

VITA
(Updated 5/1/2020)

DAVID R. JOHNSON

EDUCATION

<u>Degree</u>	<u>Date</u>	<u>School</u>	<u>Field</u>
B.S.	1987	Univ. of Tennessee Knoxville, TN	Engineering Science & Mechanics
M.S.E.	1990	Univ. of Tennessee	Metallurgical Engineering
Ph.D.	1994	Univ. of Tennessee	Metallurgical Engineering

THESES

M.S.E. "Toughness of Tempered Bainitic Microstructures in a 4150 Steel."

Ph.D. "Processing and Mechanical Properties of NiAl-Based In-Situ Composites."

PROFESSIONAL EMPLOYMENT

7/04 - present	Associate Professor, School of Materials Engineering, Purdue University, West Lafayette, IN
8/05 – 8/07	Technical Assistance Program (TAP), Purdue University, West Lafayette, IN (25% appointment).
6/03 - 8/03	Visiting Professor, Materials Science and Engineering Department, Kyoto University, Kyoto, Japan.
8/98 - 7/04	Assistant Professor, School of Materials Engineering, Purdue University, West Lafayette, IN
1996 - 1998	Assistant Professor, Materials Science and Engineering Department, Kyoto University, Kyoto, Japan. Research emphasis on processing and mechanical property relationships. Responsible for two graduate students and a number of fourth year students.
1994 - 1996	Postdoctoral position, Kyoto University, Kyoto, Japan. Directional solidification of TiAl-based alloys with emphasis on controlling the TiAl/Ti3Al lamellar orientation by alloying and varying processing procedures.

- 1992 - 1993 Class instructor as a graduate teaching assistant, University of Tennessee, Knoxville, Tennessee. Introductory (sophomore year) numerical methods course.
- 1987 - 1992 Graduate Teaching Assistant, University of Tennessee, Knoxville, TN. Taught materials science and computer programming laboratories. Graduate student in charge of the materials laboratory.

CONSULTING ACTIVITIES AND INDUSTRIAL COLLABORATIONS

- Powdermet, Inc., Sun Valley, CA Sept. 2001-Dec. 2003
Purdue Technical Assistance Program (TAP), August 2005 - 2007
Purdue Center for Metal Casting (PCMC), core faculty member, 2008-present.

HONORS AND AWARDS

- Outstanding Teaching Assistant for 1992-93, Material Science Department, University of Tennessee
- Postdoctoral research fellowship from the Japan Society for the Promotion of Science and the National Science Foundation
- Reinhardt Schuhmann Teaching Award (Best Teacher Award, Materials Engineering, 1999-2000 academic year)
- Teaching for Tomorrow Award (Purdue University, 1999-2000 academic year)
- Reinhardt Schuhmann Teaching Award (Best Teacher award, Materials Engineering, 2002-2003 academic year)
- Seed for Success Award (Purdue University, 2013)

PROFESSIONAL SOCIETY ACTIVITIES

- Memberships: TMS, ASM, MRS and JIM
- Session chair for poster session in the symposium "Fundamentals of Structural Intermetallics," TMS, 17-21, 2002, Seattle.
- Session chair for MRS Fall Meeting, " Session BB4, Titanium Aluminides - II and other Intermetallics - I," Dec. 2-6, 2002, Boston, MA
- Session chair for TMS annual Meeting, "Beyond Nickel-Base Superalloys; Precious Metal Alloys," March 16, 2003

GRANTS AND CONTRACTS FUNDED

1. NSF International Programs (nomination for a Japan Society for the Promotion of Science [JSPS] postdoctoral fellowship to study at Kyoto University), "Microstructure and Processing Relationships in Directionally Solidified Intermetallic Alloys," principal investigator (1994 - 1995).

2. Ministry of Education, Science and Culture (Japan), Kyoto University, Kyoto Japan, "Alignment of TiAl/Ti₃Al Lamellae in TiAl-Based Alloys," principal investigator, \$25,000 (1997 - 1998).
3. 1999-2000 President's Undergraduate Instructional Equipment Allocation, Purdue University. Proposal was written and funded at \$50,000 to upgrade the MSE 235 laboratory.
4. NASA Microgravity Research Division, "Experimental and Numerical Investigations of Growth Morphologies of Peritectic Reactions," principal investigator: Co-PI: M.J.M. Krane, \$340,000 (2000 - 2003).
5. National Science Foundation (DMR), "Deformation and Fracture of Ruthenium Aluminide," principal investigator, \$214,000 (2000 - 2003).
6. Contract agreement with Powdermet, Inc. in association with a DOE SBIR awarded project (stage 1), "Processing and Design of Multiphase Mo-Alloys from Engineered Powdered Blends," principal investigators: D.R. Johnson & M. A. Dayananda, \$35,000 (Sept. 2001-Dec. 2003).
7. 2002 Differential Fee "Major Project" acquisition. Proposal was written and funded at \$60,000 (with matching cost sharing) to purchase an Atomic Force Microscope for the Microstructural Analysis Facility.
8. Oak Ridge National Laboratory, "Microstructural Control through Solidification Processing of Multiphase Mo-silicide Alloys," principal investigator \$45,000 (2000 - 2003).
9. Center for Advanced Manufacturing at Purdue, Seed grant to develop new nitriding processes, Co-PI: M. A. Dayananda, \$30,000 (2004-2005).
10. National Science Foundation (CBET-0651938), "Control of Transport Phenomena to Enable the Production of TiAl Single Crystals, 8/15/07-7/31/10, \$300,000 (Co-PI, with Prof. Krane).
11. North American Die Casting Association (NADCA) as part of the HyperCAST project through the US Department of Energy (Award No: DE-EE0001100; as-part of multi-university team. PI's: Prof Han (MET), Prof. Bowman).
12. W. M. Keck Foundation, "200 Million Mobility 2DEGs: Pushing Materials to the Extreme," 1/01/2013-12/31/2014, \$1,000,000, Co-PI with Kevin Trumble, Gabor Csathy, and Micheal Manfra (PI).

13. Nanshan Aluminum: 6/01/2012-5/31/2014, \$1,179,821, Co-PI with Kevin Trumble, Matthew Krane, and Qingyou Han. Two projects: (i) "Microstructure evolution and control during homogenization of hared Al alloys (Johnson and Krane)," and (ii) "Deformation processing of cast aluminum alloys," (Trumble and Johnson).
14. NASA Glenn Research Center, "Directional Solidification and Crystal Growth of High Temperature Alloys," 1/01/2013-05/14/2013, \$32,000, PI.
15. Chrysler Corporation, "Shoot Tooling," 8/01/2013-7/31/2014, \$100,00, Co-PI (with Prof. Qingyou Han).
16. Chrysler Corporation, "Increased Die Life, 8/01/2013-7/31/2014, \$200,00, Co-PI (with Prof. Qingyou Han).
17. Fiat Chrysler Automobiles, 07/01/2015-06/30/2016, "Lube Free and / or Dry Lube Die Casting," PI: Qingyou Han (\$25,000 of \$140,000).
18. ArcelorMittal Research and Development, "Study of Boron Segregation and its Effects on Remelting Phenomena in Steel Casting," (8/01/2014-7/31/2017) \$240,00 Co-PI (with Prof. Ortalan and Prof. Krane)
19. AIST-Association for Iron and Steel Technology, "Laboratory Development for Incorporating Modern Iron and Steel Alloys in the Materials Engineering Curriculum at Purdue University, (20176-2017) David Bahr, David Johnson, Kevin Trumble , \$8,000.
20. Bechtel Group, Inc, "Single crystal growth of stainless steel," (09/07/2015 – 10/15/2015) \$4,600
21. QuesTek Innovations LLC, "Directional solidification of Fe-Ni-Cr alloys," (3/14/2016-5/30/2016) \$4,000,
22. Bechtel Marine Propulsion Corporation (Bettis Atomic Power Laboratory), "Single crystal growth of stainless steel," (2017) \$30,000 (PI: D. Johnson).
23. Electronics Inc. "Materials processing path for Almen Strip fabrication to optimize flatness," (2020) \$35,000 (PI's: D. Bahr & D. Johnson).

GRADUATE STUDENT SUPERVISION

M.S. Major Professor

- Sebastien Rosset, "Processing and Characterization of Ruthenium Aluminide Intermetallic Alloys," May 2001.
- Voramon Supatarawanich, "Effects of Microstructure on the Oxidation Behavior of Multiphase Mo-Si-B Intermetallics," December 2001
- Zeynep Kasapoglu, "Effects of Different Processing Techniques on the Fracture Toughness Behavior of Mo-Mo₃Si-T2 Multiphase Alloys," August 2004 (Co-advised with Prof. M.A. Dayananda)
- David Brayshaw, "Determination of residual stress formation in commercial alloys for greater fatigue resistance," December 2006 (Co-advised with Prof. M.A. Dayananda)
- Manuel Acosta, "Phases, structure and strength of Ru-Al-Cr alloys" December 2007 (Co-advised with Prof. E.P. Kvam)
- Tiffany Sanders, Materials Engineering, "Intermetallic behavior in hot dip aluminized steel" August 2007 (Co-advisor with Prof. K. P. Trumble)
- Sailei Zhang, "Modeling solidification microstructure development in TiAl alloys," December 2009 (Co-advised with Prof. M.J.M Krane)
- Xiao Ma, Materials Engineering, (Co-advised with Prof. K.P. Trumble), "In-situ synthesis of AlN+Mg₂Si/Mg matrix composites and microstructural studies," December 2011.
- Elizabeth Heeter, Materials Engineering, "Microstructural Indicators of Transition Mechanisms in Time-Dependent Fatigue Crack Growth in Nickel Base Super Alloys," May 2014.
- Chris McCleary, Materials Engineering (In progress, Co-advised with Prof. M.J.M Krane).
- Kyungjean Min, Materials Engineering (In progress, Co-advised with Prof. K.P. Trumble)

