

Curriculum Vitae
James M. Boileau, Ph.D.
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EDUCATIONAL HISTORY

Wayne State University, Detroit, Michigan.

- Ph.D in Materials Science & Engineering 2000
Thesis: *The Effect of Solidification Time On The Mechanical Properties Of A Cast 319 Aluminum Alloy* (work sponsored and funded by Ford Motor Company)

PROFESSIONAL HISTORY

WAYNE STATE UNIVERSITY, Detroit, MI
College of Engineering, Engineering Technology Division

Associate Professor (Teaching) 2022 - Present

- Created and taught in-person courses on *Applied Thermodynamics* (WMT 3200), *Physical Metallurgy* (WMT 3452), *Failure Analysis* (WMT 4500), *Process Engineering* (MIT 3600), *Manufacturing Processes Theory* (MIT 3520). Created and implemented laboratory experiments for WMT 3200 and WMT 3451 courses; also created and implemented group teamwork development activities for MIT 3600.
- Instructor with joint WSU/NBUT (China) joint engineering technology program. Adapted and taught on-line courses on *Introduction to Materials* (ET 2200), *Mechanics of Materials* (MCT 3100), and *Process Engineering* (MIT 3600). Created virtual laboratory experiments for MCT 3100 course. Created interactive lessons for quality-based methodology instruction.
- Leading effort to renovate/update ET Machine Shop to fully comply with all health and safety standards. Leading effort to create scanning electron microscopy laboratory; assisting with creation of metallurgical and metallographic laboratories. Chaired Academic Advisor search committee (2023).
- Overseeing establishment of AWS student chapter; 2023 - 2025 Student Chapter Advisor

College of Engineering, Basic Engineering Department

Adjunct Faculty 2014 - Present
2001 – 2002

- Virtual & in-person instructor for *Introduction to Material Science and Engineering* (BE 1300), *Introduction to Materials Laboratory* (BE 1310), *Applied Probability & Statistics* (BE 2100), and *Processing of Materials* (MSE 5010). Created and implemented virtual laboratory experiments for college-wide BE 1310 use during COVID-induced remote learning period.

*College of Engineering, Chemical Engineering and Materials Science Department***Industrial Advisor****2013 – 2021**

- Industrial advisor and dissertation committee member for projects entitled:
 - *“Influence Of Dissolved Hydrogen On The Fatigue Crack Growth Behavior Of AISI 4140 Steel”* (V. Nagarajan – PhD 2014)
 - *“Development of High Strength High Toughness Third Generation Advanced High Strength Steels”* (C. Martis – PhD 2015)
 - *“Development of Nanostructured Austempered Ductile Cast Iron”* (S. Panneerselvam – PhD 2017)
 - *“An Investigation on the Fatigue Threshold and Fracture Toughness of Austempered 4140 Steel”* (S. Bajaj – MS 2017.)
 - *“A Novel, Two-Step Austenitization Process to Produce ADI with High Strength, Ductility, and Fracture Toughness”* (D. Joshi – PhD 2021.)

ELEMENT MATERIALS TECHNOLOGY, Wixom, MI**2021****Senior Materials Engineer**

- Materials expert and consultant for design, analysis, and production of metallic alloy components and processes. Provided rapid, timely, and accurate root cause analysis for failure investigations in a client-based environment. Regularly exceeded \$25K in billables per month.

FORD MOTOR COMPANY, Dearborn, MI**1988 – 2020***Electrified Powertrain Engineering***2018 – 2020****Technical Expert**

- Sole material resource for entire organization (1000+ people.) Led projects that successfully implemented new materials and technologies to reduce weight in electric motors and battery storage systems. Initiated and completed project to develop/revise/implement design rules for fastener usage. Initiated project to develop/revise design rules for grounding strategies for EVs. Collaborated with design teams to successfully develop new battery tray system integrating multiple metal and polymeric materials to reduce weight and cost.
- Materials expert on numerous design, analysis, and failure investigation teams providing root cause analysis and solutions. Implemented solutions that provided for reduced cycle time and reduced material costs in EV Van (\$60M reduction.) Determined failure mode and developed solution to repair EV battery packages (\$44M & 6-month loss avoidance).

*Research and Advanced Engineering Laboratories***1999 – 2018****Technical Expert**

- Group leader of a seven-person research team focused on advanced materials characterization of metallic, polymer, and ceramic materials. Led \$10M optical and electron microscopy laboratories within Research and Innovation Center.

