Hamish L. Fraser

Ohio Regents Eminent Scholar
Professor of Materials Science & Engineering

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Education:

Degrees	Institution	Date	Field
B.Sc.(1st Class Hons)	University of Birmingham, U.K.	1970	Physical Metallurgy
Ph.D.	University of Birmingham, U.K.	1972	Physical Metallurgy

Positions Held:

Research Associate	University of Birmingham (UK)	1972(3 months)
Assistant Professor	University of Illinois (UIUC)	1973-78
Assistant Director	Center for Electron Microscopy (UIUC)	1973-74
Associate Professor	University of Illinois	1978-1979
		1980-84
Senior Research Scientist	United Technologies Research Center	1979-80
Adjunct Associate Professor	University of Illinois	1979-80
Visiting Scientist	Max-Planck Institut für Metallforschung, Institut für Werkstoffwissenschaften	1988
Professor	University of Illinois	1984-89
Adjunct Professor	University of Illinois	1989-90
Visiting Professor	University of Liverpool (UK)	1986-90
Senior Visitor	University of Cambridge (UK)	1990-92

Present Positions:

Ohio Regents Eminent Scholar & Professor	The Ohio State University	1989-
Honorary Professor	Nelson Mandela University	2014-
Honorary Professor	University of Birmingham (UK)	1998-2020
		2022-2025
Adjunct Professor	University of North Texas	2010-
Adjunct Professor (Research)	Monash University	2014-2019
		2022-2027
Director	Center for the Accelerated Maturation of Materials (CAMM)	1998-

Students Graduated

To date:

51 Ph.D. Degrees 36 M.S. Degrees

On-going Ph.D. Students: 3

Other Scholarly Activities:

North Atlantic Treaty Organization (NATO) (Office National d'Études et de Recherche Aérospatiale, Paris). This involved two lectures per day for one week, and subsequent trips (about once per year).

Government of Western Australia - (Technology Development Authority)

Employed by the Government of Western Australia in the area of *technology development*., his specific duties were to develop a plan for technology development in Western Australia, including details of how *materials engineering* would be enhanced. These plans became cabinet policy. Responsibilities included preparation of presentations made by the Deputy Premier.

Bond University, Surfers Paradise, Australia

Consulting at a one week retreat to establish the College of Science and Technology.

Science and Engineering Research Council (UK); Strategy Working Group/Materials Commission

Served on Strategy Working Group, reporting to Materials Commission of the Science and Engineering Research Council. This group was charged with the responsibility of developing a strategy for materials research in the UK.

University of Birmingham (UK): Co-PI (with Loretto and Wilshire) on the proposal for the Interdisciplinary Research Centre (IRC) in High Performance Materials; this successful proposal resulted in the establishment of the IRC at Birmingham University

External Advisory Committee, Dept. of Materials Science and Metallurgy, University of Cambridge.

USAF Scientific Advisory Board, Materials Panel. New World Vistas: to develop strategies for the Air Force of the 21st Century. 1995

USAF Scientific Advisory Board, Materials Panel. To review R&D programs in Structures and Materials at Wright Laboratories, WPAFB 1996

Defense Research and Engineering, Pentagon (Tri-Service), Technology Area Review and Assessment, Member of the Materials and Processes Panel, 1998, 1999

National Materials Advisory Board, National Academies, Board Member, 2000-2004.

USAF Scientific Advisory Board, Board Member, 2002-2006

Computational Materials Science Network (CMSN): Scientific Oversight Committee Member 2003-2005

Los Alamos National Laboratory, Matls. Science & Techn. Division Review Comm., Member 2004-07

TMS, Materials Processing & Manufacturing Division: Vice-Chairperson 2004-2005

Advisory Board for the "Advanced Facility for Microscopy and Microanalysis, AFMM", IISc., Bangalore. Member 2013-18

Centre for Heterogeneous Mechanics in Hexagonal Alloys across Length and Time Scales, Imperial College, London: Steering Board Member 2013-18

Materials Science Advisory Board, Thermo-Fisher (FEI) Company, Member, 2016-2020, Chairman 2023-2026

Peer Review: Serves as a reviewer for numerous journals and agencies, including the NSF-DMR Equipment and Facilities Panel.

Awards and Honors

Fellow of ASM, 1993
Fellow of the Institute of Materials, Minerals and Mining (IOM^3), 2001
Fellow of TMS, 2005
Fellow of Microscopy Society of America, 2013
Fellow of the Microanalysis Society (Inaugural Class), 2019
Microanalysis Society, President's Science Award, 2014
Lumley Research Award, College of Engineering, OSU 1995
Fontana Teaching Award, Department of Materials Science & Engineering, OSU 1995
Lee-Hsun Award Lecture, Institute for Metals Research, Shenyang, China, 2011
John Matthews Memorial Lecture, Microscopy Society of Southern Africa, Pretoria, 2011
N.N. Dasgupta Memorial Lecture, Electron Microscopy Society of India, Kolkata, 2013
Theodore von Kármán Fellowship, RWTH Aachen University, 2016
AFOSR Horizons Lecture, 2017
Brahm Prakash Visiting Chair, Indian Institute of Science (IISc), Bangalore India, 2017-18
ASM Henry Marion Howe Medal 2019
TMS-AIME Champion H. Mathewson Award 2020

ASM Edward DeMille Campbell Memorial Lecture 2022

Inaugural Srikumar Banerjee Memorial Lecture 2022

Monash Distinguished Engineering Professor Award 2022

IOM Robert Franklin Mehl Award 2024

Other

Member, Ohio Science and Technology Roundtable 1990-94

Member, President's and Provost's Advisory Committee, OSU 1989-

Member, Executive Committee, Center for Materials Research, OSU 1989-99

Head Coach, University of Illinois Rugby Club 1980-87

PUBLICATIONS & INVITED PAPERS

Research has been undertaken in three main areas, namely analytical electron microscopy; materials processing of advanced materials, and integrated computational materials science and engineering. Much of his current interest involves the physical metallurgy of titanium alloys. The following publications and invited papers are a result of his work.

a) ***PUBLICATIONS***

1. Direct Observations of the Annealing of Stacking Fault Tetrahedra in Gold and Voids in NiAl, Jerkon, Annr., 155, 1971, p.410. With M.H. Loretto and R.E. Smallman.
2. Voids in the Intermetallic Compound, NiAl. Conf. on "Voids Formed by Irradiation of Reactor Materials, Eds. Pugh, Loretto and Norris, BNES, 1971, p. 177. With M.H. Loretto, R.E. Smallman and R.J. Wasielewski.
3. Direct Observations of the Annealing of Stacking-Fault Tetrahedra in Gold Using High Voltage Electron Microscopy, Phil. Mag. 28, 1973, p.1043. With M.H. Loretto and R.E. Smallman.
4. Oxidation-Induced Defects in NiAl, Phil. Mag. 28, 1973, p.639. With M.H. Loretto and R.E. Smallman.
5. The Plastic Deformation of NiAl Single Crystals Between 300K and 1050K; Part I: Experimental Evidence on the Role of Kinking and Uniform Deformation in Crystals Compressed Along <001>, Phil Mag. 28, 1973, p.651. With M.H. Loretto and R.E. Smallman.
6. The Plastic Deformation of NiAl Single Crystals Between 300K and 1050K; Part II: The Mechanism of Kinking and Uniform Deformation, Phil. Mag. 28, 1973, p.667. With M.H. Loretto and R.E. Smallman.
7. The Origin of Dislocation with b=<110> in Single Crystals of β-NiAl Compressed Along <001> at Elevated Temperatures, Scripta Metallurgica, 8, 1974, p. 1049. With N.J. Zaluzec.
8. A Study of Kinking in Zinc and NiAl Single Crystals, "High Voltage Electron Microscopy", Academic Press, London, Eds. P.R. Swann, C.J. Humphreys, M.J. Goringe and R.E. Smallman, 1974, 273. With E.G. Tapetado, M.H. Loretto and R.E. Smallman.
9. A Note on the Increase in Usable Foil Thickness in Scanning Transmission Electron Microscopy, Phil Mag. 31, 1975, p.255. With I.P. Jones.
10. On the Feasibility of Quantitative Microchemical Analysis of Thin Metal Foils, 33rd Ann. Proc. Electron Microscopy Soc. Amer., Las Vegas, Nevada, 1975, Ed. C.W. Bailey, p. 106. With N.J.Zaluzec.

