

Advanced Manufacturing at

Professor Alan A. Luo

Professor of Materials Science and Engineering
Professor of Integrated Systems Engineering
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- 25 years of experience
- 20 years industrial R&D experience
 - 15 patents
 - 170+ publications
 - ASM Fellow
- Recipient of numerous awards

Experience Summary

Dr. Alan Luo is Professor of Materials Science and Engineering and Professor of Integrated Systems Engineering (Manufacturing) at The Ohio State University (OSU). Prior to joining OSU in July 2013, Dr. Luo was a GM Technical Fellow at General Motors Global Research and Development Center (Warren, MI) with 20 years of industrial R&D experience including 15 years at GM. Dr. Luo won two John M. Campbell Awards for his fundamental research, and three Charles L. McCuen Awards for research applications at GM. Prof. Luo has 15 patents and more than 170 technical publications in light metals, manufacturing and applications.

Prof. Luo is an elected Fellow of ASM (American Society of Materials) International and received the ASM Materials Science Research Silver Medal in 2008, SAE (Society for Automotive Engineers) International Forest R. McFarland Award in 2013, TMS (The Minerals, Metals & Materials Society) Brimacombe Medalist Award in 2013, and USCAR (United States Council for Automotive Research) Special Recognition Award in 2009. Dr. Luo's research is also recognized by several Best Paper awards from TMS, SAE and AFS (American Foundry Society). Prof. Luo is presently the vice chair of TMS Light Metals Division and SAE Materials Division.

Research Areas

- **Advanced metallic materials (aluminum, magnesium, titanium alloys and metal matrix composites):** Alloy design and development using computational thermodynamics and the CALPHAD (CALculation of PHase Diagrams) approach coupled with critical experimental validation.
- **Innovative manufacturing processes (casting, forming and multi-material manufacturing):** Process development, process simulation and multi-scale microstructure modeling for advanced manufacturing processes including multi-materials.
- **Lightweight design and integrated computational materials engineering (ICME):** Lightweight structure designs and multi-material solutions using integrated computational materials engineering (ICME) tools.