- Led renovation of four laboratories; drove justification, purchase, and installation of \$2M TEM and \$500K SEM microscopes. Minimized issues due to staff reduction through development of training modules to enable users to perform basic materials analysis. Developed in-sourcing as a funding arrangement to minimize impacts of budget reductions.
- Led project on low-cost, lightweight Aluminum Body Panel Repair using cold spray technology. Developed idea and funding resources, initiated research, developed supply base, and oversaw creation of prototype unit. Conducted trials at Ford Dearborn Stamping Plant, demonstrated success, and obtained buy-in from plant and paint personnel.
- Led projects on Advanced Brake Rotor technologies. Researched and implemented nitrocarburization process to reduce initial corrosion; process yielded \$4M annual warranty cost reduction on F150 in 2018. Developed idea and funding resources, initiated research and oversaw implementation of analytical tool to predict rotor thermal cracking; yielded savings of 3.12 kg/vehicle and \$8/vehicle + reduced M1 timing for future truck program (awarded 2018 Ford VCSE Innovation & Technical Award.) Technology implemented on all MY 2019 and later Ford vehicles.
- Developed research program investigating the use of thermally-spray for aluminum-base brake rotors. Developed and evaluated steel and aluminum alloys for rotor systems. Oversaw creation and testing of rotors; developed improved designs for coating adhesion and rotor cooling for improved high temperature, wear, and corrosion performance. Initiated and completed multiple university alliance projects that leveraged research funding to develop next generation aluminum alloys. Implemented specialized heat-treatment process that resulted in annualized warranty savings of \$4M+.
- Materials lead on project investigating use of advance lightweight technologies in IC engines. Developed technologies for weight reduction in engine blocks and connecting rods. Implemented technology into 1.5L I3 engine blocks that allowed 33% improvement in fuel economy and a 30% reduction in weight without loss of performance.
- Initiated and conducted project on the permanent dimensional growth in 319 Al. Transferred technology through development of a reduced cycle-time heat-treatment. Implemented on two-cylinder head and one engine block programs (~ \$5M annual cost savings.) Technology incorporated in modeling software. Received the 2006 Ford Motor Company Technical Achievement Award.
- Led projects that thoroughly characterized the effect of solidification time, heat treatment, and porosity on the mechanical properties of a cast 319, 356, and 383 aluminum alloys. Information used to create a highly accurate ($\pm 10\%$) analytical model predicting fatigue life in 319 Al. Models are key components of analytical software set predicting component durability prior to casting (\$1M/tooling set savings); software set received 2004 Henry Ford Technology Award.
- Co-researcher on a thermal analysis (TA) project. Determined optimum Sr level for aluminum castings and reduced Sr usage in one foundry (~\$300K annual cost savings.) Transferred TA technology into two aluminum foundries for real-time Sr monitoring/control.

- Materials expert on numerous design, analysis, and failure investigation teams, including experimental diesel engine block and cylinder head (both passed all tests without failure), V8 engine block redesign (10% increase in horsepower), V8 cylinder head redesign (15% increase in horsepower), and 500 HP V8 engine block and cylinder head in Ford GT. 1 patent received for optimized heat-treatment for assembly of F150 Al body structures.
- Author on 36 published papers, 1 book chapter, 9 edited works, 250 internal reports, and 51 technical presentations. Supervised a total of 35 corporate and summer engineering interns. Created material for and taught 2 internal Ford technical courses: *The Metallurgy of Cast Aluminum Alloys* and *Magnesium, Powder Metallurgy, & Metal Matrix Composites*.

Research Engineer

1990 – 1999

Scientific Research Laboratories

- Led projects that thoroughly characterized the effect of solidification time, heat treatment, and porosity on the mechanical properties of a cast 319, 356, and 383 Al alloys. Information used to create a highly accurate ($\pm 10\%$) analytical model predicting fatigue life in 319 Al. Models were key components of analytical software set predicting component durability prior to casting (\$1M/tooling set savings); software received 2004 Henry Ford Technology Award.
- Initiated and conducted project on the permanent dimensional growth in 319 Al. Transferred technology through development of a reduced cycle-time heat-treatment. Implemented on 2 cylinder head and 1 engine block programs (~ \$5M annual cost savings.) Technology incorporated in modeling software. Received the 2006 Ford Motor Company Technical Achievement Award.
- Initiated and managed \$50K program to develop a user-friendly cast aluminum mechanical properties database. Hired and supervised contract programmer that web-enabled database. Database used by 200+ designers/analysts within Ford.
- Co-researcher on a thermal analysis (TA) project. Determined optimum Sr level for aluminum castings and reduced Sr usage in one foundry (~\$300K annual cost savings.) Transferred TA technology into two aluminum foundries for real-time Sr monitoring/control.

UNIVERSITY OF MICHIGAN - DEARBORN, Dearborn, MI**2014 - 2023***Department of Industrial and Manufacturing Systems Engineering*

- Instructor for *AE 581: Material Selection in Automotive Design* & *AE 587: Automotive Manufacturing Processes* (in-person & virtual instruction)
- Industrial advisor and MS dissertation committee member for project entitled: "*Effect of Multiple Holes on Stress Concentrations and Damage Initiation in a Quasi- Isotropic Composite Laminate*" (M. Pirkle – MS 2020.)

LAWRENCE TECHNOLOGICAL UNIVERSITY, Southfield, MI**2012 - 2015***Department of Mechanical Engineering*

- Industrial advisor and dissertation committee member for project entitled: "*Validation of a Conformal Radiator Concept for Improved Automotive Packaging*" (D. Ogbuaku –DEMS 2015)

MICHIGAN TECHNOLOGICAL UNIVERSITY, Houghton, MI*Department of Materials Science and Engineering***2014 – 2020**

- Industrial advisor for senior design projects on Fe-Mn phase diagram revision, high temperature Al alloys, and SEM CRT to PC monitor conversion. Project on high temperature Al alloys received first place in 2018 ASM Undergraduate Design Competition.