11. Annealing of Point Defects in Quenched NiAl, Phil. Mag. 32, 1975, p. 873. With M.H Loretto, R.E. Smallman and R.J. Wasielewski.
12. Carbides in Alloys of Vanadium, Proc. 4th Int. Conf. On the Strength of Metals and Alloys, Nancy, France, 2, 727, 1976. With C. Fleur and C.A. Wert.
13. Computer Simulation of Defect Images Using Scanning Transmission Electron Microscopy, Invited paper for ITTRI/SEM, 1976, Toronto, pp.329-36, Ed. O. Johari, 1976. With I.P. Jones and M.H. Loretto.
14. A modified Specimen Stage for X-ray Analysis in TEM, J. Phys. E. 9, 1976, pp. 1051-52. With N.J. Zaluzec.
15. Microchemical Analysis of Thin Metal Foils, Proc. 34th Annual Meeting of EMSA, Miami Beach, ed.G.W.Bailey, Claitor's Publ. Baton Rouge, LA, 1976, p. 420. With N.J. Zaluzec.
16. Imaging and Elemental Analysis of Defect Structures in STEM, Electron Microscopy, 1, (Proc. 6th Europ. Cong. on Electron Microscopy, Jerusalem, 1976, Ed. D. Brandon, p. 180.
17. X-ray Absorption Effects in Thin Metals Foils, Proc. Workshop on Analytical Electron Microscopy, Cornell Univ., Ithaca, NY, MSC Report #2763, 1976, pp. 118-120. With N.J. Zaluzec.
18. Examples of Microdiffraction Using the Stationary Diffraction Pattern Technique in STEM, Proc. of AEM Workshop, Cornell Univ., MSC Report #2763, 1976, pp. 217-221. With N.J. Zaluzec.
19. Carbides in Alloys of V, 4th. Int. Conf. on Strength of Metals and Alloys, 1976, 2, 727. With C.F.Fluhr and C.A.Wert.
20. Limiting Factors in Specimen Thickness in Conventional and Scanning Electron Microscopy, Phil. Mag., 35, 1977, pp.159-76. With M.H. Loretto and I.P. Jones.
21. Comments on "Energy Dispersive X-ray Measurements of Thin Metal Foils," Scripta Met., 11, 1977, pp. 257-59. With N.J. Zaluzec.
22. Threshold Voltage for Damage in Si under Electron Bombardment, Scripta Met., 11, 1977, pp. 47-49.
23. Solid-phase Crystallization of Si Films in Contact with Al Layers, JAP, 48, 1977, p.2897. With I.D. Ward, C.A. Evans, R. Blattner, and J.M. Harris.
24. Recent Advances in Analytical Electron Microscopy, Proc. 14th Ann. Electron Microscopy Colloquium, May 1977, Ames Lab., Iowa State Univ., Amer. Ed. F. Labs, p. 135.
25. Contamination and Absorption Effects in X-ray Microchemical Analysis of Thin Metal Films, Proc. 8th Int. Conference on X-ray Optics and Microanalysis, Ed. R. Ogilvie and D. Wittry, Boston, MA, 1977, p. 112. With N.J. Zaluzec.
26. Microstructural Observations of Metal Powders Using Analytical Electron Microscopy, Proc. Int. Conf. on Rapid Solidification Processing, Principles and Technologies, Eds. R.Mehrabian, B.H. Kear and M. Cohen, Reston, VA, 1977, p. 270. With R.D. Field.
27. Microstructural Observations of Metal Powders Using Analytical Electron Microscopy, Met. Trans. A, 9A, 1978, p.131. With R.D. Field.
28. Elemental Analysis of Second Phase Carbides Using Electron Energy Loss Spectroscopy, 11th. Ann Scanning Electron Microscopy Symp., 1, 1978, p.627.
29. Elemental Analysis in a V-Ti-C Alloy Using Electron Energy Loss Spectroscopy, Proc. 9th Int. Cong. on Electron Microscopy, Toronto, 1978, ed. J.M.Sturgess, p.552.
30. An Analytical Electron Microscopy Study of the High Temperature Carbide Formed in a V-5Ti-C Alloy, Met. Trans., 11A, 693, 1980. With S.M. Bruemmer, C.P. Fluhr, D.V.Beggs, and C.A. Wert.
31. Analytical Transmission Electron Microscopy on the 10nm Scale, Micron, 11, 1980, p.267
32. Analytical Transmission Electron Microscopy in Materials Science, Proc. 5th International Symposium on "High Purity Materials in Science and Technology," Dresden, 1980, II, p. 238.
33. Microstructural Analysis of Rapidly Solidified Superalloy Powders, Proc. 2nd Int. Conf. on Rapid Solidification Processing, Principles and Technologies, Reston, VA, March 1980. With R.D. Field and E.H. Aigeltinger.
34. Microstructure of Rapidly Solidified Powders, Superalloys 1980, Proc. Int. Conf. on Superalloys, Seven Springs, PA, 1980, ASM, ed. J.K.Tien, et al., p. 439. With R.D. Field and A.R. Cox.
35. STEM Analysis of Grain-Boundaries in Cemented Carbides, Journal of the American Ceramic Society, 63 (3-4), pp. 194-196, 1980. With N.K. Sharma, I.D. Ward, and W.S. Williams.
36. Surface Melting of an Alloy under Steady State Conditions, Proc. AIME Conf. on Lasers in Metallurgy (Chicago, IL, 1981) publ. TMS-AIME, K. Mukherjee and J. Mazumder, eds., 131, 1981. With J.A. Sekhar and R. Mehrabian.

37. The Effect of Specimen Thickness on X-ray Profiles in STEM, Phil. Mag., 43, 1587, 1981. With M.E.Twigg and M.H. Loretto.
38. Quantitative Energy-Disperse X-ray Analysis of Thin Foils with Pure Elemental Standards, Analytical Electron Microscopy - 1981 (R.H. Geiss, eds., San Francisco Press), 61, 1981. With J.M.Brown and M.H. Loretto.
39. Analytical Transmission Electron Microscopy in Minerals Processing, Process Minerology in Extractive Metallurgy, Mineral exploitation, and Energy Resources, publ. TMS-AIME, 267, 1981. With K.C.Hsieh and M.E. Twigg.
40. On the Validity of Monte Carlo Calculations for the Interpretation of X-ray Profiles in STEM, Analytical Electron Microscopy - 1981 (R.H. Geiss, eds., San Francisco Press), 99, 1981. With M.E. Twigg.
41. The Effect of Surface Layers on Thin Foil Standards on the Accuracy of Quantitative EDS Claitor's Publ. Div., Baton Rouge, LA, p.484, 1982. With J.M. Brown.
42. Spatial Resolution of Stem and EDS in an Al-Ge Alloy, ibid., p. 490, 1982. With M.E. Twigg and J.P. McCarthy.
43. Structure Determination of Ni_3Mo Using Convergent Beam Electron Diffraction, SEM-82, p. 686, 1982. With M.J. Kaufman.
44. A Comparison of Two Models for the Characteristic Fluorescence Correction in Thin Foil Analysis, Microbeam Analysis - 1982, ed., K.F.J. Heinrich, San Francisco Press, San Francisco, CA, p.37, 1982. With M.E. Twigg.
45. A Determination of Symmetry Changes in Ordered Alloys by Convergent Beam Electron Diffraction, ibid., p.54, 1982.
46. Specimen Preparation Limitations in Quantitative Thin Foil Microanalysis, ibid., p. 93. With J.P. McCarthy.
47. An Example of the Use of Combined Techniques of Analytical TEM for Phase Identification, ibid., p. 393, 1982. With D.G. Konitzer.
48. Microstructural Characterization of Rapidly Solidified Materials, Proc. 3rd Conference on Rapid Solidification Processing; Principles and Technologies, NBS, Gaithersburg, MD, Dec. 1982, p.56. With J.B.VanderSande.
49. A Technique for the Observation of Rapid Solidification and Annealing of Powders in a Transmission Electron Microscopy, Scripta Met., 17, 141, 1983. With M.J. Kaufman
50. Analysis of In-Situ Rapid Solidification of Submicron Al-Ge Eutectic Powders Using Transmission Electron Microscopy, Met.Trans. A, 14A, 623, 1983. With M.J. Kaufman.
51. Metastable Phase Formation in Rapidly Solidified Submicron Powders of Al-30.3at.% Ge Eutectic Alloy, Materials Science and Engineering, 57, 117, 1983. With M.J. Kaufman.
52. Formation and Thermal Stability of an Oxide Dispersion in a Rapidly Solidified Ti-Er Alloy, Scripta Met., 17, 963, 1983. With D.G. Konitzer and B.C. Muddle.
53. Microstructure of Rapidly Solidified Aluminum Alloys, Proceedings: Materials Research Society, Annual Meeting, Symposium F, Boston, MA, Nov. 14-17, 1983, p.317. With J.W. Zindel, J.T. Stanley and R.D. Field.
54. Dynamic Compaction of Al Alloys, Proceedings: Materials Research Society,Annual Meeting, Symposium F, Boston, MA, Nov. 14-17, 1983, p.163. With J.W. Sears and B.C. Muddle.
55. A Study of a Cellular Phase Transformation in the Ternary Ni-Al-Mo Alloy System, Met. Trans., 14A, 1561, 1983. With M.J. Kaufman, M.H. Loretto and J.A. Eades.
56. A Comparison of the Microstructures of As-Cast and Laser Surface Melted Ti-8Al-4Y, Met. Trans., 14A, 1979, 1983. With D.G. Konitzer and B.C. Muddle.
57. Applications of Convergent Beam Electron Diffraction to Ni-base Superalloys, J.Microsc. Spectrosc. Elec., 8, 1983, p.431
58. A Comparison of Two Models for the Characteristic X-ray Fluorescence Correction in Thin Foil Analysis, J. Microsc., 1984, 133, 61. With M.E. Twigg.
59. A Microanalytical Study of Secondary Precipitation in RSR 143 Using Atom Probe Field Ion Microscopy and Analytical Transmission Electron Microscopy, "Superalloys 1984", ed. M. Gell, C.S. Kortovich, R.H. Bricknell, W.B. Kent and J.F. Radavich, Met. Soc. AIME, 1984, p.633. With M.E. Twigg, A.I. Melmed, R. Klein and M.J. Kaufman.

