Exponent®
Engineering & Scientific Consulting

AJ Schrauth, Ph.D., P.E.

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Professional Profile

Dr. Schrauth is a mechanical engineer with expertise in manufacturing, machine design, mechanical testing, data acquisition, dynamics, and industrial safety. He has extensive experience designing custom mechanical tests to examine mechanical properties, fatigue, wear, impact, creep, and numerous other complex phenomena.

Dr. Schrauth has performed testing for litigation and non-litigation projects across a wide range of products including: biomedical devices in preparation for FDA submissions, consumer electronics, wind turbines, electrical power turbines, exercise equipment, and many more.

Dr. Schrauth also has experience investigating the safety of engineering and industrial systems. He has performed safety evaluations on numerous engineered systems including construction equipment, manufacturing equipment, forklifts, consumer electronics, vehicular gates, ladders, high-pressure systems, and farm equipment. His safety related projects have included both review of safety systems and procedures in reaction to an incident and evaluation of systems and procedures to improve safety and avoid future incidents.

Dr. Schrauth is skilled in design for manufacturing using a variety of manufacturing methods such as: photolithography, injection molding, thermoforming, metal forming, assembly, metal cutting, and casting. He has extensive experience in a machine shop environment including the operation of manual and CNC machine tools, water jet cutting, injection molding, and thermoforming. He is proficient with a number of data analysis and acquisition software packages including Matlab and Labview for machine vision, data acquisition, robotics, data analysis and sensing.

Prior to joining Exponent, Dr. Schrauth was graduate research assistant at the Massachusetts Institute of Technology where he designed a unique anode microstructure for direct methanol fuel cells to reduce electrode ionic resistance as part of his doctoral research. In addition to his doctoral research, Dr. Schrauth designed biocompatible super-hydrophobic surfaces fabricated using SU-8 photolithography. He was also a teaching assistant for graduate thermodynamics and undergraduate manufacturing at MIT.

Academic Credentials & Professional Honors

Ph.D., Mechanical Engineering, Massachusetts Institute of Technology (MIT), 2011

M.S., Mechanical Engineering, Massachusetts Institute of Technology (MIT), 2005

B.S., Mechanical Engineering, Tufts University, 2003

Tau Beta Pi

Tufts University Mechanical Engineering Prize, 2003

Licenses and Certifications

Professional Engineer Mechanical, California, #37381

Professional Engineer Mechanical, Massachusetts, #54698

Professional Engineer, New York, #101537

Professional Engineer Mechanical, Washington, #57196

Professional Affiliations

American Society of Mechanical Engineers (ASME) B5 Machine Tool Standards committee

Patents

US Patent Pending: 13/094,137: Fast Curable Liquid Resin Procedure for the Manufacture of Micro/Nano Featured Parts (Mazzeo A, Schrauth A, Hardt D).

Publications

Schrauth A, Saka N, Suh N. Development of nano-structured hemocompatible surfaces. 2nd International Symposium on Nanomanufacturing, Daejeon, Korea, November 2004.

Schrauth A, Suh N. Axiomatic design of non-wetting hemocompatible surfaces. 4th International Conference on Axiomatic Design, Firenze, Italy, June 2006.

Schrauth A, Chun J. Design of high-ionic conductivity electrodes for direct methanol fuel cells. 220th Meeting of the Electrochemical Society, Boston, MA, October 2011.