*Department of Mechanical Engineering and Engineering Mechanics***2004 – 2005**

- Industrial advisor and dissertation committee member for project entitled: "*An Experimental and Analytical Study of the Effect of Material Microstructure on the Machining of an Al-Si Alloy*" (X. Hu.- PhD 2005).

PATENTS

- #9,551,050B2 – *Aluminum Alloy With Additions of Scandium, Zirconium and Erbium* - 1/24/2017.
- #9,611,526 – *Heat Treatment to Improve Joinability of Aluminum Sheet* - 4/1/2017.
- #9,719,461 - *Bulkhead Insert for an Internal Combustion Engine* - 8/1/2017.
- #9,797,030 - *Coarsening Resistant, Precipitation-Strengthened, Al-Zr-Sc-Er Alloys Capable of Operating at 400 °C* – 10/24/2017
- #10,060,495 – *Dry Friction Damped Mechanical and Structural Metal Components and Methods of Manufacturing the Same* – 8/28/2018
- #10,066,577 – *Extruded Cylinder Liner* – 9/4/2018
- #10,082,187 – *Mechanically Roughened Brake Rotors* – 9/27/2018
- #10,180,114 – *Selective Surface Porosity for Cylinder Bore Liners* – 1/15/2019
- #10,197,120 – *Disc Brake Rotors with Increased Damping Capacity due to Interwire Friction within Cables Embedded in the Rotor Cheeks during the Rotor Molding Process* – 2/5/2019
- #10,267,258 – *Method of Honing High-Porosity Cylinder Liners* – 4/23/2019
- #10,309,469 – *Coulomb Friction Damped Brake Components and Method for Manufacturing Same* – 6/4/2019
- #10,337,510 – *Wear-Resistant Coating For Oil Pump Cavity* – 7/2/2019
- #10,392,685 – *Composite Metal Alloy Material* – 8/27/2019
- #10,450,639 – *Heat Treatment to Improve Joinability of Aluminum Sheet* – 10/22/2019
- #10,480,448 – *Cylinder Bore Having Variable Coating* – 11/19/2019
- #10,569,368 – *Plasma Transfer Wire Arch Wire Feed Control* – 2/25/2020
- #10,640,876 – *Electrical Interconnects for Battery Cells* – 5/5/2020
- #10,734,629 – *Busbar Interconnect Assembly for Vehicle Traction Battery* – 8/4/2020
- #10,746,128 - *Cylinder Bore Having Variable Coating (2nd Issue)*– 8/18/2020
- #10,780,491 - *Aluminum Casting Design with Alloy Set Cores for Improved Intermetallic Bond Strength* – 9/22/2020
- #10,907,569 - *Systems and Methods for a Cylinder Bore Coating Fill Material* – 6/19/2021
- #11,408,061B2 – *High Temperature, Creep-Resistant Aluminum Alloy Microalloyed with Manganese, Molybdenum and Tungsten* – 8/9/2021

- #11,539,096 - *Lipped Retention Member for Retaining a Battery Array and Retention Method using Lipped Retention Member* – 12/27/2022
- #11,581,595 - *Battery array frames with split thermal fin designs for reducing thermal interface material usage* - 2/14/2023
- #12,012,058 – *Electrified Vehicle Battery Packs with Polymer-Based Enclosures* – 6/18/2024

AWARDS

- 2024 ESD Gold Award
- 2020 ASM Detroit Chapter President's Award
- 2018 Ford VCSE Innovation & Technical Award
- 2018 ASM International Fellow
- 2016 Ford VCSE Chief Engineers Award
- 2016 Ford Laboratory Safety Practices Award
- 2016 SAE Withrow Distinguished Speaker Award
- 2012 ASM Detroit Chapter Service Award
- 2011 Ford Motor Company Operational Excellence Award
- 2010 Ford Motor Company Operational Excellence Award
- 2010 Ford Motor Company Product Development Achievement Award
- 2007 SAE H. McFarland Award (Outstanding Service)
- 2006 Ford Motor Company Technical Achievement Award
- SAE Oral Presentation Awards – 2001, 2003, 2006
- 1999 Ford Motor Company Powertrain Operations Excellence Award
- 1999 SAE Arch T. Coldwell Award (Outstanding Paper at SAE Congress)
- 1994 Ford Research Laboratory Operational Excellence Award
- 1987 D.H. Henry Award (Outstanding Senior at Wayne State University)

PROFESSIONAL AFFILIATIONS

- ASM International
 - Detroit Chapter Executive Committee (2006 – 2024)
 - Detroit Chapter Papers & Programs Chair (2021 – 2024)
 - Detroit Chapter Chair (2018 – 2020)
 - ASM International Technical Scholarship Committee (2016 – 2024)
 - Putnam Award Committee Chair (2023 -2025)
 - Student Design Project Award Committee Chair (2022 – 2025)
- AFS
 - Detroit/Windsor Chapter Executive Board – (2021 – 2024)
- SAE
 - Chair, Non-Ferrous Committee 1999 – 2006)
 - Session Organizer (1992 – 1999)
 - SP Editor (2003 – 2006)
- Tau Beta Pi National Engineering Honor Society
- American Welding Society