60. Rapidly Solidified Prealloyed Powders by Laser Spin Atomization, Met. Trans., 15B, 1984, 149. With K.W. Walters, E.C. Heiser and D .G. Konitzer.
61. The Annealing of Vacancy Defects in β-NiAl I: Vacancy Loop Growth in As-Grown Single Crystals, Phil. Mag., 50, 89, 1984. With A. Parthasarathi.
62. The Annealing of Vacancy Defects in β-NiAl II: The Role of Surface Oxidation on Vacancy Loop Growth in Slowly Cooled Crystals, Phil. Mag., 50, 101, 1984. With A. Parthasarathi.
63. Refined Dispersions of Rare Earth Oxides in Ti-Al Alloys Produced by Rapid Solidification, Proceedings of the Fifth International Conf. on Titanium, Munich, 1984, 1, p.405. With D.G. Konitzer, B.C. Muddle, and R.Kirchheim.
64. The Production of Ultrafine Dispersions of Rare Earth Oxides in Ti Alloys Using Rapid Solidification, Proceedings of the Fifth International Conference on Rapidly Quenched Metals, 1984, 1, 953. With D.G. Konitzer, B.C. Muddle and R. Kirchheim.
65. Oxide Dispersions in Rapidly Solidified Ti Alloys, in "Rapidly Solidified Metastable Materials", ed. B.H. Kear and W.C. Giessen, Mat. Res. Soc. Symp. Proc., 28, 1984, Elsevier Sci. Publ. Co., p. 381. With D.G. Konitzer and R. Kirchheim.
66. Rapid Solidification and Dynamic Compaction of Ni-base Superalloy Powders, "Superalloys 1984", ed. M. Gell, C.S. Kortovich, R.H. Bricknell, W.B. Kent and J.F. Radavich, Met. Soc. AIME, 1984, p.487. With R.D. Field, S.J. Hales and W.O. Powers.
67. Microstructural Comparison of Rapidly Solidified Al-Base Powders Produced by Laser Surface Melting, Melt-Spinning and Atomization, Proceedings: International Powder Metallurgy Conference, Toronto, Ontario, June 17-22, 1984, p.455. With J.W. Zindel, J.T. Stanley and R.D. Field.
68. Microstructure of Some Rapidly Solidified Al-Base Alloys, Proceedings: Fifth International Conf. on Rapidly Quenched Metals, Wurzburg, W. Germany, Sept. 3-7 1984, p.941. With M.J. Kaufman, J.T. Stanley, D.C. Van Aken and R.D. Field.
69. Microstructural Analysis of Rapid Solidification and Undercooling in the Al-Ge System, Mat. Res. Soc. Symp. Proc., 28, 1984, Elsevier Sci. Publ. Co., p. 335. With M.J. Kaufman.
70. Precipitates in a Rapidly Solidified Al-Mn Alloy Possessing Icosahedral Symmetry, Mat. Sci. & Eng., 68, L17, 1984-85. With R.D. Field.
71. The Importance of Undercooling in the Formation of Non-Equilibrium Structures in the Al-Ge Alloy System, Int. Journal of Rapid Solidification, 1, 27, 1984-85. With M.J. Kaufman.
72. Driving Force for Discontinuous Coarsening in a Ni-Al-Mo Base Superalloy, Met. Trans A, 16A, 11. With A.W.Funkenbusch, T.A.Stephenson, and G. McCarthy.
73. Characterization of Metastable Crystalline Phases in the Al-Ge Alloy System, Acta Met., 33, 191, 1985. With M.J. Kaufman.
74. The Detection of Local Strains in Strained Layer Superlattices, Inst. Phys. Conf. Ser. No. 76, Section 7, Microsc. Semicond. Mater. Conf., Oxford 1985, p. 307. With D.M. Maher, C.J. Humphreys, C.J.D. Hetherington, R.V. Knoell and J.C. Bean.
75. The Microstructure of Rapidly Solidified Hyper-Eutectic Al-Be Alloys, Acta Met., 33, 963, 1985. With D.C. Van Aken.
76. The Production and Thermal Stability of A Refined Dispersion of Er_2O_3 in Ti_3Al Using Rapid Solidification Processing, Mat. Res. Soc. Symp. Proc., 39, p.437, 1985. With D.G. Konitzer.
77. Convergent Beam Electron Diffraction and Imaging of Strained Layer Superlattices, EMAG '85, Inst. Phys. Conf. Ser. No. 78, Chapter 2, Newcastle Upon Tyne, p. 49. With D.M. Maher, C.J. Humphreys, R.V. Knoell, J.B.Woodhouse and J.C. Bean.
78. Convergent-Beam Diffraction in the Characterization of Crystalline Phases, MRS Publ. "Materials Problem Solving with the Transmission Electron Microscope", 1986, p.143. With J.A Eades and M.J.Kaufman.
79. The Use of Convergent Beam Electron Diffraction to Determine Local Lattice Distortions in Ni-base Superalloys, Phil. Mag., 54 (1), p.79, 1986. With M.J. Kaufman and D.D. Pearson.
80. Dynamic Compaction of Al Alloys, in "Rapidly Solidified Al Alloys", ASTM STP 890, 1986, p.304. With J.W. Sears and D.J. Miller.
81. Rapid Solidification and Subsequent Analysis of Some Hypereutectic Al-base Alloys, in "Rapidly Solidified Al Alloys", ASTM STP 890, 1986, p.186. With J.W. Zindel, J.T. Stanley and R.D. Field.
82. The Nature of Dispersed Phases in Ti-0.7at%Er Prepared by Rapid Solidification Processing, Acta Met., 34(7), p.1269, 1986. With D.G. Konitzer, J.T. Stanley, and M.H. Loretto.

