

Exponent®
Engineering & Scientific Consulting

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Professional Profile

Mr. Ledwith has over 25 years of experience analyzing mechanical, structural and materials failures ranging from consumer products to complex mechanical systems. He has conducted field inspections including transportation systems, power generation equipment, fire protection system components, and mechanical devices to determine the cause of accidents and failures.

Mr. Ledwith has experience with mechanical testing, nondestructive examination techniques, and the development of specialized laboratory procedures for materials characterization. Mr. Ledwith uses tools such as Fourier-transform infrared spectroscopy for compositional analysis of residues, contaminants, and polymeric materials. He also performs fractographic evaluations of materials using optical microscopy and scanning electron microscopy as part of root cause analyses.

Prior to joining Exponent, Mr. Ledwith served in the United States Navy as a propulsion specialist aboard nuclear-powered fast attack submarines. He operated and performed maintenance on mechanical and electrical power generation equipment, including primary (nuclear) and secondary (conventional) systems.

Academic Credentials & Professional Honors

B.S., Materials Science and Engineering, University of Maryland, College Park, 2006

Professional Affiliations

ASM International (formerly American Society for Metals, member since 1990)

National Society of Professional Engineers—NSPE (member)

Maryland Society of Professional Engineers—MDSPE (member)

Publications

Verghese PM, Budiansky N, Ledwith P, Bauer D. Residue induced product failures-microanalysis. Microscopy and Microanalysis 2016; 22 (Suppl. 3):1730-1731. doi:10.1017/S1431927616009491.

Lee CK, Moll J, Ledwith P, MacLean S. Fractographic examination and tensile property evaluation of 3D printed acrylonitrile butadiene styrene (ABS). Proceedings, ANTEC, 2015.

Ralston BE, Donthu S, Ledwith P, Kramschuster A, McNulty J. Environmental stress cracking of polycarbonates exposed to sunscreen and hand lotion. Proceedings, Society of Plastics Engineers Annual Technical Conference (ANTEC), Orlando, FL, 2012.

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Hoffman JM, Reitman M, Donthu S, Ledwith P, Wills D. Microscopic characterization of CPVC failure modes. Proceedings, ANTEC 2009, Society of Plastics Engineers, Chicago, IL, June 2009. Best Paper Award in Failure Analysis & Prevention.

Hoffman JM, Reitman M, Ledwith P. Characterization of manufacturing defects in medical balloons. Proceedings, ANTEC 2008, Milwaukee, WI, Society of Plastics Engineers, May 2008.

Reitman M, Ledwith P, Hoffman M, Moalli J, Xu T. Environmentally driven changes in nylon. Proceedings, ANTEC 2008, Milwaukee, WI, Society of Plastics Engineers, May 2008.

Ledwith P. Self-healing of a polyurethane-based polymer composite. American Physical Society, Los Angeles, CA, March 2005.