EXTERNAL PUBLICATIONS

1. Deepak, J., Putatunda, S.K., and Boileau, J.M., *A Novel Step-Up Austenitization and Austempering Heat Treatment Process for Ductile Cast Iron*. **Res Dev Material Sci.** 12(4).RDMS.000794.2020. DOI: 10.31031/RDMS.2020.12.000794
2. Poirier, D., et. al., *Performance Assessment of Protective Thermal Spray Coatings for Lightweight Al Brake Rotors*, **J. Therm Spray Tech.**, Jan. 2019, Vol. 28 Issue 1/2, p. 291-304. <https://doi.org/10.1007/s11666-019-00833-9>
3. Bajaj, S., Putatunda, S.K., and Boileau, J.M., *A Novel Method for the Determination of the Fatigue Threshold and Fracture Toughness from a Single Test*, **Int. J. Metallurgy & Metal Physics**, 3:023.
4. Alshwigi, M., Putatunda, S.K., and Boileau, J., *Development of a Dual Phase Microstructure in Medium Carbon Low Alloy Steel by Continuous Cooling Heat Treatment*, *Int. J Metall Met Phys*, 3:019.
5. Joshi, D., Putatunda, S.K., and Boileau, J.M., *Influence of Cryogenic Treatment on the Electrical and Thermal Properties of Gray Cast Iron*, in **Proc. Materials Science and Technology 2018** October 14–18, 2018, DOI 10.7449/2018/MST_2018_1049_1059.
6. Nagarajan, V.N., Putatunda, S.K., and Boileau, J.M., *Fatigue Crack Growth Behavior of Austempered AISI 4140 Steel with Dissolved Hydrogen*, **Metals** 2017, 7(11), 466; doi:10.3390/met7110466.
7. Panneerselvan, S., Putatunda, S., Gundlach, R., and Boileau, J., *Influence of intercritical austempering on the microstructure and mechanical properties of austempered ductile cast iron (ADI)*, **Materials Science and Engineering: A**, Volume 694, 10 May 2017, Pages 72-80
8. Ogbuaku, D.O., Potter, T.J., and Boileau, J., *A Research Study on a Curved Radiator Concept for Automotive Engine Cooling*, **SAE Paper #2017-01-0632**, SAE Inc., Warrendale, PA, 2017.
9. Maki, C., Byrd, K., McKeough, B., Rentschler, R., Nellenbach, B., Williams, R., and Boileau, J., *MMLV: Aluminum Cylinder Block with Bulkhead Inserts and Aluminum Alloy Connecting Rod*, **SAE Paper #2015-01-1238**, SAE Inc., Warrendale, PA, 2015.
10. Forsmark, J., Dowling, Z., Gibson, K., Mueller, C., Godlewski, L., Zindel, J., and Boileau, J.M., *An Investigation of the Effects of Cast Skin on the Mechanical Properties of an AM60 Die-Cast Magnesium Alloy*, **SAE Paper #2015-01-0510**, SAE Inc., Warrendale, PA, 2015. (Also published in the **SAE International Journal of Materials and Manufacturing**, July 2015.)
11. Panneerselvan, S., Martis, C.J., Putatunda, S.K., and Boileau, J.M., *An Investigation on the Stability of Austenite in Austempered Ductile Cast Iron (ADI)*, **Materials Science and Engineering A**, Vol. 626, January 2015, pp. 237-246.
12. Shen, J., Mao, J., Boileau, J.M., and Chow, C.L., *Material Damage Evaluation with Measured Defects and Multiresolution Numerical Analysis*, **International Journal of Damage Mechanics**, Vol. 23, April 2014, pp. 537 – 566.