M. S. Advisory Committee

- Y. Masuda, Dept. of Materials Science & Engineering, Kyoto University, Kyoto Japan, Advisor: Prof. M. Yamaguchi, April 1998.
- K. Chihara, Dept. of Materials Science & Engineering, Kyoto University, Kyoto, Advisor: Prof. M. Yamaguchi, April 1999.
- Michael Haskins, Materials Engineering, Advisor: Prof. M.J.M. Krane, Dec. 1999
- Nandini Sundaram, Materials Engineering, Advisor: K. P. Trumble, Aug. 2000
- Shawn Cefalu, Materials Engineering, Advisor: Prof. M.J.M Krane, May 2001
- Ed Ciecko, Materials Engineering, Advisor: Prof. M. A. Dayananda, May 2002
- Christophe Deschaseaux, Materials Engineering, Advisor: R.W. Trice, Dec. 2002
- Rui Shao, Materials Engineering, Advisors: Profs. K. P. Trumble and M.J.M. Krane, May 2003
- Graeme Dickinson, Materials Engineering, Advisor: R.W. Trice, May 2004
- Thomas Morillon, Materials Engineering, Advisor: Prof. M.J.M. Krane, May 2004
- Chris Petorak, Materials Engineering, Advisors: Profs. R.W. Trice and K.J. Bowman, June 2005
- Stephanie Janicek, Materials Engineering, Advisor: Prof. M.J.M Krane, June 2005
- Charles Larkin, Materials Engineering, Advisor: Prof. M. A. Dayananda, Aug. 2005
- Batur Eran, Materials Engineering, Advisor: Prof. R.W. Trice, Dec/ 2005

Tiffany Sanders, Materials Engineering, Advisor, Prof. K. P. Trumble, August 2007
Kameshwaran Swaminathan, Materials Engineering: Prof. Blendell and Prof. Trumble, fall 2012

Ph.D Major Professor

Srinivasan Raghavan, "A Numerical Model for Dendritic Growth in Binary Alloys," May 2005
(Co-advised with Prof. M. J. M. Krane)

Voramon Supatarawanich, "Oxidation Behavior of Multiphase Mo-Mo₃Si-Mo₅SiB₂
Intermetallics," August 2005 (Co-advised with Prof. M. A. Dayananda).

Todd Reynolds, "Solidification Processing, Mechanical Properties and Oxidation of RuAl-Based
Alloys," August 2005.

Sailei Zhang, "Macrosegregation and shrinkage pipe formation in static castings," May 2013,
(Co-advised with Prof. M.J.M. Krane)

Pikee Priya, "Microstructural simulations and homogenization studies in cast aluminum alloys,"
May 2016 (Co-advised with Prof. M.J.M. Krane)

Yiwei Sun, "Microstructure evolution in 6xxx and 7xxx aluminum alloys during extrusion and
related heat treatments," December 2017 (Co-advised with K.P. Prof. Trumble).

Daniel Klenosky, "Large Strain Extrusion Machining of AA7050," 2018 (Co-advised with Prof. K.P.
Trumble).

Kara E Luitjohan, "Boron segregation and its effects in advanced high strength steel," August
2018, (Co-advised with Prof. V. Ortalan)

Duo Huang, Co-advised with Prof. M.J.M Krane (In progress)

Licong An, Co-advised with Prof. G. Cheng (IE) (In progress)

Ph.D. Advisory Committee

Keith Kruger, Materials Engineering, Advisor: Prof. K. J. Bowman, December 1999.

H. N. Lee, Dept. of Materials Science and Engineering, KAIST, Taejon, Korea,
Advisor: D. M. Wee of KAIST, April 1999.

Ed Cieccko, Materials Engineering, Advisor: Prof. M. A. Dayananda, May 2002.

Mi-Hee Cho, Materials Engineering, Advisor: Prof. K. P. Trumble, December 2004

Shawn Cefalu, Materials Engineering, Advisor: Prof. M. J. M. Krane, in progress.

Kevin Day, Materials Engineering, Advisor: Prof. M. A. Dayananda, May 2007.

Raghavan Narayanan, Materials Engineering, Advisor: Prof. A.H. King, December 2007

Shashank Shekhar, Materials Engineering, Advisor Prof. A.H. King, December 2007

Hyun Jun Kim, Materials Engineering, Advisors: Profs. K.J. Bowman and
K. P. Trumble, August 2006.

Christopher Petorak, Materials Engineering, Advisor: Prof. R. Trice, December 2007

Stantosh Kumar, Materials Engineering, Advisor: Prof. Handwerker, March 2010

Pongpat Lortrakul, Materials Engineering, Prof. Trice and Prof. Trumble, December 2011

Milan Rakita, Mechanical Engineering Technology: Prof. Qingyou Han, spring 2013.

Karthik Guda Vishnu, Materials Engineering, Prof. Strachan, spring 2012.

Pylin Sarobol, Materials Engineering, Advisors: Prof. Handwerker and Prof. Blendell,
spring 2013.

Dinakar Sagapuram, Materials Engineering, Advisors: Profs. Trumble and Prof. Chandrasekar, spring 2013.
 Shengxu Xia, Materials Engineering, Advisor Prof. A. El-Azab, spring 2014.
 Kevin Chaput, Materials Engineering, Advisor Prof. K.P. Trumble, spring 2015.
 Keith Morrison, Materials Engineering, Advisor Prof. A. Strachan, spring 2015
 Yunbo Wang, Materials Engineering, Advisors Profs. M.J.M. Krane, K.P. Trumble, spring 2017
 David Brice, Materials Engineering, Advisor Prof. FD.F. Bahr, fall 2019
 Kayla Yano, Materials Engineering, Advisors Profs. M.A. Okuniewski, J.P. Wharry, spring 2019
 Angel Pena, Materials Engineering, Advisor Prof. R.W. Trice, spring 2019
 Leidy Alzate Vargas, Materials Engineering, Advisor Prof. A. Strachan, fall 2019
 Siming Ma, Technology, Advisor Prof. X Wang, spring 2020.
 Chun-Yu Ou, Industrial Engineering, Advisor Prof. R. Liu, spring 2020

In Progress

Steven Bailey	expected 05/2020
Xi Chen	expected 05/2019
John Coleman	expected 12/2019
Cuncaï Fan	expected 08/2019
Siavash Ghanbari	expected 05/2019
Mohammed Issahaq	expected 08/2020
Sae Matsunaga	expected 05/2020
Mohamadrusydi Mohamadyashin	expected 8/2019
Tongjun Niu	expected 05/2021
Sritapaswi Nori	expected 05/2020
Stiven Puentes	expected 05/2021
Mojib Saei	expected 05/2018
Zhongxia Shang	expected 08/2020
Shikha Shrestha	expected 05/2018
Kyle Starkey	expected 05/2021
Vignesh Vivekanandan	expected 08/2021
Yang Wang	expected 05/2019
Dongsheng Wen	expected 05/2021
Jianyue Zhang	expected 05/2021
Jonova Thomas	expected 05/2021
Congying Wang	expected 05/2021
Tianyi Sun	expected 05/2020
Scott Wells	expected 05/2022
Nicholas Richter	expected 05/2022
Matthew Binkley	expected 05/2022
Joseph Anderson	expected 05/2022
Benjamin Stegman	expected 05/2022
Dulus Owen	expected 05/2022

UNDERGRADUATE STUDENT SUPERVISION

Sponsored Projects

99/00	"Processing and Properties of RuAl Eutectic Alloys" GE Fund," Faculty for the Future-Engineering and Science" program.	Rachel Bailey
Spring 2002	"Processing of Mo-Si-B alloys" Undergraduate research funded as part of a DOE/SBIR agreement with Powdermet, Inc, Sun Valley, CA.	Tiffany Biles

MSE 499 and Undergraduate Research Projects

2004/2005	"Casting of Bulk Metallic Glasses	Thomas Reynolds
Spring 2005	"Growth and Characterization of Ru-Al-Cr-Co alloys	Kei Yamamoto
Spring 2005	"Residual stress measurement in nitrided steels"	Dan Cody
Fall 2005	"Solution growth of RuAl"	Adam Sutton
Fall 2008	"Evaluation of Co-W-Al High temperature alloys"	Nicholas Negyi
Fall 2008	"Nickel infiltration through CaO preforms"	Nathan Wenning
Spring 2009	"Evaluation Ti-Al-Ru alloys"	Nicholas Negyi
Spring 2010	" Directional solidification of Ti-Al-Ru eutectic"	Zhenyu Bo
Fall 2010	" Mg based composites"	Salin Kunplin
Fall 2010	"AlN/ Mg Metal Matrix Composites development"	Roy Kusuma
Fall 2010	"Half-Heusler thermoelectric compounds"	Bo Li
Fall 2011	"Mg based composites"	Salin Kunplin
Fall 2011	"TiC Metal Matrix Composites"	Roy Kusuma
Fall 2011	"Processing half-Heusler thermoelectric compounds"	Bo Li
Fall 2012	"Hot cracking in Al castings"	T. Hirvo
Spring 2013	"Hot cracking in Al castings"	T. Hirvo
Spring 2013	"Straightening of Al extrusions"	M. Gastelum,
Spring 2014	"Processing of Fe ₂ N ₁₆ magnetic materials"	Matthew Townsend
Fall 2014	"Processing of Fe ₂ N ₁₆ magnetic materials"	Matthew Townsend
Summer 2015	SURF: NanoHub, modeling of dislocation glide	Michael Sakano
Spring 2016,	"Nanomechanics Simulations,"	Zhao Li
Summer 2016,	" Niobium-aluminum alloys"	Aaron Lichlyter
Summer 2016,	"High Entropy alloys"	Zhao Li
Fall 2016,	"Reactions in Fe-B alloys"	Phillip Gordon

Senior Projects

Materials Science & Engineering, Kyoto University, Kyoto (Japan)

