

**SCOTT LIEBERMAN, PH.D., P.E., CWI, LEED AP –  
DIRECTOR OF METALLURGICAL AND MATERIALS ENGINEERING**

**PROFESSIONAL HISTORY**

*Engineering Design & Testing Corp.*, Brooklyn, New York, Director of Metallurgical and Materials Engineering, 2024 to present

*Brooklyn Engineering Consulting P.C.*, Brooklyn, New York, Founder and Principal Engineer, 2024

*SOCOTEC Engineering, Inc.*, (formerly *LPI, Inc.*), New York, New York, Principal Engineer, 2014 to 2024

*Exponent Failure Analysis Associates*, New York, New York, Senior Engineer, 2007 to 2013

**EDUCATION**

Ph.D., Materials Science and Engineering, Georgia Institute of Technology, 2007

M.Sc., Composite Materials, Imperial College of Science, Technology & Medicine, 2001

B.S., Materials Science and Engineering, Massachusetts Institute of Technology, 2000

**PROFESSIONAL SUMMARY**

Dr. Lieberman specializes in failure analysis, microstructural characterization, and processing of metals, polymeric materials, and composites. He has over 17 years of experience conducting investigations for clients in the automotive, aeronautical, construction, marine, energy, oil and gas, electronics, fire protection, green building, consumer products, and medical device industries. He has specific expertise with optical and scanning electron microscopy, metallography, conventional and powder metallurgy, composite materials, fractography, and corrosion.

**PROFESSIONAL EXPERIENCE**

Dr. Lieberman conducts on-site inspections and metallurgical analysis investigations that have included: corrosion degradation evaluations; cast iron, steel, stainless steel, copper alloy, aluminum, titanium, polymeric, masonry, and ceramic component failures; fire protection system issues; industrial and construction accidents; manufacturing equipment failures; and plumbing and HVAC component failures for industrial clients, utilities, government authorities, and insurance companies. He has directed and assisted on investigations of a wide variety of consumer products for projects involving production quality control, field return units, litigation, and product recalls.

At SOCOTEC, he managed the non-destructive evaluation (NDE) program that included visual, ultrasonic, magnetic particle, dye penetrant, and radiographic inspection projects. He was the Facility Representative and Quality Assurance Manager for SOCOTEC's services as an Accredited Test Facility for the American Welding Society (AWS). In addition, he was the Primary Director for SOCOTEC's services as a Special Inspection Agency (SIA) for the New York City Department of Buildings.

Dr. Lieberman taught a course for The American Society for Materials (ASM International) involving failure analysis, design, and life prediction/validation of medical devices. He also served as an Adjunct Professor for the Mechanical Engineering Department at Santa Clara University, where he taught a graduate-level materials characterization course.

At Exponent, he managed a variety of medical device projects, including failure analysis, R&D support, and litigation; and conducted investigations on surgical tools, orthopedic implants, and stents, made from materials including nitinol, titanium, cobalt-chrome, and stainless steel. He performed R&D support research on a variety of solar panel products, including investigations of thermal fatigue of welds, durability of copper interconnects, and processing and quality control of polymeric materials.

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In addition, he developed a metallographic technique for nitinol that does not induce a martensitic transformation, allowing for the visualization of microstructural features including grain size, welds, and heat affected zones. He also developed and implemented durability testing schemes for smartcards and information documents.

While a Graduate Research Assistant in the School of Materials Science and Engineering at Georgia Tech, he investigated the processing-microstructure-properties relationships of Ti-B composites and modified alloys, high-pressure die-cast magnesium alloys, and aluminum alloys using conventional and newly developed techniques for materials characterization and microstructural design.

**LICENSES AND CERTIFICATIONS**

Registered Professional Engineer, New York, #092702

Registered Professional Metallurgical Engineer, California, #MT1954

Registered Professional Engineer, Michigan, #6201060256

Certified Welding Inspector, American Welding Society, #13073371

U.S. Green Building Council, Leadership in Energy and Environmental Design Accredited Professional, LEED AP, 2009

**ACADEMIC HONORS**

Georgia Tech President's Fellowship

Atlanta Chapter of ASM International Graduate Student Award, 2005, 2006

MIT Ilona Karmel Writing Awards, First Prize, Writing & Humanistic Studies Prize for Engineering Writing, 1999

**PUBLICATIONS**

Lieberman SI. Failure Analysis of Secondary Water Piping Systems. ASCE Forensic Engineering 8th Conference, Austin, TX, December 2018, in press.

Arbour P, Gode A, Reed A, Lieberman S. Wherefor Aluminium? Materiality of Curtain Wall Systems. Façade Tectonics Institute 2016 World Conference, Los Angeles, CA, October 10-11, 2016, in press.

Briant P, Lieberman S, James B. Residual stress distribution in MP35N due to plastic deformation and comparison to finite element analysis. International Medical Device Conference and Expo, Chicago, IL, October 5–6, 2011, in press.

James BA, Lieberman SI. Analysis of a brake cylinder failure. Journal of Failure Analysis and Prevention 2011; 11:193–196.

James B, McVeigh C, Rosenbloom S, Guyer E, Lieberman S. Ultrasonic cleaning-induced failures in medical devices. Journal of Failure Analysis and Prevention 2010; 10(3):223–227.

Lieberman SI, Gokhale AM, Tamirisakandala S, Bhat RB. Three-dimensional microstructural characterization of discontinuously reinforced Ti64–TiB composites produced via blended elemental powder metallurgy. Materials Characterization 2009; 60:957–963.