13. Martis, C.J., Putatunda, S.K., Boileau, J.M., and Spray, J.G., *The Static and Dynamic Mechanical Properties of a New Low-Carbon, Low-Alloy Austempered Steel*, **Materials Science and Engineering A**, Vol. 589, 1 January 2014, pp. 280-287.
14. Martis, C.J., Putatunda, S.K., & Boileau, J.M., *Processing of a New High Strength, High Toughness Steel with Duplex Microstructure (Ferrite + Austenite)*, **Materials and Design**, Vol. 46, April 2013, pp. 168-174.
15. Forsmark, J., Boileau, J., Houston D., & Cooper, R., *A Microstructural and Mechanical Property Study of an AM50 HPDC Magnesium Alloy*, **International Journal of Metal Casting**, Vol. 6, Issue 1, Winter 2012, pp. 15 – 26.
16. Putatunda, S.K., Martis, C., and Boileau, J.M., *Influence of Austempering Temperature on the Mechanical Properties of a Low-Carbon Low-Alloy Steel*, **Materials Science & Engineering A**, 12 March 2011, <http://dx.doi.org/10.1016/j.msea.2011.03.038>
17. Boileau, J.M., Friedman, P.A., Houston, D.Q., and Luckey, G.S., *Superplastic Response of Continuously Cast AZ31B Mg Sheet Alloys*, **Journal of Materials Engineering and Performance**, v. 19(4), June 2010, pp. 467-480.
18. Shen, J., Mao, J., Reyes, G., Chow, C., Boileau, J., Su, X., and Wells, J., *A Multiresolution Transformation Rule of Material Defects*, **International Journal of Damage Mechanics** 2009; 18; pp. 739.
19. Harris, S.J., O'Neill, A., Boileau, J.M., Donlon, W.T., Su, X., and Majumdar, B.S., *Application of the Raman Technique to Measure Stress States in Individual Si particles in a Cast Al-Si Alloy*, **Acta Materialia**, 55 (2007), pp. 1681 – 1693.
20. Boileau, J.M., Zindel, J.W., Godlewski, L.A., Allison, J.E., and Kofeldt, K.A., *The Effect of Solidification Time and Solution Treatment Time on the Tensile Properties of a Cast 319-T7 Aluminum Alloy*, **SAE Paper #2007-01-1224**, SAE Inc., Warrendale, PA, 2007.
21. Ghosh, S., Valiveti, D.M., Harris, S.J., and Boileau, J.M., *A Domain Partitioning-Based Pre-Processor for Multi-Scale Modeling of Cast Aluminum Alloys*, **Modeling and Simulation in Materials Science and Engineering**, 14 (2006), pp. 1363-1396.
22. Engler-Pinto, C., Lasecki, J., Boileau, J.M., & Allison, J.E., *High Temperature Fatigue of Cast 3xx-Series Aluminum Alloys*, in **Proc. 9th International Fatigue Congress**, Elsevier Ltd., May 14-19, 2006, Atlanta, Georgia, USA, 2006.
23. Hu, X., Sutherland, J.W., and Boileau, J.M., *Characterizing the Effect of 319 Aluminum Microstructure on Machinability – Part 1: Model Development*, **Proceedings of the IMECE 2005 ASME International Mechanical Engineering Conference & Exposition**, Nov. 5 – 11, 2005, Orlando, FL.
24. Hu, X., Sutherland, J.W., and Boileau, J.M., *Characterizing the Effect of 319 Aluminum Microstructure on Machinability – Part 21: Model Validation*, **Proceedings of the IMECE 2005 ASME International Mechanical Engineering Conference & Exposition**, Nov. 5 – 11, 2005, Orlando, FL.
25. Harris, S.J., O'Neill, A., Yang, W., Gustafson, P., Boileau, J.M., Majumdar, B., and Ghosh, S., *Measurement of the State of Stress in Silicon with Micro-Raman Spectroscopy*, **Journal of Applied Physics**, v. 96 no. 12, 15 December 2004.

26. Boileau, J.M., and Allison, J.E., *The Effect of Solidification Time and Heat Treatment on the Fatigue Properties of a Cast 319 Aluminum Alloy*, **Metallurgical and Materials Transaction A**, volume 34A, September 2003, pp. 1807-1820.
27. Boileau, J.M., Cloutier, C., Godlewski, L., Reeber-Symanski, P., Wolverton, C., and Allison, J., *The Dimensional Stability of Cast 319 Al*, **SAE Paper #2003-01-0822**, SAE Inc., Warrendale, PA, 2003.
28. Boileau, J.M., *An Examination of Inclusions in a Quiescent Metal Furnace*, **Proc. 6th International AFS Conference On Molten Aluminum Processing**, AFS, Des Plaines, IL, 2001, pp. 72-91.
29. Boileau, J.M., Weber, S.J., Salzman, R.H., and Allison, J.E., *The Effect of Porosity Size on the Tensile Properties of a Cast 319-T7 Al Alloy*, **AFS Trans.**, v. 109, AFS, Inc., Des Plaines, IL, 2001, pp. 419-432.
30. Boileau, J.M., and Allison, J.E., *The Effect of Porosity Size on the Fatigue Properties in a Cast 319 Aluminum Alloy*, **SAE Paper #2001-01-0818**, SAE International, Warrendale, PA, 2001.
31. Boileau, J.M., *The Effect Of Solidification Time On The Mechanical Properties Of A Cast 319 Aluminum Alloy*, **PhD Thesis**, Wayne State University, Detroit, MI, 2000.
32. Caton, M.J., Jones, J.W., Boileau, J.M., and Allison, J.E., *The Effect Of Solidification Rate On The Growth Of Small Fatigue Cracks In A Cast 319-Type Aluminum Alloy*, **Metallurgical and Materials Transaction A**, vol. 30A, December 1999, pp. 3055 - 3068
33. Allison, J., Jones, J., Caton, M., and Boileau, J., *Microstructural Influences On The Fatigue Of Cast Al*, **Fatigue '99**, Elsevier, Science, London, UK, 1999.
34. Boileau, J., Collins, P., and Allison, J. *The Effect Of Solidification Time And Heat Treatment On The Tensile And Fatigue Properties Of A Cast 319 Al Alloy*, **Proceedings of the 5th International AFS Conference On Molten Aluminum Processing**, AFS, Des Plaines, IL, 1998, pp. 158-172.
35. Boileau, J.M., Zindel, J.W., and Allison, J.E., *The Effect Of Solidification Time On The Mechanical Properties In A Cast A356-T6 Al Alloy*, **SAE Paper #970019**, SAE International, Warrendale, PA, 1997.
36. Vijayaraghavan, R., Palle, N., Boileau, J.M., Zindel, J., Beals, R., and Bradley, F., *A Micro-Model For Aluminum-Silicon Alloys*, **Scripta Materialia**, vol. 35, no. 7, 1996, pp. 861-867.
37. Boileau, J.M. and Allison, J.E., *The Fatigue Behavior Of A Cast Aluminum Alloy*, **Fatigue '96 (Proc. Sixth International Fatigue Congress)**, vol. 2, Elsevier Science, Inc., Oxford, U.K., 1996.
38. Zindel, J.W., Beals, R.S., and Boileau, J.M., *The Effect Of Solidification Time And Strontium Concentration On The Eutectic Silicon Morphology In A356*, **Proceedings Of The Fourth International Conference On Molten Aluminum Processing**, AFS, Des Planes, IL, 1995.
39. You, C.P., Donlon, W.T., and Boileau, J.M., *Sliding Wear Behavior Of An Aluminum-Based Composite*, in: **Tribology Of Composite Materials (Conference Proceedings)**, ed. by P.K. Rohatgi, P. Blau, & C. Yust, ASM International, Metals Park, OH, 1990, pp. 157-167.