<u>Date</u>	<u>Project Title</u>	<u>Names</u>
Spring '97	"Directional Solidification of TiAl-Mo Alloys."	K. Chihara
Spring '97	"Flux Growth of TiAl."	K. Nagashio
Spring '98	"Directional Solidification of TiAl-Re-Si Alloys with Aligned γ/α_2 Lamellar Microstructures."	Y. Yamanaka

Materials Engineering, Purdue University

<u>Date</u>	<u>Project Title</u>	<u>Names</u>
98/99	"Orientation Studies in Single Crystals Ni-based Turbine Blades," Rolls-Royce Allison, Indianapolis, IN (with Professor Liedl).	Dan Berard Heather Patterson Matt Such Morgan Thomas
98/99	"Welding of Co-Cr-Mo Alloys for Orthopedic Implants," Depuy, Inc., Warsaw, IN (with Professor Krane).	Shawn Cefalu Danny Kable Alison Moon Wenhao Huang
99/00	"Heat Treat Process Improvement for CMSX-4 Ni-based Superalloy," Rolls-Royce Allison, Indianapolis, Indiana.	Jean Jurgonski Brian Tryon Payal Vora
2001/2002	"Design Standard for Specifying Case Carburizing, Nitriding & Carbo-Nitriding" Senior Design: Cummins Inc., Fuel Systems Business, Columbus, Indiana (with Prof. Spitzer).	Kevin Day Jeremy Dulak, Dan Holmes Blake Klinedinst
2004/2005	"Correlation of Crack Growth Behavior and Microstructure in CMSX-4," Roll-Royce Corporation Indianapolis, Indiana	D. Barrett, L. Kane D. Braysahw, G. Stevernat E. Javid, A. Johnson
2005/2006	"Characterization of Core Hardened and Carburized M-50 Tool Steel for use in Future Fuel Systems Products," Cummins Inc., Fuel Systems Business,	L. Garrett, B. Herzog, A. Mackey,

	Columbus, Indiana	A. Ramsey, M. Robison
2006/2007	"Carburization of M50-NiL Tool Steel," Cummins Inc., Fuel Systems Business, Columbus Indiana	A. Thompson J. Huff M. Menzer E. Strobel
2006/2007	"Correlation of Grain Size to Fatigue Properties of Ni-20Cr Alloy," General Electric Global Research, Niskayuna, NY 12308 (with Prof. Handwerker and Prof. Trumble)	B. Anglin M. Bovin D. Corbitt M. Smith
2008/2009	"Carburization of a Low-Carbon Tool Steel for Applications in High Pressure Fuel Systems," Cummins Inc., Fuel System Business, Columbus IN (with Prof. Handwerker)	P. Sajor J. Stang J. Daily A. Marten
2008/2009	"Effects of Salt and Gas Composition on the Hot Corrosion of Nickel Based Superalloys," Roll-Royce Corporation, Indianapolis IN (with Prof. Trice and Prof. Spitzer)	J. Fleetwood T. Lowe M. Sellers N Wenning
2009/2010	"The Effect of Master Heat Alloy Variations on Porosity Levels in Investment Cast Rene 125 Alloy" PCC Airfoils, Minerva, OH	Jason Steill, Tim Hou Bryson Hayes Drew Seely
2010/2011	"The Effect of Master Heat Chemistry on Cracking in Investment Cast GTD444 Alloy" PCC Airfoils, Mentor, OH	Ben Hester Ryan Lass John Brennan Nick Heymer
2011/2012	"Improvement in Radii Design of Directionally Solidified Blades through Computational Modeling" PCC Airfoils, Mentor, OH	Cheng Sun Garrett Nave Dan Kelly Nick Hegyi Andrew Hinshaw
2011/2012	"Scale degradation of high alloy and high carbon steels" Investment Cast GTD444 Alloy" ArcelorMittal, Riverdale, IL (with Prof. Dayananda)	Ashley Lane Brandon Haley Hans Sale Salin Kunplin

<p>2012/2013 “Understanding the Morphological Development of Oxide Scales Formed on Steel Alloy 6150 During Thermomechanical Processing” ArcelorMittal, Riverdale, IL (with Prof. Dayananda)</p>	<p>Lauren Marroni Elizabeth Deutsch Zaixing Zhu Taylor Hirvo</p>
<p>2012/2013 “Effect of Heat Treatment on Mechanical Properties Cannon-Muskegon, Norton Shores, Mi</p>	<p>Joshua McCarley Jake Garves Emily Anthon Phil Pacey Jenna Ling</p>
<p>2013/2014 “CMSX®-8: Low Cycle Fatigue Characterization” and Microstructure of GTD-444” Alcoa Howmet, Whitehall, MI</p>	<p>Travis Anderson Thomas Lambrosa Ben Rumpke Eric Terry</p>
<p>2014/2015 “Investigation of Slivering Defect Formation in Continuously Cast Steel Slabs” ArcelorMittal, Riverdale, IL</p>	<p>Karen Martinez Jon Hilsmier Hans Yovento Ziheng Wu</p>
<p>2015/2016 “Characterization of Residual Stress During the Manufacturing of 1-inch Steel Coil” U.S. Steel</p>	<p>Brian Kadowaki Andrea Love Garrett Wass Haojie Xie</p>
<p>2016/2017 “Optimization of Superalloy Ingot Homogenization Cycles” Haynes International</p>	<p>Alex Kaiser Jared Smith Alex Post John Schrader</p>
<p>2016/2017 “Susceptibility of Ni-Based Superalloys to HotTears with Minor Element Additions” Arconic</p>	<p>Faseel Ahmed Theodore Curtiss Varsha Ganapathy Jason Kint</p>
<p>2017/2018 “Characterization, Positron Annihilation Spectroscopy, and Mechanical Testing of Hydrogen Embrittlement in Advanced High-Strength Steels,” ArcelorMittal</p>	<p>Timothy Elliott Matthew Golm Aaron Lichlyter Tyler Logan</p>

2019/2020	“Understanding hydrogen embrittlement in 110XF steels” ArcelorMittal	Sabrina King John Liu Xin Yi Ng Daniel Whelan
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Summer Research

Summer 2000	"In-Situ Composites: Defining the RuAl-Mo and RuAl-W Systems," NSF-REU program.	Lou Varner
Summer 2000	"Establishing Test Procedures for Dielectric and Piezoelectric Materials," NSF-REU program (DMR-9912195).	Jodi Kite
Summer 2001	"Use of Temperature Gradient Zone Melting for Crystal Growth in Processing of the High-Temperature Intermetallic, RuAl," NSF-REU program (DMR-9912195).	Katie Wells
Summer 2002	"Intermetallic in-situ Composites" NSF-REU program (DMR-9912195).	Charles J. Larkin
Summer 2002	"Solidification of Peritectic Alloys" NSF-REU program (DMR-9912195).	Mathew Muether
Summer 2004	"Oxidation behavior of RuAl alloys" NSF-REU program (DMR-9912195)	Manuel Acosta
Summer 2004	"Characterization of RuAl-C alloys" Summer Undergraduate Research Fellowships Program (SURF)	Dianna Barrett
Summer 2005	"Growth and Characterization of Ru-Al-Cr-Co alloys"	Kei Yamamoto
Summer 2009	Directional Solidification of Titanium Aluminides" Summer Undergraduate Research Fellowships Program (SURF)	Aaron Betker
Summer 2010	Microstructural Analysis of Directionally Solidified Ternary Eutectic Alloys" Summer Undergraduate Research Fellowships Program (SURF)	Keith Morrison

UNDEGRADUATE RECRUITMENT

Laboratory tours and lectures for the Golden Honors Program, Society of Women Engineers, Purdue Engineering Student Council MINDS program, Student Seminars for Top Engineering Prospects (STEP), and Minority Introduction to Engineering (MITE). Lectures and laboratory demonstrations in MSE 190.

COURSES TAUGHT

(1998-1999)

MSE 235 Materials Structure and Properties Laboratories (with Prof. K. J. Bowman)

MSE 382 Mechanical Response of Materials (with Prof. K. J. Bowman)

MSE 430 Materials Processing and Design I (project advisor)

MSE 440 Materials Processing and Design II (project advisor)

(1999-2000)

MSE 235 Materials Structure and Properties Laboratories (with Prof. K. J. Bowman)

MSE 430 Materials Processing and Design I (project advisor)

MSE 440 Materials Processing and Design II (project advisor)

MSE 382 Mechanical Response of Materials

(2000-2001)

MSE 235 Materials Structure and Properties Laboratories (with Prof. K. J. Bowman)

MSE 536 Solidification Processing (with Prof. K. P. Trumble)

MSE 382 Mechanical Response of Materials

(2001-2002)

MSE 235 Materials Structure and Properties Laboratories (with Prof. K. J. Bowman and Prof. E. Slamovich)

MSE 555 Deformation Mechanisms in Crystalline Solids (with Prof. K. J. Bowman)

MSE 382 Mechanical Response of Materials

(2002-2003)

MSE 235 Materials Structure and Properties Laboratories (with Prof. K P Trumble and Prof. E. Slamovich)

MSE 536 Solidification Processing (with Prof. M. J. M Krane)

MSE 382 Mechanical Response of Materials

(2003-2004)

MSE 235 Materials Structure and Properties Laboratories (with Prof. K P Trumble and Prof. E. Slamovich)

MSE 555 Deformation Mechanisms in Crystalline Solids

MSE 556 Fracture Mechanics

MSE 230 Structure and Properties of Materials (TA)

(2004-2005)

MSE 235 Materials Structure and Properties Laboratories (with Prof. E. Slamovich)

MSE 536 Solidification Processing (with Prof K.P. Trumble and M. J. M Krane)

MSE 555 Deformation mechanisms in crystalline solids

MSE 430-440 Senior Design Project

(2005-2006)

MSE 230 Structure and Properties of Materials

MSE 382 Mechanical Response of Materials (with Prof. A. Strachan)

MSE 367 Materials Processing Laboratory (with Profs. J. Youngblood, T. Sands, and J. Blendell)

MSE 430-440 Senior Design Project

(2006-2007)

