Exponent®
Engineering & Scientific Consulting

Benjamin Georgin, Ph.D.

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Professional Profile

Dr. Georgin specializes in solving complex technical problems related to materials science, metallurgy, characterization, and failure analysis. As a Licensed Professional Metallurgical Engineer, he assists clients with root cause analysis, risk assessment, and process quality in a range of industries including energy, power systems, utilities, medical devices, and consumer products.

During his time at Exponent, Dr. Georgin has supported numerous projects ranging from failure analysis of individual components to multi-disciplinary investigations of complex systems. He has leveraged his technical skills and expertise to solve a wide variety of challenges related to manufacturing, process control, materials selection, risk assessment, reliability, and asset management. He has a particular interest in high temperature alloys, structural steels, low temperature alloys (e.g. solders), joining processes, functional coatings, and time-dependent material degradation, such as fatigue, wear, and corrosion. Dr. Georgin has extensive experience in electron optics, microscopy, materials characterization, fractography, chemical analysis, computed tomography, and mechanical testing techniques.

Prior to joining Exponent, Dr. Georgin was a graduate research assistant at Ohio State University. There, he studied powder metallurgy, thermo-mechanical processing, and solid-state welding of gas-turbine engine components. He also directed materials characterization and electron microscopy laboratory courses. Dr. Georgin has prior industry experience working as an intern at the Timken Company where he researched phase transformations and structure-property relationships for thick-section steel bearings. He also worked as an intern at the Air Force Research Laboratory (AFRL), researching additive manufacturing/3D printing of nickel-base and titanium alloys for aerospace and defense applications.

Academic Credentials & Professional Honors

Ph.D., Materials Science and Engineering, The Ohio State University, 2020

M.S., Materials Science and Engineering, The Ohio State University, 2018

B.S., Materials Science and Engineering, The Ohio State University, 2016

Professional Affiliations

The Minerals, Metals and Materials Society (TMS)

The Materials Information Society (ASM International)

Association for Iron & Steel Technology (AIST)

The American Ceramic Society (ACerS)

Languages

French

Publications

B. Georgin, G. Viswanathan, B. Welk, Z. Kloenne, H. Fraser, “Optimizing image contrast of second phases in metal alloys”, Ultramicroscopy, Volume 228, 2021.

C.E. Slone, B. Barnett, B. Georgin, A. Vivek, E.P. George, G.S. Daehn, M.J. Mills, "Solid state welding of a medium-entropy CrCoNi with heterogeneous, partially recrystallized microstructures", Materials Science and Engineering: A (818), 141425, 2021.

Presentations

B. Georgin, B. Welk, H. Fraser, “Role of Defects on Microstructure in Net-Shape HIP Nickel-base Alloy IN-718”, TMS 2020, February 2020, San Diego, CA

B. Georgin, G. Viswanathan, H. Fraser, “Low Voltage SEM Characterization of Nickel-base Superalloys”, TMS 2020, February 2020, San Diego, CA

B. Georgin, B. Welk, H. Fraser, “Diffusion Bonding of Superalloy Components via Hot Isostatic Pressing”, TMS 2019, February 2019, San Antonio, TX.

B. Georgin, Z. Kloenne, B. Welk, H. Fraser, “Fluoride Ion Treatment of Superalloy Powders for Net-Shape HIP of Critical Engine Components”, TMS 2018, March 2018, Phoenix, AZ.