83. An Analytical Electron Microscopy Study of the Recently Reported "Ti_2Al Phase" in γ–TiAl Alloys, Scripta Met., 20, p. 103, 1986. With M.J. Kaufman, D.G. Konitzer, and R.D. Shull.
84. Constitution of an Al-37-5Ge Splat Quenched Foil: Implications on Nucleation Kinetics, Scripta Met., 20, p.125, 1986. With M.J. Kaufman and M. Ellner.
85. Site Occupancy in Solid Solutions of Nb in the Intermetallic Compounds TiAl and Ti_3Al, Scripta Met., 20, p. 265, 1986. With D.G. Konitzer and I.P. Jones.
86. The Intercellular Phase in Rapidly Solidified Alloys Based on the Al-Fe System, Scripta Met., 20, p. 415, 1986. With J.W.Zindel and R.D.Field.
87. Undercooling and Microstructural Evolution in Glass Forming Alloys, Hume-Rothery Memorial Symposium, (1986: New Orleans, LA), Undercooled Alloy Phases, Ed. E.W. Collings and C.C. Koch, TMS-AIME, Warrendale, PA, 1986, p.249. With M.J. Kaufman.
88. Nucleation in the Presence of a Metastable Liquid Miscibility Gap in the Aluminum Beryllium System, Hume-Rothery Memorial Symposium, 1986: New Orleans, LA), Undercooled Alloy Phases, Ed. E.W. Collings and C.C. Koch, TMS-AIME, Warrendale, PA, 1986, p.413. With D.C. Van Aken.
89. Microstructures and Properties of Rapidly Solidified Al-Fe-(Mo/Ce) Alloys, in "Aluminum Alloys: Their Physical and Mechanical Properties", E.A. Starke, Jr. and J.H. Sanders, Jr. Eds., Chameleon Press, Ltd., London, 1986, p. 279. With J.W. Zindel, R.D. Field, P. Kurath.
90. Mechanical Properties of Rapidly Solidified Al-4Be Alloys, in "Aluminum Alloys: Their Physical and Mechanical Properties", E.A. Starke, Jr. and J.H. Sanders, Jr. Eds., Chameleon Press, Ltd., London, 1986, p. 295. With D.C. Van Aken, P. Kurath.
91. The Formation of Microstructures in Rapidly Solidified Hypereutectic Al Alloys Containing Ni or Co, in "Aluminum Alloys: Their Physical and Mechanical Properties", E.A. Starke, Jr. and J.H. Sanders, Jr. Eds., Chameleon Press, Ltd., London, 1986, p.307. With J.T. Stanley, R.D. Field.
92. Rapid Solidification of Al Alloys, in "Aluminum Alloys: Their Physical and Mechanical Properties", E.A. Starke, Jr. and J.H. Sanders, Jr. Eds., Chameleon Press, Ltd., London, 1986, p.1321.
93. Laser Surface Melting of Ti Alloys Containing Er or La, in "Titanium: Rapid Solidification Technology", F.H. Froes and D. Eylon Eds., TMS-AIME, Warrendale, PA, 1986, p. 165. With S.A. Court, J.T. Stanley, D.G. Konitzer, M.H. Loretto.
94. Rapid Solidification Studies in Eutectoid Forming Ti Alloys, in "Titanium: Rapid Solidification Technology", F.H. Froes and D. Eylon Eds., TMS-AIME, Warrendale, PA, 1986, p. 211. With L.S. Chumbley M.A. Ohls.
95. Dislocations in Nb-Containing Ti_3Al, in "Titanium: Rapid Solidification Technology", F.H. Froes and D. Eylon Eds., TMS-AIME, Warrendale, PA, 1986, p. 249. With S.A. Court, S.A. Skewes, M.H. Loretto.
96. Rapidly Solidified Ti Alloy Powders, in "Titanium: Rapid Solidification Technology", F.H. Froes and D. Eylon Eds., TMS-AIME, Warrendale, PA, 1986, p. 77. With J.P.A. Lofvander, S.A. Court, R. Wheeler, J.W. Sears, D.A. Watson.
97. Structure and Magnetism of Quasicrystalline and Crystalline $Al_{1-x}Mn_x$ Alloys, Phys. Rev. B, 1986, 34, 2960. With S.E.Youngquist, P.F.Miceli, D.G.Wiesler and H.Zabel.
98. Detection and Measurement of Local Distortions in a Semiconductor Layered Structure by Convergent-Beam Electron Diffraction, Appl. Phys. Lett., 50, 1987, p. 574. With D.M. Maher, C.J. Humphreys, R.V. Knoell and J.C. Bean.
99. Analytical Electron Microscopy at Intermediate Voltages, Reporter, 1987, vol. 34, Mo. 1, Bulletin 124, p.6-12.
100. Convergent Beam Electron Diffraction at Medium Voltages, Analytical Electron Microscopy - 1987, ed. D.C.Joy, San Francisco Press, p. 173. With V.K.Vasudevan.
101. Heteroepitaxial Strains and Interface Structure of Ge-Si Alloy Layers on Si (100), Inst. Phys. Conf. Ser. No. 87:section 2, 1987, p. 165. With E.P.Kvam, D.J.Eaglesham, C.J.Humphreys, D.M.Maher and J.C.Bean.
102. Metastable Phase Production and Transformation in Al-Ge Alloy Films by Rapid Crystallization and Annealing Treatment, Acta. Met., 35, 1987, p.1181. With M.J. Kaufman, and J.E.Cunningham, Jr..
103. The Thermal Stability of a Refined Dispersion of Erbia Particles in Rapidly Solidified Ti-Er and Ti-Al-Er Alloys, in "Processing of Structural Metals by Rapid Solidification", ed. F.H.Froes and S.J.Savage, ASM, Metals Park, 1987, p. 231. With J.P.A. Lofvander, S.A. Court, R. Kirchheim, D.G. Konitzer.