MSE 235 Materials Structure and Properties Laboratories (with Prof. Strachan)

MSE 536 Solidification Processing

MSE 555 Deformation Mechanisms in Crystalline Solids (with Prof. Trice)

MSE 430-440 Senior Design Project (project advisor)

(2007-2008)

MSE 235 Materials Structure and Properties Laboratories (with Prof. Slamovich)

MSE 430 Senior Design Project (project advisor)

2008-2009

MSE 230 Structure and Properties of Materials

MSE 382 Mechanical Response of Materials (with Prof. W. Chen)

MSE 430-440 Senior Design Project (project advisor)

(2009-2010)

MSE 235 Materials Structure and Properties Laboratories (with Prof. Strachan)

MSE 536 Solidification Processing

MSE 382 Mechanical Response of Materials

MSE 430-440 Senior Design Project (project advisor)

(2010-2011)

MSE 230 Structure and Properties of Materials

MSE 697 Materials Engineering Teaching Experience (with Prof. Bowman)

MSE 382 Mechanical Response of Materials

MSE 430-440 Senior Design Project (project advisor)

(2010-2011)

MSE 190 An Introduction to Materials Science and Engineering (spring semester)

MSE 230 Structure and Properties of Materials

MSE 697 Materials Engineering Teaching Experience (with Prof. Trumble)

MSE 382 Mechanical Response of Materials
MSE 430-440 Senior Design Project (two projects)

(2012-2013)

MSE 235 Structure and Properties of Materials (with Prof. Erk)
MSE 555 Deformation Mechanisms in Crystalline Solids
MSE 382 Mechanical Response of Materials
MSE 430-440 Senior Design Project (two projects)

(2013-2014)

MSE 235 Structure and Properties of Materials (with Prof. Erk)
MSE 556 Fracture of Materials
MSE 382 Mechanical Response of Materials
MSE 430-440 Senior Design Project

(2013-2014)

MSE 235 Structure and Properties of Materials (with Prof. Erk)
MSE 556 Deformation Mechanisms in Crystalline Solids
MSE 382 Mechanical Response of Materials
MSE 430-440 Senior Design Project

(Summer 2015)

MSE 230 Structure and Properties of Materials

(2015-2016)

MSE 5560 Fracture of Materials
MSE 430-440 Senior Design (project advisor)
MSE 230 Structure and Properties of Materials

(Summer 2016)

MSE 235 Materials Properties Laboratory
MSE 499: two student projects

(2016-2017)

MSE 555 Deformation Mechanisms in Crystalline Solids
MSE 430-440 Senior Design. Advisor for two projects: Howmet and Hyanes (with Prof. Titus)
MSE 230 Structure and Properties of Materials

(2017-2018)

MSE 556 Fracture of Materials
MSE 430-440 Senior Design (project advisor)
MSE 230 Structure and Properties of Materials

(2018-2019)

MSE 555 Deformation Mechanisms in Crystalline Solids

MSE 430-440: Senior Design (project advisor)

MSE 330 Processing and Properties of Materials

(2019-2020)

MSE 555 Deformation Mechanisms in Crystalline Solids

MSE 430-440 Senior Design (project advisor)

MSE 382 Mechanical Response of Materials

SCHOOL COMMITTEE ACTIVITIES

Standing Search Committee, 2006, 2014

Graduate Committee, 1998-2007, chair 2004-2007

Computer Committee, 1998-2001.

Millennium Building Committee, 2002-2003.

Undergraduate Committee, 2009-present, chair 2011-present.

Equipment Committee, 2016-present.

ENGINEERING-WIDE COMMITTEES

Junior Faculty Advisory Council, 2003-2005.

Engineering Education Committee, 2003-2006.

Graduate Programs - Internal Assessment Committee, 2006

Advanced Materials and Manufacturing Search Committee, 2006

Presidential Scholarship committee 2014-2017

Awards Committee, 2010-2019

UNIVERSITY-WIDE COMMITTEES

Academic Personnel Grievance Committee, 2003-2006.

JOURNAL PUBLICATIONS

1. D.R. Johnson and W.T. Becker, "Toughness of tempered upper and lower bainitic microstructures in a 4150 steel," *Journal of Materials Engineering and Performance* **2**, 255-263 (1993).
2. X.F. Chen, D.R. Johnson and B.F. Oliver, "Microstructures from a directionally solidified NiAl-Cr eutectic deformed at room temperature," *Scripta Metallurgica et Materialia* **30**, 975-980 (1994).
3. D.R. Johnson and B.F. Oliver, "Ternary peritectic solidification in the NiAl-Ni₂AlTa-NiAlTa system," *Materials Letters* **20**, 129-133 (1994).

4. X.F. Chen, D.R. Johnson, R.D. Noebe and B.F. Oliver, "Deformation and fracture of a directionally solidified NiAl-28Cr-6Mo eutectic alloy," *Journal of Materials Research* **10**, 1159-1170 (1995).
5. D.R. Johnson, X.F. Chen, B.F. Oliver, R.D. Noebe and J.D. Whittenberger, "Processing and mechanical properties of in-situ composites from the NiAl-Cr and the NiAl-(Cr,Mo) eutectic systems," *Intermetallics* **3**, 99-113 (1995).
6. D.R. Johnson, X.F. Chen, B.F. Oliver, R.D. Noebe and J.D. Whittenberger, "Directional solidification and mechanical properties of NiAl-NiAlTa alloys," *Intermetallics* **3**, 141-152 (1995).
7. D.R. Johnson, B.F. Oliver, R.D. Noebe and J.D. Whittenberger, "NiAl-based polyphase in-situ composites in the NiAl-Ta-X (X=Cr, Mo, or V) systems," *Intermetallics* **3**, 493-503 (1995).
8. S.M. Joslin, D.R. Johnson, B.F. Oliver, R.D. Noebe and J.D. Whittenberger, "Containerless automated processing of single crystal NiAl and intermetallic polyphase composites," *J. Advanced Materials* **27**, 19-25 (1996).
9. T.S. Newport, B.F. Oliver, D.R. Johnson and R.D. Noebe, "Containerless automated processing of high-purity intermetallic compounds and composites," *Materials and Manufacturing Processes* **11**, 119-136 (1996).
10. D.R. Johnson, H. Inui and M. Yamaguchi, "Directional solidification and microstructural control of the TiAl/Ti₃Al lamellar microstructure in TiAl-Si alloys," *Acta Metallurgica et Materialia* **44**, 2523-2535 (1996).
11. M. Yamaguchi, H. Inui, S. Yokoshima, K. Kishida and D.R. Johnson, "Recent progress in our understanding of deformation and fracture of two-phase and single-phase TiAl alloys," *Materials Science and Engineering A* **A213**, 25-31 (1996).
12. R. Reviere, G. Sauthoff, D. Johnson and B. Oliver, "Microstructure of directionally solidified eutectic based Fe(Al,Ta)/Fe₂Ta(Al) alloys as a function of processing conditions," *Intermetallics* **5**, 161-172 (1997).
13. J. Daniel Whittenberger, R.D. Noebe, D.R. Johnson and B.F. Oliver, "Compressive and tensile creep of a directionally solidified NiAl-14.5(at%) Ta alloy," *Intermetallics* **5**, 173-183 (1997).

14. D.R. Johnson, Y. Masuda, H. Inui and M. Yamaguchi, "Alignment of the TiAl/Ti₃Al lamellar microstructure in TiAl alloys by growth from a seed material," *Acta Metallurgica et Materialia* **45**, 2523-2533 (1997).
15. D.R. Johnson, Y. Masuda, H. Inui and M. Yamaguchi, "Alignment of the TiAl/Ti₃Al lamellar microstructure in TiAl alloys by directional solidification," *Materials Science and Engineering A* **239-240**, 577-583 (1997).
16. D.R. Johnson, H. Inui and M. Yamaguchi, "Crystal growth of TiAl alloys," *Intermetallics* **6**, 647-652 (1998).
17. K. Kishida, D.R. Johnson, Y. Masuda, H. Umeda, H. Inui and M. Yamaguchi, "Deformation and fracture of PST crystals and directionally solidified ingots of Ti-Al-based alloys," *Intermetallics* **6**, 679-683 (1998).
18. D.R. Johnson, K. Chihara, H. Inui and M. Yamaguchi, "Microstructural control of TiAl-Mo-B alloys by directional solidification", *Acta Metallurgica et Materialia* **46**, 6529-6540 (1998).
19. T. Yamanaka, D.R. Johnson, H. Inui and M. Yamaguchi, "Directional solidification of TiAl-Re-Si alloys with aligned α/α_2 lamellar microstructures, *Intermetallics* **7**, (1999) 779-784.
20. D.R. Johnson, "Intermetallic-based Composites" *Current Opinion in Solid State and Materials Science* **4** (1999) 249-253.
21. H.N. Lee, D.R. Johnson, H. Inui, M.H. Oh, D.M. Wee, and M. Yamaguchi, "Microstructural control and lamellar stability in TiAl alloys containing Mo and C" *Acta Materialia*, **48** (2000) 3221-3233.
22. D. R. Johnson, Y. Masuda, H. Inui and M. Yamaguchi, "Creep deformation of TiAl-Si alloys with aligned lamellar microstructures," *Metallurgical Transaction A*, **31A** (2000) 2463-2473.
23. M. Yamaguchi, D.R. Johnson, H. N. Lee, and H. Inui, "Directional solidification of TiAl-base alloys," *Intermetallics* **8** (2000) 511-517.
24. S. Muto, T. Yamanaka, H. N. Lee, D. R. Johnson, H. Inui, and M. Yamaguchi, "Directional solidification of TiAl-based alloys and properties of directionally solidified ingots," *Advanced Engineering Materials*, **3** (2001) 391-394.
25. D. R. Johnson, H. N. Lee S. Muto, T. Yamanaka, H. Inui, and M. Yamaguchi, "Microstructure and Creep Behavior of Directionally Solidified TiAl-base Alloys," *Intermetallics*, **9** (2001) 923-927.

