering Investigations, 2025

Society of Plastics Engineers, Rubber O-Rings, 2025

Society of Plastics Engineers, Failure Analysis of Plastics, 2025

EFI, Vehicle Accident Reconstruction, 2025

University of Wisconsin, Design of Experiments, 2025

American Society of Materials, Molecular Dynamics Simulations for Beginners, 2025

American Society of Materials, Scanning Electron Microscopy, 2025

American Society of Materials, Induction Heating, 2024

Metal Powders Industry Foundation, Atomization and Powder Metal Processing, 2023

ThermoCalc, ThermoCalc Software Training (Numerical Simulation of Phase Equilibria), 2012, 2022

ThermoCalc, Dictra Software Training (Numerical Simulation of Diffusion Kinetics), 2012, 2022

Society of Automotive Engineers, Design of Experiments, 2021

American Foundry Society, Aluminum Metallurgy 201, 2020

American Society of Materials, Practical Fracture Mechanics, 2020

American Welding Society, Certified Welding Inspector Training, 2018

A list of additional training prior to this date is available upon request

Affiliations:

Member/Handbook Committee Chair, American Society of Materials

Member, Society of Plastics Engineers

Member, Metal Powder Industries Foundation

Member, American Foundry Society

Member, National Academy of Forensic Engineers

Member, Association for Materials Protection and Performance

Member, The American Ceramic Society

Member, National Society of Professional Engineers

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Courses Instructed/Guest Lecturer:

Fundamentals of Brazing, Instructor - 3-day class on all aspects of brazing

Publications:

Jamel, M., Cho, E, Lindner, B. "The Combined Effects of the Cooling Rate and Alloying Element on the Mechanical Behavior of Mg-Mn-Zn Alloying System" Journal of Alloys and Metallurgical Systems, 2024.

Lindner, B. "Thermodynamic and Kinetic Simulation of Transient Liquid-Phase Bonding" Masters Thesis, 2015.

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