BOOK CHAPTERS

1. Kridli, G.T., Friedman, P.A., and Boileau, J.M., "Manufacturing Processes For Light Alloys," Chapter 7 in **Materials, Design, and Manufacturing for Lightweight Vehicles**, ed. P.K. Mallick, Woodhead Publishing - CRC Press, Boca Raton, FL. 1st Edition: 2010; 2nd Edition: 2019.

EDITED WORKS

1. *Developments in Lightweight Aluminum Alloys: 2001-2005*, Boileau, J.M., ed., **SAE Technical Publication PT-130**, SAE, Warrendale, PA, 2006.
2. *Innovations in Steel Sheet Products & Processing & Steel Bar Products*, Akey, C., Anderson, D., Bauerle, P., Boileau, J., et al., eds., **SAE Special Publication SP-2035**, SAE, Warrendale, PA, 2006.
3. *Magnesium Technologies 2006*, Akey, C., Boileau, J., Padfield, T., and Zheng, W., eds., **SAE Special Publication SP-2036**, SAE, Warrendale, PA, 2006.
4. *Lightweight Castings and Aluminum Alloys for Advanced Automotive Applications*, J. Boileau, J. Benedyk, S. Robison, R. DasGupta, and A. Luo, eds., **SAE Special Publication SP-1948**, SAE Warrendale, PA, 2005.
5. *Lightweight Castings and Aluminum Alloys for Advanced Automotive Applications*, J.M. Boileau, J. Benedyk, R. DasGupta, A. Lao, and S. Robison, eds., **SAE Special Publication SP-1838**, SAE International, Warrendale, PA, 2004.
6. *Advances In Lightweight Automotive Castings and Wrought Aluminum Alloys*, J.M. Boileau, J. Benedyk, and S. Robison, eds., **SAE Special Publication SP-1838**, SAE International, Warrendale, PA, 2004.
7. *Achieving Lightweight Vehicles*, C. Akey and J. M. Boileau, eds., **SAE Special Publication SP-1846**, SAE International, Warrendale, PA, 2004.
8. *Advances In Lightweight Materials for Automotive Applications*, C. Akey, and J. M. Boileau, eds., **SAE Special Publication SP-1735**, SAE International, Warrendale, PA, 2003.
9. *Advances In Lightweight Automotive Castings*, S. Robison and J. M. Boileau, eds., **SAE Special Publication SP-1734**, SAE International, Warrendale, PA, 2003.

TECHNICAL PRESENTATIONS

1. *The Electric Vehicle: Driving Change In The Heat Treat Industry*, J.M. Boileau, Keynote Presentation, IMAT/Heat Treat 2021, St. Louis, MO, September 14, 2021.
2. *The Dymaxion House: Failure Analysis of a Historical Artifact*, J.M. Boileau, Presentation to Michigan Technological University MSE Department, Houghton, MI, March 8, 2021
3. *Reflections on 30+ Years as an Automotive Metallurgist & The Dymaxion House: Failure Analysis of a Historical Artifact*, J.M. Boileau, 77th Annual Woodside Lecture, ASM Detroit Chapter, Detroit, MI, October 12, 2020.