26. H. N. Lee, D. R. Johnson, H. Inui, M. H. Oh, D. M. Wee and M. Yamaguchi, "Directional Solidification and Creep Deformation of a Ti-46Al-1.5Mo-0.2C (at.%) Alloy" *Intermetallics*, **10** (2002) 841-950.
27. H.N. Lee, D.R. Johnson, H. Inui, M.H. Oh, D.M. Wee, M. Yamaguchi, "A composition window in the TiAl-Mo-Si system suitable for lamellar structure control through seeding and directional solidification," *Mat. Sci. Engr. A*, **A329-331** (2002) 19-24.
28. S. Muto, T. Yamanaka, D.R. Johnson, H. Inui, M. Yamaguchi, "Effects of refractory metals on microstructure and mechanical properties of directionally-solidified TiAl alloys," *Mat. Sci. Engr. A*, **A329-331** (2002) 424-429.
29. V. Supatarawanich, D. R. Johnson, and C. T. Liu, "Effects of microstructure on the oxidation behavior of multiphase Mo-Si-B alloys," *Mat. Sci. Engr. A*, **A344** (2003) 328-339.
30. T.D. Reynolds and D.R. Johnson, "Microstructure and mechanical properties of Ru-Al-Mo alloys," *Intermetallics* **12** (2004)157-164.
31. V. Supatarawanich, D. R. Johnson, and C. T. Liu, "Oxidation behavior of multiphase Mo-Si-B alloys," *Intermetallics* **12** (2004) 721-725.
32. David R. Johnson, Haruyuki Inui, Shinji Muto, Yuji Omiya, and Takamitsu Yamanaka, "Microstructural development during directional solidification of β -seeded TiAl alloys," *Acta. Mater.* **54** (2006) 1077-1085.
33. Voramon S. Dheeradhada, David R. Johnson, and Mysore A. Dayananda, "Diffusional Analysis of a Multiphase Oxide Scale Formed on a Mo-Mo₃Si-Mo₅SiB₂ Alloy," *Journal of Phase Equilibria and Diffusion*, **27** (2006) 582-589.
34. M. J. M. Krane, D. R. Johnson, and S. Raghavan, "The development of a cellular automata-finite volume model for dendritic growth," *Applied Mathematical Modeling*, **33** (2009) 2234-2247.
35. M. Acosta, T.D. Reynolds, D.R. Johnson, E.P. Kvam, "Characterization of two-phase B2-HCP alloys in the Ru-Al-Cr system," *Intermetallics*, **18** (2010) 2281-2288.
36. S. Zhang, J. Yanke, D. R. Johnson, M. J. M. Krane, "Modeling defects in castings using a Volume-of-Fluid method," *Int. J. Num. Meth. Heat Fluid Flow*, **24(2)** (2014) 468-482.
37. SL Zhang, DR Johnson, MJM Krane, "Influence of riser design on macrosegregation in static castings," *International Journal of Cast Metals Research*, **28(1)** (2015) 28-38.

38. M Heiden, A Kustas, K Chaput, E Nauman, D Johnson, L Stanciu, "Effect of microstructure and strain on the degradation behavior of novel bioresorbable iron–manganese alloy implants," *Journal of Biomedical Materials Research Part A*, **103** (2015) 738-745
39. DR Johnson, C McCleary, MJM Krane, KP Trumble "Measuring Thermomechanical Properties of AA7050 Near the Solidus Temperature," *International Journal of Metalcasting* **10(2)**, (2016) 147-156
40. M Heiden, S Huang, E Nauman, D Johnson, L Stanciu, "Nanoporous metals for biodegradable implants: Initial bone mesenchymal stem cell adhesion and degradation behavior," *J Biomed Mater Res Part A* (2016, DOI: 10.1002/jbm.a.35707).
41. Pikee Priya, David R Johnson, Matthew JM Krane, "Numerical study of microstructural evolution during homogenization of Al-Si-Mg-Fe-Mn alloys," *Met. and Mat Trans A*, **47** (2016) 4625–4639. (<https://doi.org/10.1007/s11661-016-3610-8>)
42. Yiwei Sun, David R Johnson, Kevin P Trumble, "Effect of Zr on recrystallization in a directionally solidified AA7050," *Materials Science and Engineering: A*, **700** (2017) 358-365. (<https://doi.org/10.1016/j.msea.2017.06.026>)
43. Pikee Priya, David R Johnson, Matthew JM Krane, "Modeling phase transformation kinetics during homogenization of aluminum alloy 7050," *Computational Materials Science*, **138** (2017) 277-287. (<https://doi.org/10.1016/j.commatsci.2017.06.043>)
44. Pikee Priya, David R Johnson, Matthew JM Krane, "Precipitation during cooling of 7XXX aluminum alloys," *Computational Materials Science*, **139** (2017) 273-284. (<https://doi.org/10.1016/j.commatsci.2017.08.008>)
45. Kara E Luitjohan, Matthew John M Krane, Volkan Ortalan, David R Johnson, "Investigation of the metatectic reaction in iron-boron binary alloys," *Journal of Alloys and Compounds*, **732** (2018) 498-505. (<https://doi.org/10.1016/j.jallcom.2017.10.238>)
46. AB Kustas, DR Johnson, KP Trumble, S Chandrasekar, "Enhancing workability in sheet production of high silicon content electrical steel through large shear deformation," *Journal of Materials Processing Technology*, **257** (2018) 155-162. (<https://doi.org/10.1016/j.jmatprotec.2018.02.027>)
47. A Nicolas, AW Mello, Y Sun, DR Johnson, MD Sangid, "Reconstruction methods and analysis of subsurface uncertainty for anisotropic microstructures," *Materials Science and Engineering: A*, **760** (2019) 76-87. (<https://doi.org/10.1016/j.msea.2019.05.089>)

48. Y Sun, X Bai, D Klenosky, K Trumble, D Johnson, "A Study on Peripheral Grain Structure Evolution of an AA7050 Aluminum Alloy with a Laboratory-Scale Extrusion Setup," *Journal of Materials Engineering and Performance*, 28(8) (2019) 5156-5164. (<https://doi.org/10.1007/s11665-019-04208-7>)
49. K Luitjohan, M Krane, D Johnson, "Effect of Solute Elements on Boron Segregation in Boron-Containing Steels," *ISIJ International*, 60(1) (2020) 92-98. (<https://doi.org/10.2355/isijinternational.ISIJINT-2019-258>)
50. D. Wen, C-H Chang, S Matsunaga, G Park, L Ecker, SK Gill, M Topsakal, MA Okuniewski, S Antonov, DR Johnson, MS Titus, "Structure and tensile properties of Mx (MnFeCoNi) 100-x solid solution strengthened high entropy alloys," *Materialia* 9 (2020) 100539. (<https://doi.org/10.1016/j.mtla.2019.100539>)
51. S Matsunaga, D Huang, SB Inman, JC Mason, D Konitzer, DR Johnson, MS Titus, "Planar Front Growth of Single Crystal Ni-Based Superalloy René N515," *JOM* 72 (2020) 1794–1802. (<https://doi.org/10.1007/s11837-020-04091-x>)

REFEREED CONFERENCE PROCEEDINGS

1. D.R. Johnson, S.M. Joslin, B.F. Oliver, R.D. Noebe and J.D. Whittenberger, "Intermetallic/Metallic polyphase in-situ composites," in *Intermetallic Matrix Composites II*, D. Miracle et al., eds., MRS Symp. Proc. Vol. 273, Pittsburgh PA, 87-92 (1992).
2. D.R. Johnson, S.M. Joslin, B.F. Oliver, R.D. Noebe and J.D. Whittenberger, "High purity NiAl single crystals and composites by containerless automated processing," in *First International Conference on Processing Materials for Properties*, H. Henein and T. Oki, eds., TMS, Warrendale PA, 865-870 (1993).
3. D.R. Johnson, S.M. Joslin, R.D. Reviere, B.F. Oliver and R.D. Noebe, "Containerless automated processing of intermetallic compounds and composites," in *Processing and Fabrication of Advanced Materials for High Temperature Applications-II*, V.A. Ravi and S. Srivatsan, eds., TMS, Warrendale, PA, 77-90 (1993).
4. D.R. Johnson, B.F. Oliver, R.D. Noebe and J.D. Whittenberger, "Processing and mechanical properties of directionally solidified NiAl/NiAlTa alloys," in *Processing and Fabrication of Advanced Materials for High Temperature Applications-III*, V.A. Ravi, S. Srivatsan, and J.J. More, eds., TMS, Warrendale, PA, 619-629 (1994).