104. Microstructure and Properties of Rapidly Solidified Magnesium Lithium Alloys, in "Processing of Structural Metals by Rapid Solidification", ed. F.H.Froes and S.J.Savage, ASM, Metals Park, 1987, p. 429. With F.C. Grensing.
105. Microstructure and Properties of Rapidly Solidified Material Consolidated by Dynamic Compaction and Hot Isostatic Pressing, in "Processing of Structural Metals by Rapid Solidification", ed. F.H.Froes and S.J.Savage, ASM, Metals Park, 1987, p. 133. With D.J. Miller and J.W.Sears.
106. The Production of Rapidly Solidified Ti Alloy Powders, in "Processing of Structural Metals by Rapid Solidification", ed. F.H.Froes and S.J.Savage, ASM, Metals Park, 1987, p. 223. With J.W.Sears, J.P.A.Lofvander, R.Wheeler, D.J.Miller and S.A.Court.
107. Thermal Stability of Rare-Earth Oxides in Ti When Annealed Above the α/β Transus, Scripta Met., 21,1987, p.859. With J.P.A. Löfvander, S.A. Court, R.Kirchheim and H.L. Fraser.
108. Dislocations in As-Cast and Deformed Samples of Ti_3Al and Ti-25Al-4Nb, Scripta Met., 21, 1987, p.997. With S.A. Court and M.H. Loretto.
109. Identification of Precipitates in Rapidly Solidified and Heat-Treated Al-8Fe-2Mo-Si Alloys, Scripta Met., 21, 1987, p.1105. With V.K. Vasudevan.
110. Microstructure of Rapidly Solidified Magnesium-Silicon Alloys, Scripta Met., 21, 1987, p.963. With F.C. Grensing.
111. The Effect of Liquid Phase Separation on the Microstructure of Rapidly Solidified Titanium Rare-Earth Alloys, Mat. Sci. and Eng., 1988, 98, 243. With S.A. Court J.W. Sears and M.H.Loretto.
112. Structure and Properties of Rapidly Solidified Mg-Si Alloys, Mat. Sci. and Eng., 1988, 98, 313. With F.C.Grensing.
113. The Microstructures of Rapidly Solidified and Heat-Treated Al-8Fe-2Mo-Si Alloys, Mat. Sci. and Eng., 1988, 98, 131. With V.K. Vasudevan.
114. The Crystallography of the Precipitation of Ti_5Si_3 in Ti-Si Alloys, Acta. Met., 1988, 36(2), 299. With L.S. Chumbley and B.C. Muddle.
115. Theoretical and Experimental Determinations of the Thermal Stability of Rare Earth Oxide Particles in Rapidly Solidified Titanium Alloys, Acta. Met., 1988, 36(6), 1595. With D.G. Konitzer, J.P.A. Lofvander, S.A. Court and R. Kirchheim.
116. The Microstructure of Rapidly Solidified and Heat-Treated Ti Alloys Containing La, Acta. Met., 1988, 36(6), 1585. With S.A. Court, J.T.Stanley, D.G. Konitzer and M.H. Loretto.
117. Monotectic Solidification in RS Al-In Alloys, Int. J. of Rapid Solid.,1988, 3, 199. With D.C. Van Aken.
118. Investigation of the Techniques for Measuring Lattice Mismatch in a Rhenium Containing Nickel-Based Superalloy, Acta. Met., 1988, 36(6), 1309. With D.F. Lahrman, R.D. Field and R.Darolia.
119. The Relevance of Local Lattice Parameter Measurements using CBED, Proc. 46th. Ann. Meeting of EMSA, ed. G.W.Bailey, 1988, p.1006.
120. Electron Microscopy Studies in Rapid Solidification Processing, Inst. Phys. Conf. Ser. No. 93, 1988, 2, 185.
121. Convergent-Beam Imaging (CBIM) - A Transmission Electron Microscopy Technique for Investigating Small Localized Distortions in Crystals, Phil. Mag., 1988, 58,787. With C.J. Humphreys, D.M. Maher, and D.J. Eaglesham.
122. CBED and CBIM from Semiconductors and Superconductors, Ultramicroscopy, 1988, 26, 13. With C.J. Humphreys, D.J. Eaglesham, and D.M. Maher.
123. The Microstructures of Rapidly Solidified Titanium Aluminide-Based Alloys Produced by Centrifugal Atomization, Proceedings of the Sixth World Conference on Titanium, Cannes, France, June 1988, p. 1115. With J.W.Sears, J.P.A.Löfvander, R.Wheeler, M.A.Stucke and S.A.Court.
124. The Plastic Deformation of Ti_3Al Deformed at Room Temperature, 300°C and 650°C, Proceedings of the Sixth World Conference on Titanium, Cannes, France, June 1988, p. 949. With J.P.A.Löfvander, P.Kurath and S.A.Court.
125. Phase Transformations in Ti Alloys, Proceedings of the Sixth World Conference on Titanium, Cannes, France, June 1988, p. 1469. With N.Paton.
126. Deformation in Alpha-2 Titanium Alloys, Proceedings of the Sixth World Conference on Titanium, Cannes, France, June 1988, p. 955. With B.J.Marquardt, G.K.Scarr, J.C.Chesnutt, and C.G.Rhodes.
127. A Microstructural Comparison of Melt Spun and Laser Surface Melted Aluminum-Molybdenum Alloys, accepted for publication in Met Trans. A.. With F.C. Grensing.

128. The Effect of the Alpha-Beta-Phase Transition on the Stability of Rare-Eearth-Oxide Particles in Rapidly Solidified Ti Alloys. International Journal of Rapid Solidification. 4 (1-2): 23-26, 1988. With J.P.A. Lofvander, S.A. Court, G.K. Scarr, R.A. Amato, and G.E. Wasielewski.
129. The Nature of c-Component Dislocations in Samples of Polycrystalline Ti_3Al Deformed at Room Temperature and 300°C, Phil. Mag., 1989, 59, 379. With S.A.Court, J.P.A. Löfvander and M.H.Loretto.
130. Characterization of Metastable Phases in a Rapidly Solidified Nb-22Si Alloy, Acta Met., 1989, 37, 999. With D.J.Miller and J.W.Sears
131. Compositional Modulations in Ge_xSi_{1-x} Heteroepitaxial Layers, J. Vac. Sci Tech. B, 1989, 7, 210. With D.M.Maher, R.V.Knoell, D.J.Eaglesham, C.J.Humphreys and J.C.Bean.
132. Tetragonal and Monoclinic Forms of Ge_xSi_{1-x} Epitaxial Layers, Appl. Phys. Lett., 1989, 54, 222. With D.J. Eaglesham, D.M. Maher, C.J. Humphreys and J.C. Bean
133. Strains and Misfit Dislocations at Interfaces, Proc. NATO Workshop on the Impact of Electron Microscopy on Semiconducting Materials, 1988, in press. With C.J. Humphreys, D.J. Eaglesham, D.M. Maher and I. Salisbury.
134. The Effect of Covalency on the Deformation Mechanisms in Intermetallic Compounds, 1989, Proc. EMSA Ann. Meeting, San Antonio, TX, 316.
135. The Limits of Strain and Lattice Parameter Measurements by CBED, 1989, Proc. EMSA Ann. Meeting, San Antonio, TX, 518.
136. The Mechanisms of Plastic Deformation of Rapidly Solidified Al_3Ti and $Al_{67}Ni_8Ti_{25}$ Intermetallic Compounds, 1989, Mat.Res.Soc.Symp. 133, 705. With V.K.Vasudevan and R. Wheeler.
137. The Influence of Second Phase Ti_3Al on the Deformation Mechanisms in TiAl, Phil. Mag. Letters, 1989, 59, 299. With V.K.Vasudevan, M.A.Stucke and S.A.Court.
138. The Identification of a Ti-Er-O Phase, Scripta metall., 1989, 23, 461. With J.P.A.Löfvander and S.A.Court.
139. The Influence of Purity on the Mechanisms of Plastic Deformation of Ti_3Al, Phil. Mag. Letters, 1989, 59, 289. With J.P.A.Löfvander, S.A.Court and P.Kurath.
140. Effect of Grain Size and Temperature on the Yield Stress of the Intermetallic Compound TiAl, Scripta metall., 1989, 23, 467. With V.K.Vasudevan, S.A.Court and P. Kurath.
141. Effect of Purity on the Deformation Mechanisms in the Intermetallic Compound TiAl, Scripta metall., 1989, 23, 907. With V.K.Vasudevan, S.A.Court and P. Kurath.
142. Oxidation Behavior of Some Mg-Li and Mg-Li-Si Alloys, Proc. Symp. on *Light-weight Alloys for Aerospace Applications*, TMS Ann. Meeting, Las Vegas, NV, 1989. With S. Das.
143. Mobility of c-dislocations in Ti_3Al. Philosophical Magazine Letters, 60(3): 111-116. Sept., 1989. With J.P.A. Lofvander, S.A. Court, and M.H. Loretto.
144. Moiré Fringe Analysis of Small Precipitates in Melt-Spun Ti-Si Alloys, 1990, J. Elec. Microsc. Techn., 14, 46. With L.S.Chumbley.
145. The Influence of Temperature and Alloying Additions on the Mechanisms of Plastic Deformation of Ti_3Al, Phil. Mag.A, 1990, 61, 109. With S.A.Court, J.P.A.Löfvander, and M.H.Loretto.
146. Deformation Mechanisms in the Intermetallic Compound TiAl, Phil. Mag.A, 1990, 61, 141. With S.A.Court and V.K.Vasudevan.
147. On the Influence of Stoichiometry and Purity on the Deformation Mechanisms in the Intermetallic Compound TiAl, 1990, Scripta Met., 24, 1105. With M.Aindow, K.Chaudhuri and S.Das.
148. Factors Influencing the Deformation Mechanisms in the Intermetallic Compounds Al_3Ti and Al_3V, 1990, Phil. Mag. Letts., 62, 143. With R. Wheeler and V.K.Vasudevan.
149. On the Shape of Edge-Dislocation Loops in β-NiAl, 1990, Phil. Mag. Letts., 62, 317. With M. Aindow and A.Parthasarathi.
150. Compatibility of Potential Reinforcing Ceramics with Ni and Fe Aluminides, 1990, Mat.Res.Soc.Symp. 194, 379. With J.A.Moser, M.Aindow, W.A.T.Clark, and S.Draper.
151. Metastable Phase and Defect Microstructures in Melt-Spun Ribbons of Nb_3Al, 1991, Mat.Res.Soc.Symp. 209, 89. With M.Aindow, J. Shyue, and T.A.Gaspar.
152. Extended Stacking Faults in Nb_3Al, 1991, *Inst. Phys. Conf. Ser.* No. 119, EMAG 91, 249. With M. Aindow, T.T. Cheng, R. Beanland, J. Shyue.
153. Concerning the Dissociation of Grown-in Dislocations in Melt Spun Ribbons of the Intermetallic Compound Nb_3Al, 1991, Phil. Mag. Letts, 64, 59. With M.Aindow, J. Shyue, and T.A.Gaspar.