4. *Influence of Cryogenic Treatment on the Electrical and Thermal Properties of Gray Cast Iron*, D. Joshi, S.K. Putatunda, and J.M. Boileau, Materials Science and Technology 2018, October 14–18, 2018, Columbus, OH, October 15, 2018.
5. *Lightweight Materials in the Automotive Industry*, J.M. Boileau, Invited Talk for the ASM Notre Dame Chapter, Notre Dame, IN, September 17, 2018.
6. *Automotive Materials*, J.M. Boileau, Invited Talk for the ASM Cleveland Chapter, Cleveland, OH, March 12, 2018.
7. *A Research Study on a Curved Radiator Concept for Automotive Engine Cooling*, D.O. Ogbuaku, T.J. Potter, and J.M. Boileau, J., SAE 2017 Congress, Detroit, MI, April 4, 2017.
8. *MMLV: Aluminum Cylinder Block with Bulkhead Inserts and Aluminum Alloy Connecting Rod*, C. Maki, K. Byrd, B. McKeough, R. Rentschler, B. Nellenbach, R. Williams, and J.M. Boileau, SAE 2015 Congress, Detroit, MI, April 21, 2015.
9. *Weight Reduction Opportunities for Automotive Materials*, J. Boileau, Invited Talk – 3rd International CTI Conference, Novi, MI, May 17 – 19, 2011.
10. *Superplastic Response of Continuously-Cast AZ31B Mg Sheet Alloys*, J. Boileau, P. A. Friedman, D. Q. Houston, and S. G. Luckey, 19th Advanced Aerospace Materials and Processes Conference, Austin, Texas, June 23-27, 2008.
11. *Microstructural Effects on the 319 Al Machinability*, J.M. Boileau, presented at MS&T 2007, Detroit, MI, September 2007.
12. *The Effect of Heat Treatment on the Dimensional Stability of Cast 300-series Al Alloys*, J.M. Boileau, presented at MS&T 2007, Detroit, MI, September 2007.
13. *Microstructural Effects on the Ductility in Cast AM 50 Mg*, J.M. Boileau and J.A. Hines, presented at MS&T 2007, Detroit, MI, September 2007.
14. *The Effect of Solidification Time and Solution-Treatment Time on the Tensile Properties of a Cast 319-T7 Aluminum Alloy*, J.M. Boileau, J.W. Zindel, L. A. Godelwski, J.E. Allison, and K.A. Kofeldt, SAE 2007 World Congress, Detroit, MI, April 2007.
15. *Microstructural Effects on the Ductility In Cast Al*, J.M. Boileau, G. Frank, S. Harris, and A. O'Neill, MST 2005 Conference, Pittsburgh, PA, 9/27/2005.
16. *The Heat Treating Of Aluminum Castings*, J.M. Boileau, Invited Presentation to the ASM Detroit Chapter, May 9, 2005.
17. *The Effect Of Solidification Time On The Fatigue Behavior Of A Cast 319 Aluminum Alloy*, J.M. Boileau, Invited Seminar at Michigan Technological University, February 2004.
18. *Porosity Distributions In A Cast 319 Al Alloy*, J.M. Boileau, Ford Fatigue Workshop, May 27, 2003.
19. *The Dimensional Stability of Cast 319 Aluminum*, J.M. Boileau, C. Cloutier, L. Godlewski, P. Reeber-Symanski, C. Wolverson, and J.E. Allison, SAE 2003 World Congress, Detroit, MI, March 2003.

20. *An Examination Of Inclusions In A Quiescent Metal Furnace*, J.M. Boileau, The Sixth International Conference on Molten Aluminum Processing, Orlando, FL, November 11-13, 2001.
21. *The Effect of Solidification Time and Heat Treatment on the Fatigue Properties of Cast 319 Aluminum*, J.M. Boileau, Ford Fatigue Workshop, October 22, 2001.
22. *The Effect of Porosity Size on the Tensile Properties of a Cast 319-T7 Aluminum Alloy*, J.M. Boileau, S. Weber, R. Salzman, and J. Allison, AFS 105th Casting Congress, Dallas, TX, April 29, 2001.
23. *The Effect of Porosity Size on the Fatigue Properties in a Cast 319 Aluminum Alloy*, J.M. Boileau and J.E. Allison, SAE 2001 World Congress, Detroit, MI, March 5-8, 2001.
24. *Quantitative Microstructure-Property Relationships for Tensile Properties in a Cast 319 Aluminum Alloy*, J.W. Zindel, K.A. Kofeldt, J.M. Boileau, L.A. Godlewski, and J.E. Allison, TMS Annual Meeting, New Orleans, LA, 12-15 February 2001.
25. *The Effect Of Solidification Time On The Fatigue Behavior Of A Cast 319 Aluminum Alloy*, J.M. Boileau, J.E. Allison, and M.J. Caton, 2000 TMS Annual Meeting, Nashville, TN, 3/13/00.
26. *The Effect Of Porosity Size And Distribution On The Fatigue Properties In Cast 319 Al*, J.M. Boileau and J.E. Allison, 1999 TMS Annual Meeting, San Diego, CA, 3/2/99.
27. *The Effect Of Solidification Time & Heat Treatment On Tensile & Fatigue Properties Of A Cast 319 Al Alloy*, J.M. Boileau, P.C. Collins, and J.E. Allison, The 5th International AFS Conference On Molten Aluminum Processing, Orlando, FL, 11/9/98.
28. *The Effect Of Solidification Time On The Fatigue Properties Of A Cast Al Alloy*, J.M. Boileau and J.E. Allison, 1998 ASM Conference & Exhibition, Rosemont, IL, 10/13/98.
29. *The Effect Of Solidification Time On The Fatigue Behavior Of A Cast 319 Aluminum Alloy*, J.M. Boileau and J.E. Allison, TMS Fall 1997 Meeting, September 15 - 18, 1997, Indianapolis, IN.
30. *The Effect Of Magnification On The Measurement Of Porosity*, J.M. Boileau and C.A. Sloan, 101st AFS Casting Congress, April 20 - 23, 1997, Seattle, WA.
31. *The Effect Of Solidification Time On The Mechanical Properties In A Cast A356-T6 Aluminum Alloy*, J.M. Boileau, J.W. Zindel, and J.E. Allison, SAE 1997 Congress, February 25 - 28, 1997, Detroit, MI.
32. *The Effect Of Solidification Time On The Fatigue Behavior Of Cast Aluminum*, J.M. Boileau, J.W. Zindel, and J.E. Allison, TMS Fall 1996 Meeting, October 6 - 9, 1996, Cincinnati, OH.
33. *Modification Of Eutectic Silicon Morphology In 319 Aluminum Alloy*, J.W. Zindel and J.M. Boileau, TMS Fall 1996 Meeting, October 6 - 9, 1996, Cincinnati, OH.
34. *The Fatigue Behavior Of A Cast Aluminum Alloy*, J.E. Allison and J.M. Boileau, Fatigue '96 (The Sixth International Fatigue Congress), May 6 - 10, 1996, Berlin, Germany.
35. *The Effect Of Solidification Time And Strontium Concentration On The Eutectic Silicon Morphology In A356*, J.M. Boileau, J.W. Zindel, and R.S. Beals, The AFS Fourth International Conference On Molten Aluminum Processing, November 12 - 14, 1995, Orlando, FL.
36. *Effect Of Solidification Rate On The Microstructure And Fatigue Properties Of A Cast Aluminum Alloy*, J.M. Boileau, W.T. Donlon, J.W. Zindel, R.S. Beals, & J.E. Allison, TMS Fall 1995 Conference, October 31, 1995, Cleveland, OH.