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Singh H, Gokhale AM, Sreeranganathan A, Mao Y, Lieberman SI, Tamirisakandala S. Computer simulations of “realistic” partially anisotropic microstructures statistically similar to real microstructures. *Computational Materials Science* 2009; 44:1050–1055.

Singh H, Gokhale AM, Lieberman SI, Tamirisakandala S. Image based computations of lineal path probability distributions for microstructure representation. *Materials Science and Engineering A* 2008; 474:104–111.

Lieberman SI, Gokhale AM, Tamirisakandala S. Reconstruction of three-dimensional microstructures of TiB whiskers in powder processed Ti-6Al-4V-1B Alloys. *Materials Characterization* 2007; 58:527–533.

Sreeranganathan A, Lieberman SI, Singh H, Gokhale AM, Tamirisakandala S. Realistic micromechanical modeling and simulation of boron modified titanium alloys. *Proceedings, ABAQUS Users’ Conference*, pp. 546–548, Paris, France, 2007.

Lieberman SI. Microstructural characterization, visualization, and simulation of Ti-B materials. *Doctoral Dissertation*, Georgia Institute of Technology, 2007.

Lieberman SI, Singh H, Mao Y, Sreeranganathan A, Gokhale AM, Tamirisakandala S, Miracle DB. Characterization and simulation of microstructures of titanium alloys modified with boron. *JOM* 2007; 59:59–63. Invited paper.

Lieberman SI, Gokhale AM, Tamirisakandala S. Reconstruction of three-dimensional microstructures of TiB phase in a powder metallurgy titanium alloy using montage serial sectioning. *Scripta Materialia* 2006; 55:63–68. Invited paper.

Gokhale AM, Singh H, Lieberman SI, Tamirisakandala S. Simulations of microstructural geometry for materials design. *Proceedings, 12th International Conference on Plasticity and its Current Applications*, pp. 262–264, Baltimore, MD, 2006.

Mebane DS, Lieberman SI, Gokhale AM, Gerhardt RA. Bivariate stereological unfolding procedure for randomly oriented chopped fibers or whiskers. *Acta Materialia* 2005; 53:4943–4953.

## **PRESENTATIONS AND PUBLISHED ABSTRACTS**

Lieberman SI, Traubert TD. Metallurgical Failure Analysis Evaluation of a Hydroelectric Turbine Generator. *International Materials Applications & Technologies 2022*, New Orleans, LA, September 2022.

Lieberman SI, Grogan JH, Chang W, Nugent M. Building Water System Failures: Recent Experience with Failures of Copper-Based Components. *International Materials Applications & Technologies 2020*, October 2020.

Lieberman SI. Failure Analysis of Secondary Water Piping Systems. *ASCE Forensic Engineering 8th Conference*, Austin, TX, December 2018.

James BA, Guyer EP, Hudgins AW, Lieberman SI, Kane WM. Analysis of Surgical Tool Failures: Causes and Prevention. *Materials Science & Technology 2014*, Pittsburgh, PA, October 2014.

Lieberman SI, James BA, Zednik RJ. Metallurgical Analysis of a Hydrostatic Pressure Test Pipeline Rupture. *Materials Science & Technology 2013*, Montreal, QC, Canada, October 2013.

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Lieberman SI, James BA. Metallographic Techniques and Analysis of Nitinol Alloys. Microscopy & Microanalysis 2013, Indianapolis, IN, August 2013.

Lieberman SI. Fractography of Ti-B materials. PowderMet 2009, Las Vegas, NV, June 2009.

Lieberman SI. Development of materials design methodologies for boron-modified Ti-6Al-4V alloys. TMS Annual Meeting, Orlando, FL, February 2007.

Lieberman SI. Visualization, characterization, and simulation of microstructures of extruded boron-modified Ti-6Al-4V alloys with TiB reinforcement. Materials Science and Technology, Cincinnati, OH, October 2006.

Lieberman SI. Visualization of 3D microstructures reconstructed from serial sections in modified Ti-6Al-4V alloys with TiB whiskers. TMS Annual Meeting, San Antonio, TX, March 2006.

Lieberman SI. Computer simulations of realistic microstructures of Ti-TiB materials. MRS Fall Meeting, Boston, MA, November 2005.

Lieberman SI. Visualization of 3D microstructures reconstructed from serial sections in pre-alloyed Ti-6Al-4V-TiB. A Workshop on Titanium Alloys Modified with Boron, Dayton, OH, October 2005.

Lieberman SI. Tensile fractography of Ti-6Al-4V-TiB composite. Materials Science & Technology, Pittsburgh, PA, September 2005.

Lieberman SI. Montage-based serial sectioning to determine the spatial distribution of TiB whiskers in Ti-6Al-4V-TiB composite. Materials Science & Technology 2005, Pittsburgh, PA, September 2005.

Lieberman SI. First application of a novel stereological length-radius unfolding procedure to determine the three-dimensional bivariate size and shape distribution of TiB whiskers in Ti-6Al-4V-2.9B. TMS Annual Meeting, San Francisco, CA, February 2005.

Ng SJ, Claus SJ, Lieberman SI. Identifying Marcelling parameters of thick linear tapered laminates in a closed-mold curing process. 44th International SAMPE Symposium and Exhibition, pp. 167–173, Long Beach, CA, 1999.

**ACADEMIC APPOINTMENTS**

Adjunct Professor, Department of Mechanical Engineering, Santa Clara University

**PEER REVIEWER**

Materials Characterization

Metallography, Microstructure, and Analysis

**PROFESSIONAL AFFILIATIONS**

ASM International (member)

American Welding Society (member)