154. A Comparative Study of the Nanocrystalline Material Produced by Sliding Wear and Inert Gas Condensation, 1991, Mat. Res. Soc. Symp. Proc., 206, 593. With S.K.Ganapathi, M.Aindow, and D.A.Rigney.
155. Metastable phases and defect microstructures in melt-spun ribbons of Nb_3Al, *Mat. Res. Soc. Symp. Proc*, 1991, 209, 89. With M. Aindow, J. Shyue, and T.A. Gaspar.
156. Internal Stresses in TiAl Based Lamellar Composites, 1992, Mat. Res. Soc. Symp. Proc., 273, 81. With P.M.Hazzledine, B.K.Kad and D.M.Dimiduk.
157. A Microstructural Analysis of Dissimilar Solid State Welds in Advanced Materials, Edison Welding Institute, Research Brief, November, 1992 with M.C. Juhas, W.A. Baeslack III, P. Threadgill, and D.Phillips.
158. Interface Characteristics of Solid-Phase Welds Between Ti-6Al-2An-4Zr-2Mo-0.1Si and Ti-14Al-21Nb Titanium Aluminides, Proc. 7th World Conference on Titanium, San Diego, Ca, June, 1992. With M.C.Juhas, W.A Baeslack III, P. Threadgill, D. Phillips, and T.F. Broderick.
159. Interface Characteristics of Solid-State Welds in Titanium Aluminides, *The Processing, Properties and Applications of Metallic and Ceramic Materials*, ed. M.H. Loretto and C.J. Beevers, Proc. International Conf., Birmingham, U.K., September, 1992 with M.C. Juhas, K.H. Hou, W.A. Baeslack III, P.L. Threadgill, and D. Phillips.
160. An Electron Microscopy Study of Inertia-Friction Welds in Ti-48Al-2Cr-2Nb, Conf. Proc., Trends in Welding Research, Gatlinburg, June, 1992 with K.H.Hou, M.C. Juhas, W.A. Baeslack III and D.L. Phillips.
161. On charge density determinations in intermetallics by quantitative convergent beam electron diffraction, 1992, Matls. Sci. & Eng., A152, 237. With J.A. Horton, Z.L. Wang, R. Beanland.
162. Determining the Burgers Vectors of Decorated Dislocations in γ-TiAl by Diffraction Contrast and CBED, 1992, Proceedings of 10th European Congress on Electron Microscopy, Granada (EUREM'92), Vol. 1, 209. With J.M.K. Wiezorek, A.R. Preston, S.A. Court, and C.J. Humphreys.
163. The stability of B2 compounds in Ti-modified Nb-Al alloys, in <u>High Temperature Ordered Intermetallic Alloys V</u>, edited by I. Baker, J.D. Whittenberger, R. Darolia, and M.H. Yoo, (*Mater. Res. Soc. Proc.*, 288, Pittsburgh, PA, 1992), p. 243 with J. Shyue, D.-H. Hou , S. Johnson, M. Aindow.
164. Deformation mechanisms and mechanical properties in Ti-modified Nb-Al alloys, in <u>High Temperature Ordered Intermetallic Alloys V</u>, edited by I. Baker, J.D. Whittenberger, R. Darolia, and M.H. Yoo, (*Mater. Res. Soc. Proc.*, 288, Pittsburgh, PA,1992), p.573. With J. Shyue, D.-H. Hou, S. Johnson, and M. Aindow
165. Deformation mechanisms in the Intermetallic compound $MoSi_2$, in <u>High Temperature Ordered Intermetallic Alloys V</u>, edited by I. Baker, J.D. Whittenberger, R. Darolia, and M.H. Yoo, (*Mater. Res. Soc. Proc.*, 288, Pittsburgh, PA, 1992), p. 567. With D.J. Evans, S.A. Court, and P.M. Hazzledine
166. Lamellar Interfaces and their Contribution to Plastic Flow Anisotropy in TiAl-based Alloys, in <u>High Temperature Ordered Intermetallic Alloys V</u>, edited by I. Baker, J.D. Whittenberger, R. Darolia, and M.H. Yoo, (*Mater. Res. Soc. Proc.*, 288, Pittsburgh, PA,1992), p. 495. With B. Kad and P.M. Hazzeldine.
167. Co-Continuous Alumina-Aluminum Composites Produced by Solid Displacement Reactions: Processing, Structure, and Properties --16th Annual Conference on Composites, Materials and Structures (Restricted Sessions), 1992. With M.C. Breslin and G.S. Daehn
168. Co-Continuous Alumina-Aluminum Composites for Heat Sinks and Substrates, ASM/TMS Fall 1992 Meeting. With M.C. Breslin and G.S. Daehn
169. Enhanced Decomposition of Rapidly Solidified Microstructures in Al-Fe-Mo and Ti-Al-Er Alloys by Plastic Deformation and Applied Stress, 1993, Acta Metall. et Mater., 41, 73. With D.J.Miller.
170. Deformation Mechanisms in Intermetallic Compounds based on Nb_3Al, Matls. Sci. and Eng., 1993, A170, 1. With J. Shyue, D-H Hou, and M. Aindow
171. Dislocation dissociation in the Intermetallic compound $MoSi_2$, *Phil. Mag. Letts*, 1993, 67, 331. With D.J. Evans, S.A. Court, and P.M. Hazzledine
172. Applications of Co-Continuous Ceramic Composite Materials for Automotive Applications -- SAE Technical Paper Series # 930184; International Congress and Exposition, 1993. With M.C. Breslin, Liang Xu and G.S. Daehn