37. *The Effect Of Strontium Modification On The Fatigue Behavior Of WAP 319 Aluminum*, J.M. Boileau, 1995 Ford Rough Parts Forming Forum, October 3, 1995, Dearborn, MI.
38. *The Molten Metal Processing Of Magnesium*, J.M. Boileau and R.S. Beals, Presentation To Materials Science Department, June 16, 1995.
39. *The Effect of Strontium Modification On The Fatigue Properties Of A Cast Aluminum Alloy*, J.M. Boileau, J.W. Zindel, P.A. McDermott, J.V. Lasecki, W.T. Donlon, and J.E. Allison, TMS Fall 1994 Meeting, October 1994, Rosemont, IL.
40. *Calibration and Verification Of A Numerical Casting Model*, J.W. Zindel, J.M. Boileau, V. Nara, & S. Zimdars, TMS 1993 Fall Meeting, October 1993, Pittsburgh, PA.
41. *Sliding Wear Behavior Of SiCp-Reinforced Aluminum Composites*, J.M. Boileau, Invited Talk - SAE 1992 PASSCAR Meeting, September 1992, Dearborn, MI.
42. *Sliding Wear Behavior Of SiCp-Reinforced Aluminum Composites*, J.M. Boileau, SAE 1992 International Meeting, February 1992, Dearborn, MI.
43. *The Sliding Wear Behavior Of PM 2124/SiCp Metal Matrix Composites*, J.M. Boileau, Wayne State University, December 1991, Detroit, MI.
44. *Sliding Wear Behavior Of SiCp-Reinforced Aluminum Composites*, J.M. Boileau, W.T. Donlon, J.W. Zindel, & C.P. You, TMS 1991 Fall Meeting, October 1991, Cincinnati, OH.
45. *The Sliding Wear Behavior Of SiCp-Reinforced Aluminum Metal Matrix Composites*, J.M. Boileau, Invited Talk To Material Science and Engineering Dept., Wayne State University, Feb. 1991, Detroit, MI.
46. *Sliding Wear Behavior Of SiCp-Reinforced Aluminum Composites*, J.M. Boileau, W.T. Donlon, C.P. You, & J.W. Zindel, Ford-URF Workshop On The Fundamentals Of Metal Matrix Composites, January 31, 1991, Dearborn, MI.
47. *Sliding Wear Behavior Of SiCp-Reinforced Aluminum Composites*, J.M. Boileau, C.P. You, & J.W. Zindel, TMS 1990 Fall Meeting, October 1990, Detroit, MI.
48. *Sliding Wear Behavior Of SiCp-Reinforced Aluminum Composites (Poster)*, J.M. Boileau, C.P. You, & W.T. Donlon, ASM Conference On The Tribology Of Composite Materials, May 1990, Oak Ridge, TN.
49. *Sliding Wear Behavior Of SiCp-Reinforced Aluminum Composites (Poster)*, J.M. Boileau, C.P. You, & W.T. Donlon, TMS-Detroit Section 17th Annual Automotive Materials Symp., May 1990, Ann Arbor, MI.
50. *Sliding Wear Behavior Of Reinforced Aluminum Composites*, J.M. Boileau, C.P. You, & W.T. Donlon, SAE 1990 Conference, February 1990, Detroit, MI.
51. *Sliding Wear Behavior Of Aluminum-Based Metal Matrix Composites*, C.P. You, J.M. Boileau, & W.T. Donlon, TMS 1990 Spring Meeting, February 1990.
52. *Sliding Wear Behavior of Aluminum Composites*, C.P. You, J.M. Boileau, & W.T. Donlon, TMS 1989 Fall Meeting, October 1989.
53. *Sliding Wear Behavior Of SiCp-Reinforced Aluminum Composites*, C.P. You & J.M. Boileau, TMS 1989 Spring Meeting, February 1989.
54. *Aging Effects On Fatigue Crack Growth And Closure In A SiCp-Reinforced 2124 Aluminum Composite*, C.P. You, J.V. Lasecki, J.M. Boileau, & J.E. Allison, TMS 1988 Fall Meeting, October 1988.