5. K. Kishida, D.R. Johnson, Y. Shimada, H. Inui, Y. Shirai and M. Yamaguchi, "Characteristics, benefits and applications of PST TiAl crystals," *Gamma Titanium Aluminides*, Y-W. Kim, R. Wagner, and M. Yamaguchi, eds., TMS, Warrendale, PA., 219-229 (1995).
6. K. Kishida, S. Yokoshima, D.R. Johnson, H. Inui and M. Yamaguchi, "Mechanical Properties of TiAl-based alloys," in *NATO -Advanced Study Institute on Stability of Materials*, A. Gonis, P. E. A. Turchi, and J. Kudrnovsky, eds., Plenum Press, 547-579 (1995).
7. M. Yamaguchi and D.R. Johnson, "Intermetallics research in Japan - with particular emphasis on TiAl," in *Processing & Design Issues in High Temperature Materials*, N.S. Stoloff and R.H. Jones, eds., TMS, Warrendale, PA, 175-184 (1996).
8. K. Kishida, D.R. Johnson, Y. Shimada, Y. Masuda, H. Inui and M. Yamaguchi, "Deformation of diffusion-bonded bi-PST and directionally solidified crystals of TiAl," in *High-Temperature Ordered Intermetallic Alloys VII*, C.C. Koch et al., eds., MRS Symp. Proc. Vol. 460, Pittsburgh PA, 53-63 (1997).
9. N. Akiyama, S. Yokoshima, D.R. Johnson, K. Kishida, H. Inui and M. Yamaguchi, "Fracture and fracture toughness of directionally solidified TiAl-based two-phase alloys," George R. Irwin Symposium on Cleavage Fracture," edited by Kwai S. Chan, MRS, Pittsburgh PA, 293-303 (1997).
10. D.R. Johnson, Y. Masuda, Y. Shimada, H. Inui and M. Yamaguchi, "Directional solidification of TiAl-based alloys," in *Structural Intermetallics 1997*, M. V. Nathal et al., eds., TMS, Warrendale, PA, 287-294 (1997).
11. T. Yamanaka, D.R. Johnson, Y. Masuda, H. Inui, and M. Yamaguchi, "Directional solidification and creep deformation of TiAl-Si Alloys," *Gamma Titanium Aluminides-1999*, Y-W. Kim, D. M. Dimiduk, and M.H. Loretto, eds., TMS Warrendale, PA, 295-300 (1999).
12. H.N. Lee, D.R. Johnson, H. Inui, M.H. Oh, D.M. Wee, M. Yamaguchi, "Microstructure control and lamellar stability in a cast TiAl as a function of Mo and C," *Gamma Titanium Aluminides-1999*, Y-W. Kim, D.M. Dimiduk, and M.H. Loretto, eds., TMS Warrendale, PA, 309-314 (1999).
13. D.R. Johnson, Y. Masuda, T. Yamanaka, H. Inui and M. Yamaguchi, "Creep deformation of TiAl-Si alloys with aligned lamellar microstructures," *Gamma Titanium Aluminides-1999*, Y-W. Kim, D. M. Dimiduk, and M. H. Loretto, eds., TMS Warrendale, PA, 627-631 (1999).

14. Ho-Nyun Lee, M-H Oh, D.R. Johnson, H. Inui, M. Yamaguchi, D-M Wee, "Control of lamellar orientation in TiAl alloys by directional solidification using a seed material," *J. Korean Institute of Metals & Materials*, 37(11), 1343-1349 (1999).
15. S. Rosset, R. Cefalu, L. Varner, and D. Johnson, "Crystal growth of RuAl-base alloys," in *High-Temperature Ordered Intermetallic Alloys IX*, J H. Schneibel *et al.* eds, Mat. Res. Soc. Symp., vol. 646 (2001) pp. N5.28.1-6.
16. Y. Omiya, S. Muto, T. Yamanaka, D.R. Johnson, H. Inui, and M. Yamaguchi, "Alignment of the Lamellar Orientation of Multi-Component TiAl Alloys by Directional Solidification (DS) and Mechanical Properties of DS Ingots," *Mat. Res. Soc. Symp Proc. Vol 753* (2003) p. BB5.2.
17. Todd Reynolds and David Johnson, "Processing and Characterizing RuAl Eutectics," *Mat. Res. Soc. Symp Proc. Vol 753* (2003) p. BB5.34.
18. S. Raghavan, D. R. Johnson, and M. J. M. Krane, "Different rule sets for cellular automata modeling of peritectic dendritic growth," in *Modeling of Casting, Welding and Advanced Solidification Processes - X*, D. Stefanescu, J. Warren, M. Jolly and M. Krane (eds.), TMS, pp. 107-114 (2003).
19. H. Inui, D. R. Johnson, M. Yamaguchi, "Directional solidification of TiAl alloys for aligning lamellar microstructures and mechanical properties of directionally-solidified ingots," *Materials Science Forum*, **426-4** (2003) 1733-1738.
20. V. Supatarawanich, D. R. Johnson, M. A. Dayananda and C. T. Liu, "Processing and properties of multiphase Mo-Si-B alloys," *Materials Science Forum*, **426-4** (2003) 4301-4306.
21. H. Inui, Y. Omiya, D.R. Johnson, "Directional solidification of TiAl alloys with Nb concentrations for aligning lamellar microstructures," in *Niobium High Temperature Applications. Proceedings of the International Symposium on Niobium for High Temperature Applications* TMS Warrendale PA, 2004, pp. 265-275.
22. S. Raghavan, M.J.M. Krane, D.R. Johnson, "A cellular automaton for growth of solutal dendrites: factors influencing artificial anisotropy in growth kinetics" in *Solidification processes and microstructures: A symposium in honor of Prof. W. Wurz*, edited by M. Rappaz, C. Beckermann and R. Trivedi, TMS 2004, pp 413-418.

23. Todd Reynolds and David Johnson, "Solidification Processing and Fracture Behavior of RuAl-Based Alloys," *Mater. Res. Soc. Symp. Proc.* Vol. 842 (2005) S6.2.1 (MRS paper: ribbon award).
24. T.D. Reynaols, M. Acosta, and D.R. Johnson, "Processing and Mechanical Properties of RuAl-based alloys," *Materials Science Forum*, **539-543** (2007) 1469-1474
25. Y. Hashimoto, N.L. Okamoto, M. Acosta, D.R. Johnson, H. Inui, "Processing, Microstructure, and Thermal Expansion Measurements of High Temperature Ru-Al-Cr B2 Alloys," *Mater. Res. Soc. Symp. Proc.* **1128** (2009) 1128-U05-25.
26. Sailei Zhang, David R. Johnson, Matthew J.M. Krane, "Effects of Geometric Constraint on Phase Selection and Segregation in Cast TiAl," *Mater. Res. Soc. Symp. Proc.* **1295** (2011) 183-188.
27. Xiao Ma, Salin Kuplin, David Johnson, and Kevin Trumble, "In situ synthesis of AlN/Mg Matrix Composites," in the 140th Annual Meeting and Exhibition, Supplemental Proceedings, Volume 2, Materials Fabrication, Properties, Characterization, and Modeling, TMS, (2011) 851-858.
28. Xiao Ma, Roy Kusuma, Salin Kuplin, David Johnson, and Kevin Trumble, "Development in the 40 vol.% and 20 vol. % AlN+Mg₂Si/Mg Matrix Composites," in Phase Stability, Diffusion, Kinetics and their Applications (PSDK-VI), Materials Science and Technology (MS&T), (2011) 309-315.
29. Pikee Priya, Matthew John M. Krane, David R. Johnson "A Numerical and Experimental Study of Homogenization of Al-Si-Mg Alloys," in Light Metals 2014, John Grandfield Ed., TMS (2014) 423-428.
30. Yiwei Sun, David R Johnson, Kevin Trumble, Pikee Priya, Matthew John M. Krane, "Effect of Mg₂Si Phase on Extrusion of AA6005 Aluminum Alloy," in Light Metals 2014, John Grandfield Ed., TMS (2014) 429-433.
31. Aisling Coughlan, David Johnson, Heidi A. Diefes-Dux, K. Anna Douglas², Kendra Erk, Tanya A. Faltens, and Alejandro Strachan "Enhanced Learning of Mechanical Behavior of Materials via Combined Experiments and nanoHUB Simulations: Learning Modules for Sophomore MSE Students ," *Mater. Res. Soc. Symp. Proc.* (2015) 1762. doi:10.1557/opl.2015.152.
32. DR Klenosky, DR Johnson, S Chandrasekar, KP Trumble, "Characterization of Large Strain Extrusion Machining (LSEM) of AA7050," *Light Metals 2017*, Springer (2017) 301-304. (DOI: 10.1007/978-3-319-51541-0_40).

33. K Min, D Johnson, K Trumble, "Gallium Evaporation Behavior for Purification in Molecular Beam Epitaxy," *Materials Processing Fundamentals 2017*, Springer (2017) 73-83. (DOI: 10.1007/978-3-319-51580-9_8)

PRESENTATIONS

1. **D.R. Johnson**, B.F. Oliver, R.D. Noebe and J.D. Whittenberger, "Processing and Mechanical Properties of directionally Solidified NiAl/NiAlTa Alloys," TMS Fall Meeting, Pittsburgh, PA, 1993.
2. **D.R. Johnson**, H. Inui and M. Yamaguchi, "Solidification Microstructures in TiAl+Si Alloys and Their Application for Improved Toughness," *The Japan Institute of Metals, Spring Symposia*, April 4-6, 1995.
3. **D.R. Johnson**, Y. Shimada, H. Inui and M. Yamaguchi, "Alignment of the TiAl/Ti₃Al Lamellar Microstructure in TiAl-based Alloys by Directional Solidification," *The Japan Institute of Metals 117th Meeting*, Honolulu, December 13-15, 1995.
4. **D.R. Johnson**, Y. Masuda, H. Inui and M. Yamaguchi, "Directional Solidification and the Growth of Large Aligned TiAl PST-Crystals," *The Japan Institute of Metals, Spring Symposia*, March 26-28, 1996.
5. **D.R. Johnson**, Y. Masuda, H. Inui and M. Yamaguchi, "Mechanical Properties of Directionally Solidified TiAl Alloys," *The Japan Institute of Metals, Fall Symposia*, September 28-30, 1996.
6. **D.R. Johnson**, Y. Masuda, Y. Shimada, H. Inui and M. Yamaguchi, "Directional Solidification of TiAl-based Alloys," *Report of the 123rd Committee on Heat-Resisting Metals and Alloys*, Japan Society for the Promotion of Science, Vol. 37 No. 3, p. 275 (1996).
7. **D.R. Johnson**, K. Chihara, H. Inui and M. Yamaguchi, "Directional Solidification of TiAl+Mo Alloys," *The Japan Institute of Metals, Spring Symposia*, March 1997.
8. **D.R. Johnson**, Y. Masuda, H. Inui and M. Yamaguchi, "Alignment of the TiAl/Ti₃Al Lamellar Microstructure in TiAl Alloys by Directional Solidification," *4th International Conference on High-Temperature Intermetallics*, MRS Spring Meeting, San Diego, CA, April 27-May 1, 1997.
9. **D.R. Johnson**, Y. Masuda, Y. Shimada, H. Inui and M. Yamaguchi, "Directional Solidification of TiAl-based Alloys," *International Symposium on Structural Intermetallics at Seven Springs*, Seven Springs Resort, Champion, PA, September 21-26, 1997.