173. Co-Continuous Alumina-Aluminum Composites Produced by Solid/Liquid Displacement Reactions: Processing, Structure, and Properties --17th Annual Conference on Composites, Materials, and Structures (Restricted Sessions), 1993. With M.C. Breslin and G.S. Daehn
174. Measurement of Low Order Structure Factors in the Intermetallic Compound TiAl using the Quantitative CBED method, (Invited), 1993, Edrs.: J. T. Armstrong, and J. R. Porter, Proceedings of 27th Annual Microbeam Analysis Society (MAS) meeting, p. s218. With S. Swaminathan, I. P. Jones, N. J. Zaluzec, and D. M. Maher
175. Measurement of Low Order Structure Factors in Intermetallic TiAl, 1993, Materials Science and Engineering, A170, 227. with S. Swaminathan, I. P. Jones, N. J. Zaluzec, and D. M. Maher
176. Observations of <100] dislocations in 1/2<112] reacted dislocation networks in lamellar TiAl subboundaries, 1993, Phil. Mag. Letts., 68, 21. with B. Kad.
177. On the Experimental Determination of Low Order Structure Factors in Intermetallic TiAl by Energy Filtered Convergent Beam Electron Diffraction, (Invited), 1993, Proc. 51st Annual meeting of the Microscopy Society of America (MSA), Eds.: G. W. Bailey and C. L. Rieder, p.662. With S. Swaminathan, I. P. Jones, N. J. Zaluzec, and D. M. Maher
178. Ordering in NbAl Alloys with 10 to 25 Atomic-Percent Al. Institute of Physics Conference Series: Electron Microscopy and Analysis, 1993, (138): 433-436. With L.S. Smith, M. Aindow, M.H. Loretto, and J. Shyue.
179. Experimental Determination of Low-Order Structure Factors in the Intermetallic Compound TiAl. Materials Science and Engineering A-Structural Materials Properties Microstructure and Processing, 170 (1-2): 227-235. Oct, 1993. With W. Swaminathan. ,I.P. Jones, and M. Aindow.
180. Observations of a metastable-B2 Phase in Rapidly Solidified Ribbons of Nb-Al Alloys. Scipta Metallurgica Et Materialia, 29 (10): 1271-1274. Nov, 1993. With H. Kohmoto, J. Shyue, and M. Aindow.
181. On the Contribution of Climb to High Temperature Deformation in Single phase γ-TiAl, 1994, Phil. Mag. A, 69, 21. With B.K. Kad
182. Burgers Vector Determination of Decorated Dislocations in γ-TiAl by Diffraction Contrast and Large-Angle Convergent-Beam Electron Diffraction, 1994, Phil. Mag. A, 69, 285. With J.M.K. Wiezorek, A.R. Preston, S.A. Court, and C.J. Humphreys
183. On the Origins of 'Forbidden' 100-type Spots in Electron Diffraction Patterns from the A15 Compounds Nb_3Al, Cr_3Si, and V_3Si, 1994, Phil. Mag., 69, 23. With M. Aindow, L.S. Smith, J. Shyue, M.H. Loretto
184. Effects of Oxygen on the Deformation Behavior in Single Phase γ-TiAl Alloys, 1994, Phil. Mag. Lett., 70, 211 With B.K. Kad
185. Site Occupation of Al atoms in Al-rich TiAl: Effect on the Debye-Waller factors, 1994, MRS symposium proceedings, 364, Ed. J. Horton, I.Baker, S.Hanada, R.D.Noebe and D.S.Schwartz, p. 175. With S.Swaminathan, I.P.Jones and D.M.Maher.
186. A Study of Temperature Dependence of the Isotropic Debye-Waller Factor and Absorption Potential of 220 Reflection of Silicon using Energy-Filtered CBED, 1994, ICEM-13 Paris, Volume-1, P. 861. With S.Swaminathan, S. Altynov, I. P. Jones, N. J. Zaluzec and D. M. Maher.
187. Measurement of Debye-Waller Factors of Silicon as a Function of Temperature using Energy Filtered CBED Rocking Curve Technique, 1994, Proceedings of the MSA meeting, Edrs. : G. W. Bailey and A. J. Garratt-Reed, Volume-52, p. 996. With S. Swaminathan, S. Altynov, I. P. Jones, N. J. Zaluzec and D. M. Maher.
188. Microstructural Transitions in Titanium-Aluminum Thin Film Multilayers, 1994, Journal of Electronic Materials, 23, 1027. With R. Ahuja.
189. Structure and Properties of Nanolaminated Ti-Al Thin Films, 1994, Journal of Metals, 46, 35. With R. Ahuja.
190. Alumina/Aluminum Co-Continuous Ceramic Composite (C^4) Materials Produced by Solid/Liquid Displacement Reactions: Processing, Kinetics, and Microstructures, 1994, Ceramic Engineering & Science Proceedings, 15, 104, Best Paper Award. With M.C. Breslin, J. Ringnalda, J. Seeger, A.L. Marasco, and G.S. Daehn.
191. Development of Co-Continuous Ceramic Composite Materials for Specific Applications, 1994, SAE Technical Paper Series #940850l, International Conference and Exposition. With J. Ringnalda, M.C. Breslin, J. Seeger, D. LeJeune, and G.S. Daehn.

192. Microstructural Analysis of Plastically Deformed Co-Continuous Ceramic Composite (C^4) Materials, in "High Performance Composites: Commonalty of Phenomena", eds. KK. Chawla, P.K. Liaw, and S.G. Fishman, 1994, The Minerals, Metals, and Materials Society, p. 397. With J. Ringnalda, M.C. Breslin, B. Starck, J. Seeger, and G.S. Daehn.
193. On the Mechanism of Transformation of γ-TiAl from α_2-Ti_3Al, 1994, Defect-Interface Interactions, Mat. Res. Soc. Symp. Proc., 319, 311. With Bimal Kad and Peter Hazzledine.
194. Characterization of Solid-Phase Welds Between Ti-6A1-2Sn-4Zr-2Mo-0.1Si and Ti-13.5Al-21.5Nb Titanium Aluminide. Materials Characterization, 33 (4): 357-367. Dec, 1994. With W.A. Baeslack, T.F. Broderick, and M. Juhas.
195. Microstructural Characterization of Layered Interfaces in a Silicon Carbide Reinforced Titanium Matrix Composite, 1995, Scripta metall. mater., 32, 1695. With J. Shyue and W.O. Soboyejo.
196. Processing, Microstructure, and Properties of Co-Continuous Alumina-Aluminum Composites, 1995, Materials Science and Engineering, A195, 113. With M.C. Breslin, J. Ringnalda, L. Xu, M. Fuller, J. Seeger, G.S. Daehn, and T. Otani.
197. Resistivity of Titanium-Aluminum Multi-layered Thin Films, 1995, Thin Solid Films, 269, 29. With R. Banerjee, R. Ahuja and S. Swaminathan
198. Elastic and Plastic Behavior of a Co-Continuous Alumina/Aluminum Composite, 1996, Acta metall. mater., Vol. 44, No. 1, 249-261. With G.S. Daehn, B. Starck, L. Xu, K.F. Elfishawy, and J. Ringnalda.
199. Scanning and Transmission Electron Microscopy on Composite Materials Prepared by SMP and In-situ Displacive Reactions, 1995, Proc. EMAG, Institute of Physics, accepted for publication. With J. Ringnalda, R. Wheeler, M.C. Breslin, H.J. Schmutzler and K.H. Sandhage.
200. A TEM Study of Dislocation Decoration in γ-TiAl, 1995, Proc. EMAG, Institute of Physics Conf. Series No. 147, 515-519. With J.M.K. Wiezorek, G. Botton and C.J. Humphreys.
201. Factors Affecting the Accuracy of Structure Factor Measurements in TiAl, 1995, Proc. EMAG, Institute of Physics Conf. Series No. 147, 133-136. With S. Swaminathan, J.M.K. Wiezorek, N.J. Zaluzec, I.P. Jones and D.M. Maher.
202. The Ordering Tie Line Ananalysis - A New Approach to ALCHEMI, 1995, Proc. EMAG, Institute of Physics Conf. Series No. 147, 39-42. With D-H Hou and I.P. Jones.
203. Recent Developments in Nb Aluminide Intermetallics, 1995, Proceedings of the TMS Fall 1995 meeting, Clevelend, OH, Oct. 29-Nov. 3, 1995 (in press) with D.-H. Hou and R. Wheeler.
204. Phase Evolution During Crystallization of Amorphous Titanium Aluminide Thin Films: Effect of Mn and Nb Additions, 1995, Metastable Metal-based Phases and Microstructures, Mat. Res. Soc. Symp. Proc., Vol. 400, 215-220. With R. Banerjee, S. Swaminathan and R. Wheeler.
205. The High Temperature Oxidation of Nb-40Ti-15Al and the Effect of Cr Alloying and Silicide Diffusion Coatings, 1995, in High-Temperature Ordered Intermetallic Alloys VI, Mater. Res. Soc. Proc. 364, p.1327. With B.V. Cockeram, H.J. Schmutzler, J. Shyue, K. Hoshino, S. Meng and R. Wheeler.
206. Pseudo-Twinning in a Deformed Nb-15Al-25Ti B2 Alloy, 1995, in High-Temperature Ordered Intermetallic Alloys VI, Mater. Res. Soc. Proc. 364, p.1359. With S.S. Yang, D.-H. Hou and R. Wheeler.
207. Energy Filtered Diffraction Contrast Defect Imaging Using A Field Emission TEM, 1995, Proceedings MSA 95, Kansas City, 166-167. With J.M.K. Wiezorek and S. Swaminathan.
208. Structure Factor Measurement in TiAl and Silicon, 1995, Proceedings MSA 95, Kansas City, 150-151. With S. Swaminathan, J.M.K. Wiezorek, I.P. Jones, N.J. Zaluzec, D.M. Maher
209. Mullite Joining by the Oxidation of Malleable, Alkaline-Earth-Metal-Bearing Bonding Agents, 1996, J. Am. Ceram. Soc., Vol. 79, No. 7. 1839-1850. With K.H. Sandhage, H.J. Schmutzler, and R. Wheeler.
210. Micro-Mechanism of Facture in Partially Lamellar TiAl, 1996, 8th World Titanium Conference, Titanium 95, Birmingham, U.K., Vol. I, 144-15. With J.M.K. Wiezorek and P.M. DeLuca.
211. The Nature of the Interaction Between Interstitial Solute and Dislocations in TiAl, 1996, 8th World Titanium Conference, Titanium 95, Birmingham, U.K. Vol. 1, 129-136. With J.M.K. Wiezorek.
212. The Ordering Tie-Line Method for Sublattice Occupancy in Intermetallic Compounds, 1996, Phil. Mag., A74, 741. With D.H. Hou and I.P. Jones
213. Dimensionally Induced Structural Transformations in Titanium-Aluminum Multilayers, 1996, Phys. Rev. Letts, 76, 3778. With R. Ahuja and R. Banerjee.

