



Exponent®
Engineering & Scientific Consulting

Joseph Fignar

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Professional Profile

Mr. Fignar's background includes extensive expertise in the areas of powertrain component design, geared drivetrain systems, and analysis of failure mechanisms of various types of drivetrain components.

Mr. Fignar is knowledgeable in the Mechanical, Metallurgical, and Manufacturing disciplines of automotive engineering. He is experienced in vehicle crash analysis include conducting vehicle and site inspections and utilizing documentation techniques such as 3D laser scanning and drones to capture pertinent crash-related information. As part of his experience in accident reconstruction, he has utilized simulation, photogrammetry, and 3D modeling software to analyze vehicle collisions of various types. Overall, Mr. Fignar's background includes experience with vehicle systems and component testing, and he has familiarity with product recall procedures.

Prior to joining Exponent, Mr. Fignar was employed as a senior metallurgical heat treatment process engineer in the powertrain component group for an automaker. While in this role, he conducted gas carburizing heat treatment processes and oversaw six sigma level quality assurance tests for gear geometries used in transmissions, differentials, and transfer units for a variety of passenger vehicles. As part of his work in this area, Mr. Fignar was an award recipient of Heat Treat Today's 40 Under 40 industry professionals in 2020.

Academic Credentials & Professional Honors

M.Sc., Engineering Management, Penn State University, 2020

B.A.Sc., Materials Science and Engineering, Penn State University, 2015

Heat Treat Today 40 Under 40, class of 2020 award recipient

Prior Experience

Senior Metallurgical Heat Treatment Process Engineer, Honda Transmission Manufacturing, Russells Point, OH, 2015 – 2022

Young Professional Board Member of ASM International's Heat-Treating Society, 2017 – 2019

Distinguished Undergraduate Research Assistant, The Pennsylvania State University, Applied Research Lab, 2013 – 2015

Professional Affiliations

Society of Automotive Engineers – SAE

ASM International – Heat Treat Society

Publications

Browning, P., Fignar, J., Kulkarni, A., & Singh, J. (2017). Sintering behavior and mechanical properties of Mo-TZM alloyed with nanotitanium carbide. International Journal of Refractory Metals and Hard Materials, 62(Part A), 78–84.

Presentations

Browning, P., Fignar, J. (2015, October 4-8). Sintering behavior and mechanical properties of Mo-TZM alloyed with nanotitanium carbide. Materials Science & Technology (MS&T) Conference, Columbus, OH, United States.

Additional Education & Training

Traffic Accident Reconstruction, Northwestern University Traffic Institute, 2022

HVE Forum, Engineering Dynamics Corporation, 2022

Advisory Appointments

ASM International Heat-Treating Society (HTS) Young professional board member 2017 - 2019