10. **M. Yamaguchi**, D.R. Johnson and H. Inui, "Strengthening of TiAl Alloys by Directional Solidification," TMS Annual Meeting, San Antonio, TX, February 15-19, 1998.
11. **K. Chihara**, D.R. Johnson, H. Inui and M. Yamaguchi, "Processing and Microstructural Control of Directionally Solidified TiAl-Mo-B Alloys, Third Pacific Rim International Conference on Advanced Materials and Processing, Honolulu, HI, July 12-16, 1998.
12. **K. Chihara**, D.R. Johnson, H. Inui and M. Yamaguchi, "Microstructure control of TiAl-Mo-B alloys by directional solidification," MRS 1998 Fall Meeting, Boston, MA, Nov 30-Dec 4, 1998.
13. **T. Yamanaka**, D.R. Johnson, Y. Masuda, H. Inui, and M. Yamaguchi, "Directional solidification and creep deformation of TiAl-Si Alloys," TMS 1999 Spring Meeting, San Diego, CA, March 1-3, 1999 (poster).
14. **H. N. Lee**, D.R. Johnson, H. Inui, M.H. Oh, D.M. Wee, M. Yamaguchi, "Microstructure control and lamellar stability in a cast TiAl as a function of Mo and C," TMS 1999 Spring Meeting, San Diego, CA, March 1-3, 1999 (poster: 2nd place finish, Gamma Titanium session).
15. **D.R. Johnson**, Y. Masuda, T. Yamanaka, H. Inui and M. Yamaguchi, "Creep Deformation of TiAl-Si Alloys with Aligned Lamellar Microstructures," 2nd International Symposium On Gamma Titanium Aluminides, TMS Annual Meeting, San Diego, CA, Feb. 28-March 4, 1999.
16. **D. R. Johnson**, "Solidification Textures in TiAl Alloys," Workshop on Thermomechanical Processing of Metals & Ceramics," Purdue University, West Lafayette, IN, May 12, 1999.
17. **Sebastien Rosset**, D.R. Johnson, "New Materials for High Temperature Structural Applications- Processing of RuAl," AAE & Space Activities Poster Session, Purdue University, West Lafayette, IN, October 22, 1999.
18. **T. Murata**, H. Inui, D.R. Johnson, and M. Yamaguchi, "Crystal growth of beta-silicon carbide single crystals from some transition-metal silicide solutions," MRS Fall meeting, Boston, MA, Nov. 29, 1999.
19. **S. Rosset**, R. Cefalu, L. Varner, and D. Johnson, "Crystal growth of RuAl-base alloys," in *High-Temperature Ordered Intermetallic Alloys IX*, MRS Fall meeting, Boston, MA, 2001 (poster).
20. **V. Supatarawanich**, D. R. Johnson, and C.T. Liu, "Effects of Microstructure on oxidation behavior of Mo-Si-B Intermetallics," Gordon Research Conference: High Temperature Corrosion, Colby-Sawyer College, 7/22/01-7/27/01 (poster).

21. **S. Rosset**, and D. Johnson, "Processing of ruthenium aluminide alloys" in *Fundamentals of Structural Intermetallics*, TMS annual meeting, Seattle 17-21 2002 (poster)
22. **Voramon Supatarawanich**, D. R. Johnson, and C.T Liu, "Effects of Microstructure on oxidation behavior of Mo-Si-B Intermetallics," presentation given by Voramon Supatarawanich at the local ASM Indianapolis chapter Student Night on March 18, 2002.
23. **H. Inui**, S. Moto, T. Yamanaka, D.R. Johnson and M. Yamaguchi, "Alignment of the lamellar orientation of multi-component TiAl alloys by directional solidification(DS) and mechanical properties of DS ingots" The 4th KIM-JIM Symposium: Current status of Titanium Aluminide and its alloy, March 29, 2002, Science University of Tokyo, Tokyo, Japan
24. Srinivasan Raghavan, **Matthew John M. Krane**, and **David Johnson**, "Experimental and numerical investigations of growth morphologies of peritectic reactions," The 2002 NASA Materials Science Conference, June 25-26, 2002, Huntsville, Alabama. (poster)
25. **Y. Omiya**, S. Muto, T. Yamanaka, D.R. Johnson, H. Inui, and M. Yamaguchi, "Alignment of the Lamellar Orientation of Multi-Component TiAl Alloys by Directional Solidification (DS) and Mechanical Properties of DS Ingots," MRS Fall Meeting, Dec. 2-6, 2002, Boston, MA (poster).
26. **Todd Reynolds** and David Johnson, "Processing and Characterizing RuAl Eutectics," MRS Fall Meeting, Dec. 2-6, 2002, Boston, MA (poster).
27. **Todd Reynolds** and David Johnson, "Processing and Characterizing RuAl Eutectics," presentation given by Todd Reynolds at the local ASM Indianapolis chapter Student Night on March 10, 2003.
28. **Voramon Supatarawanich**, David R. Johnson Chain T. Liu, "Effects of Microstructure on the Oxidation Behavior of Mo-Rich Mo-Si-B Intermetallics," 2003 TMS ANNUAL MEETING, March 2-6, San Diego, California.
29. **S. Raghavan**, D. R. Johnson, and M. J. M. Krane, "Modeling alloy solidification using a cellular automaton," poster at Modeling of Casting, Welding and Advanced Solidification Processes - X, Destin, FL (5/03).
30. **H. Inui**, Y. Omiya, D.R. Johnson, "Directional solidification of TiAl alloys with Nb concentrations for aligning lamellar microstructures, "Proceedings of the International Symposium on Niobium for High Temperature Applications," TMS conference, December 1-3, 2003, Araxa Brazil.

31. **Voramon Supatarawanich**, David R. Johnson , M. A. Dayananda, "Oxidation behavior of Multiphase Mo-Si-B alloys," 2004 TMS Annual Meeting, March 15-19, Charlotte, NC.
32. **Todd Reynolds**, David R. Johnson, "RuAl Eutectics," 2004 TMS Annual Meeting, March 15-19, Charlotte, NC.
33. **Zeynep Kasapoglu**, David R. Johnson, Mysore, A. Dayananda, "Fracture toughness and hardness of multiphase Mo-Si-B alloys," 2004 TMS Annual Meeting, March 15-19, Charlotte, NC.
34. **Srinivasan Raghavan**, Matthew John M. Krane, David R. Johnson, "A cellular automaton for growth of solutal dendrites: factors influencing artificial anisotropy in growth kinetics." 2004 TMS Annual Meeting, march 15-19, Charlotte, NC.
35. **Todd Reynold**, David Johnson, "Solidification Processing and Fracture Behavior of RuAl-Based Alloys" MRS Fall Meeting, 2004, Boston, MA.
36. **Voramon S. Dheeradhada**, David R. Johnson, and Mysore A. Dayananda, "Diffusional analysis of a multiphase oxide scale formed on a Mo-Mo₃Si-Mo₅Sib₂ alloys." 2006 TMS Annual meeting, March 14th, San Antonio, TX.
37. **David Johnson**, Manuel Acosta, Todd Reynolds, Eric Kvam, "Microstructure and Mechanical Properties of Ru-Cr-Al alloys" Japan Institute of Metals (JIM), Annual Meeting, Heat-resistance Materials symposium, Tokyo Japan, March 27, 2008.
38. **Y. Hashimoto**, N.L. Okamoto, M. Acosta, D.R. Johnson, and H. Inui, "Processing, Microstructure, and Thermal Expansion Measurements of High Temperature Ru-Al-Cr B₂ Alloys" MRS Fall Meeting, 2008, Symposium U: Advanced Intermetallic-Based Alloys for Extreme Environment and Energy Application, Boston, MA. (poster)
39. **Sailei Zhang**, David R. Johnson, Matthew J.M. Krane, "Effects of Geometric Constraint on Phase Selection and Segregation in Cast TiAl," Symposium N: Intermetallic-Based Alloys for Structural and Functional Applications, MRS 2010 Fall Meeting, Boston, MA. (poster).
40. **Xiao Ma**, Salin Kuplin, David Johnson, and Kevin Trumble, "In situ synthesis of AlN/Mg Matrix Composites," 2011, TMS 2011 Annual Meeting, San Diego, CA, February 27– March 3, Symposium: Recent Development in the Processing, Characterization, Properties, and Performance of Metal Matrix Composites.
41. **Xiao Ma**, David Johnson, and Kevin Trumble, "Microstructural control during in situ synthesis of AlN+Mg₂Si/Mg matrix composites," 2011, Summer School on Materials and Structures for Hypersonic Flight, UCSB, Santa Barbara, CA, August 23, Poster Presentation.

42. **Xiao Ma**, David Johnson, and Kevin Trumble, "Microstructural control during in situ synthesis of AlN+Mg₂Si/Mg matrix composites," 2011, MS&T 2011 Annual Meeting, Columbus, OH, October 16–20, Symposium: Phase stability, Diffusion, Kinetics, and their Applications (PSDK-VI).
43. Xiao Ma, **David Johnson**, and Kevin Trumble, "Microstructural studies of AlN+Mg₂Si/Mg matrix composites," 2012, TMS 2012 Annual Meeting, Disneyland, FL, March 12- March 15, Symposium: Science and Engineering of Light Metal Matrix Nanocomposites and Composites. Oral Presentation.
44. **Pikee Priya**, Matthew John M. Krane, David R. Johnson "A Numerical and Experimental Study of Homogenization of Al-Si-Mg Alloys," 2014 TMS Annual Meeting & Exhibition, February 16-20, 2014: San Diego, CA. Oral Presentation
45. **Yiwei Sun**, David R Johnson, Kevin Trumble, Pikee Priya, Matthew John M. Krane, "Effect of Mg₂Si Phase on Extrusion of AA6005 Aluminum Alloy," 2014 TMS Annual Meeting & Exhibition, February 16-20, 2014: San Diego, CA. Oral Presentation
46. **Aisling Coughlan**, David Johnson, Heidi A. Diefes-Dux, K. Anna Douglas², Kendra Erk, Tanya A. Faltens, and Alejandro Strachan "Enhanced Learning of Mechanical Behavior of Materials via Combined Experiments and nanoHUB Simulations: Learning Modules for Sophomore MSE Students MRS Fall Meeting, 2014, Symposium AAA: Undergraduate Research in Materials Science-Impacts and Benefits.
47. **H. A. Diefes-Dux**, A. Coughlan, D.R. Johnson, K. A. Dougla, T.Faltens, "Students' Struggles to Explain the Atomic Behavior of Metals in a Tensile Test Lab Supported by a Molecular Dynamics Simulation," paper presented at 2015 ASEE Annual Conference and Exposition, Seattle, Washington. June 2015. 10.18260/p.24774
48. **M. Heiden**, S. Huang, E. Nauman, D. Johnson, L. Stanciu, "Development of Hierarchical Porosity in Resorbable, FeMn+HA Biocomposites Using Leaching and Dealloying Techniques," MS&T2015, Columbus, OH. October 4-8, 2015
47. **Lia Stanciu**, Michael Heiden, David R Johnson, "Bioresorbable iron-manganese for orthopedic applications – the effect of microstructure and surface morphology on degradation behavior," 2015 TMS Annual Meeting & Exhibition: Advanced Materials in Dental and Orthopedic Applications, March 16th, Oral Presentation
48. **Pikee Priya**, Matthew Krane, David Johnson, Kevin Trumble, "Numerical Study of Phase Transformations during Homogenization of Al-Si-Mg-Fe-Mn alloys," MS&T 2015. Columbus, OH. October 4-8, 2015.

49. **Yiwei Sun**, Kevin Trumble, David Johnson, "Effect of Zirconium on Recrystallization in a Directionally Solidified AA7050 Aluminum Alloy," MS&T2015. Columbus, OH. October 4-8, 2015.
50. **Kyungjean Min**, David R Johnson, Kevin P Trumble, Michael J Manfra , "Trace Analysis of Ultra-High Purity Ga Used in GaAs/AlGaAs heterostructures by ICP-MS," MS&T 2015. Columbus, OH. October 4-8, 2015.
51. **K. Luitjohan**, V. Ortalan, and D. Johnson , Poster: "Boron Segregation and its Effects in Boron Containing Steels. Materials Science and Technology Conference (MS&T). Columbus, OH. October 4-8, 2015.
52. **Aisling Coughlan**, Heidi A. Diefes-Dux, Kerrie A. Douglas, Tanya A. Faltens and David Johnson, Poster: "The Continuing Effort to Enhanced Learning of Mechanical Behavior of Materials via Combined Experiments and nanoHUB Simulations: Learning Modules for Sophomore MSE Students," 2015 MRS Fall Meeting, Boston, Massachusetts, November 29-December 4, 2015 (Best poster award nomination).
53. **Daniel R Klenosky**, David R Johnson, Kevin P Trumble "Application of Secondary Shear Effects in the Extrusion-Machining Process to Explore Recrystallization Mechanics during Conventional Extrusion of 7050 Aluminum," The Minerals, Metals, and Materials Society (TMS) Conference. Nashville, TN. February 14-18, 2016.
54. **Daniel R Klenosky** , Extrusion-Machining as an Analog to Investigate the Deformation Zone Mechanics during the Aluminum Extrusion Process, The 11th International Aluminum Extrusion Technology Seminar & Exposition — ET '16, May 2-6 (2016).
55. **Kara Luitjohan**, Matthew John M. Krane, Volkan Ortalan, David Johnson, "Characterization of Boron Segregation During Continuous Casting," AISTech 2016, Pittsburgh, May 16-19 (2016).
56. **Aisling Coughlan**, David Johnson, Heidi A Diefes-Dux, K Anna Douglas, Tanya A Faltens "Integrating a Research Grade Simulation Tool in a Second-Year Material Science Laboratory Course," 2016 ASEE Annual Conference and Exposition, New Orleans, June 26 - 29 (2016).
57. **Kyungjean Min**, David R Johnson, Kevin P Trumble, "Purification of Ga by distillation during MBE growth" MS&T16, October 23-27 (2016).
58. **Yiwei Sun**, Kevin Trumble, David Johnson, A study on peripheral recrystallization of hot extruded AA6XXX and AA7XXX aluminum alloys," MS&T16, October 23-27 (2016).

59. **Kara Luitjohan**, Matthew John M. Krane, Volkan Ortalan, David Johnson, "Boron Segregation and Its Effects in Boron Containing Steels," , MS&T16, October 23-27 (2016).
60. **Kara Luitjohan**, Matthew John M. Krane, Volkan Ortalan, David Johnson, "Characterization of the Metatectic Reaction in the Iron-Boron System" symposium Phase Stability, Diffusion Kinetics, and Their Applications (PSDK-XII). Accepted. MS&T 2017.
61. **Kara Luitjohan**, Matthew John M. Krane, Volkan Ortalan, David Johnson, "Investigation of Boron Segregation in Commercial Steel Alloys," AIST 2017 (May 2017).

Invited

D.R. Johnson, H. Inui, M. Yamaguchi and B.F. Oliver, "Directional Solidification of NiAl and TiAl Based Intermetallic Alloys," in the Annual Meeting of the Iron and Steel Institute of Japan, *Advance Materials Symposium*, March 1997.

D.R. Johnson, H. Inui and M. Yamaguchi, "Crystal Growth of TiAl Alloys," Kyoto International Workshop on Intermetallics, Kyoto Japan, May 1998.

D.R. Johnson, "Microstructural control and creep deformation of directionally solidified TiAl alloys," Oak Ridge National Laboratory, Oak Ridge, TN, Sept. 10, 1999.

D.R. Johnson, " Microstructural Control of Gamma Titanium Aluminide, Thermo-Mechanical Treatments of Materials Conference, hosted by The Indiana Department of Commerce, Energy Policy Division, in conjunction with Oak Ridge National Laboratory and Cummins Engine Company, April 18, 2000.

D.R. Johnson, H. N. Lee, S. Muto, T. Yamanaka, H. Inui, and M. Yamaguchi, "Microstructure and Creep Behavior of Directionally Solidified TiAl-base Alloys," in *International symposium on deformation and microstructure in intermetallics*, TMS annual meeting, New Orleans, Feb. 2001.

V. Supatarawanich, **D.R. Johnson**, M.A. Dayananda, and C.T. Liu, THERMEC' 2003, International Conference on Processing & Manufacturing of Advanced Materials (Session E9; July 11; 9:30AM), Universidad Carlos III de Madrid, Leganés, Madrid, Spain in July 11, 2003.

T.D Reynolds, and **D.R. Johnson**, " Solidification Processing and Mechanical properties of RuAl-Based Alloys," 2006 ASM (Eastern New York Chapter)/TMS(Hudson-Mohawk Chapter) Spring Symposium, " "Multi-phase and Composite Materials," May 22nd&23rd at GE Global Research, Niskayuna, NY.

T.D. Reynolds, M. Acosta, and **D.R. Johnson**, " Processing and mechanical properties of RuAl-based alloys," THERMEC'2006 International Conference on Processing and Manufacturing of Advanced Materials, July 3-9, 2006, Vancouver.

S. Zhang, N. Wenning, M.J.M Krane, **D.R. Johnson**, "Solidification of TiAl Alloys in Ceramic Preforms" THERMEC '2009 International Conference on Processing and Manufacture of Advanced Materials, August 25-29, 2009, Berlin Germany.

M. Acosta, T.D. Reynolds, E.P. Kvam and **D.R. Johnson**, "Processing and characterization of high temperature intermetallic alloys," A JNCASR-Purdue Workshop on "Basic of nanomaterials and applications in energy conversion, transport, and storage," August 20-21, 2010, Jawaharlal Nehru Centre of Advanced Scientific Research, Bangalore, India.

S. Zhang, J. Yanke, D. Johnson, and M. J. M. Krane, "Influence of feeding flow and shrinkage pipe formation on macrosegregation of investment cast -TiAl alloys," accepted for presentation in symposium on "CFD Modeling and Simulation in Materials Processing," 2011 TMS Annual Meeting, Orlando, FL (3/12).

S. Zhang, M. J. M. Krane and **D. Johnson**, "Solidification of high temperature intermetallics and effects of geometric constraint on microstructural development" THERMEC'2013 International Conference on Processing and Manufacturing of Advanced Materials, Las Vegas, 12/4/2013.

D. Johnson, "Investigation of the metatectic reaction in the Fe-B system," IIT Kanpur, 11/28/2019

TECHNICAL REPORTS:

David R. Johnson, "Processing and Mechanical Properties of NiAl-Based In-Situ Composites," NASA Contractor Report 195333, NASA Lewis Research Center, Cleveland, OH (1994). Same as Ph.D thesis.

PATENTS

Patent Name: Single crystals of alloys of Ti-Al-Si system and their production process

Inventors: Masaharu Yamaguchi, Haruyuki Inui and David. R. Johnson

Date of submission: June 30, 1998

Submission Number: 10-183979 (Japan)

Awarded spring 2001

Patent Name: Alloys in Ti-Al system and their production process

Inventors: Masaharu Yamaguchi, Haruyuki Inui and David. R. Johnson

Date of submission: 30 June 1998

Submission Number: 10-184384 (Japan)

Awarded spring 2001

ACTIVITIES AS REFEREE

Paper reviews for Acta Mater., Met. Trans., Intermetallics, Scripta Mater., Mat. Sci. & Eng. A, American Journal of Physics, J. Alloy and Compounds. J. Crystal Growth, MRS Advances, Proposal reviews for NSF, AFSOR, CA Energy Commission, Austrian Science Fund (FWF), and the U.S. Civilian Research and Development Foundation (CRDF).