214. Crystallization of an Amorphous Phase in Sputter Deposited Ti-Al Alloy Thin Films, 1996, Metal. & Matls. Trans., A27, 2047. With R. Banerjee, S. Swaminathan, J. M. K. Wiezorek and R. Wheeler.
215. Deformation Mechanisms in $MoSi_2$ at Temperatures above the Brittle-Ductile Transition Temperature. Part 2: Single Crystal $MoSi_2$, 1997, Phil. Mag., 75, 17. With D. J. Evans, F. J. Scheltens, and J. B. Woodhouse.
216. Inertia-Friction Welding of SiC-reinforced 8009 Aluminum, 1996, J. Matls. Sci., 31, 2149. With T.J. Leinert, W.A. Baeslack III and J. Ringnalda.
217. Debye-Waller Factors in Off-Stoichiometric γ-Ti-Al: Effect of Ordering of Excess Al Atoms on Ti Sites, 1996, Phil. Mag. Letts., 73, 319. With S. Swaminathan, I.P. Jones, D.M. Maher and A.W.S. Johnson.
218. Mullite Joining by the Oxidation of Malleable, Alkaline-Earth-Metal-Bearing Bonding Agents. Journal of the American Ceramic Society, 79 (7): 1839-1850. July 1996. With K.H. Sandhage, H.J. Schmutzler, and R. Wheeler.
219. Elastic and Plastic Behavior of a Co-Continuous Alumina Aluminum Composite. Acta Materialia, 44 (1): 249-261. Jan 1996. With G.S. Daehn, B. Starck, L. Xu, K.F. Elfishawy, J. Ringnalda.
220. Effects of Debye-Waller Factors and Compositional Uncertainties on the 200 Structure Factor in γ-TiAl. 1997, Phil. Mag. Letts., 75, 261. With S. Swaminathan, I.P. Jones, D.M. Maher and A.W.S. Johnson.
221. The Ordering Scheme in Nb Aluminides with the B2 Crystal Structure, 1997, Scripta met. et mater., 36, 617. With D-H Hou.
222. Development of a New Series of Nb Aluminides for Elevated Temperature Applications, 1996, Processing and Design Issues in High Temperature Materials, proceedings of TMS conference in Davos Switzerland, May 1996, 221-232. With S.S. Yang, D.-H. Hou and R. Wheeler.
223. Novel, Alkiline-Earth-Metal-Bearing Bonding Agents for Joining Ceramics Used at Elevated Temperatures, 1996, The Journal of the American Ceramic Society, 1996, (in press). With K.H. Sandhage, H.J. Schmutzler and R. Wheeler.
224. Structural and Phase Transformations in Thin Film Ti-Aluminides and Ti/Al Multilayers, Layered Materials for Structural Applications, 1996, Mat. Res. Soc. Symp. Proc., Spring Meeting, 1996, (in press). With R. Banerjee, S. Swaminathan and R. Wheeler.
225. Deformation Mechanisms and Strain Accommodation across lamellar Interfaces in a binary Titanium Aluminum Alloy, 1996, 'Deformation and Fracture of Ordered Intermetallic Materials III', TMS: Warrendale, PA, 77-87.,With J.M.K. Wiezorek and X.D. Zhang.
226. Microstructural Development in Laser and Electron Beam Welds on A356/SiC/15p, 1996, 'Processing, Properties and Applications of cast Metal Matrix Composites', Cincinnati, OH, TMS: Warrendale, PA, 33-54. With T.J. Lienert, J.M.K. Wiezorek and W. A. Baeslack III.
227. Synthesis of Nanocomposite Thin Film Ti/Al Multilayers and Ti Aluminides, 1997, Mater. Res. Soc. Symp. Proc., Symposium on Nanophase and Nanocomposites II, 457, 309. With R. Banerjee, X.D. Zhang and S.A. Dregia.
228. Deformation Mechanisms at Intermediate Temperatures in a Nb Aluminide Compound, 1996, Deformation and Fracture of Ordered Intermetallic Materials, proceedings of TMS Materials Week,(in press). With R. Wheeler, S. Perungulam, D.-H. Hou and S.K. Banerjee.
229. Shear Transmission in Lamellar Ti-48at.%Al, 1997, Mater. Res. Soc. Symp. Proc., 460, 231-236. With J.M.K. Wiezorek, X-D Zhang and W.A.T. Clark.
230. Mechanism for Tensile Yield Point Phenomenon and Serrated Yielding in Nb-40Ti-15Al, 1996, Mater. Res. Soc. Symp. Proc., Symposium on High Temperature Ordered Intermetallics, MRS Fall Metting, Boston, MA, December 1996 (in press). With S. Perungulam, R. Wheeler and D-H. Hou.
231. Precise and Accurate Refinements of the 220 Structure Factor in Si by the Systematic-row CBED Method, 1997, Ultramicrscopy, 69, 169. With S. Swaminathan, S. Altynov, I.P. Jones, N.J. Zaluzec, and D.M. Maher.
232. TEM Characterization of Planar Defects in a Massively Transformed TiAl-Alloy, 1997, Mater. Res. Soc. Symp. Proc., 460, 213-218. With X-D Zhang, J. Wiezorek, M.J. Kaufman and M.H. Loretto.
233. HRTEM of Dislocations and Interfaces in TiAl, 1997, Mater. Res. Soc. Symp. Proc., 466, 131-138. With M.J. Mills and J.M.K. Wiezorek.

234. Determining directly from Experiment the Magnitude of the Burgers Vector of <c>-component Dislocations in Ti_3Al, 1997, Phil. Mag. Letts, Vol. 75, No. 5, 281-289. With J.M.K. Wiezorek and C.J. Humphreys.
235. Defect Sub-Structures in Lamellar Ti-48Al after 'Hard' Orientation Loading at Room and Elevated Temperature, 1997, 'Structural Intermetallics 1997', (TMS: Warrendale, PA), 195. With X.D. Zhang and J.M.K. Wiezorek.
236. Observation of Ordered Ti_3Al_5 Precipitation in slightly Al-rich γ-TiAl, 1997, Microscopy and Microanalysis, 3, Suppl. 2, 699. with S. Jayanthi, S. Swaminathan and J.M.K. Wiezorek.
237. Microstructural Characterization and Mechanical Behavior of Novel In-Situ Be-Al Composites, 1997, 'Light Weight Alloys for Aerospace Applications IV', (TMS: Warrendale, PA), 247. With X.D. Zhang, G. Meyrick, F.C. Grensing and J.M.K. Wiezorek.
238. Characterization of α_2-Precipitates in a (α/β) Titanium Alloy, 1997, 'Light Weight Alloys for Aerospace Applications IV', (TMS: Warrendale, PA, 173. With X.D. Zhang, W.A. Baeslack III, D.J. Evans and J.M.K. Wiezorek.
239. Deformation and Fracture Characteristics in TiAl at room temperature and 800°C, 1997, Matls. Sci. and Eng. A 234-236, 1106-1109. With Jörg M. K. Wiezorek and Michael J. Mills.
240. Deformation Mechanisms in MoSi2 at Temperatures Above the Brittle-to-Ductile Transition Temperature. 1.Polycrystalline MoSi2. Philosophical Magazine A-Physics of Condensed Matter Structure Defects and Mechanical Properties. 75 (1): 1-15. Jan. 1997. With D.J. Evans, F.J. Scheltens, and J.B. Woodhouse.
241. Activation of Slip in Lamellae of α_2-Ti_3Al in TiAl Alloys, 1998, *Phil. Mag. A*, 78, 217.With J.M.K. Wiezorek, X.D. Zhang and W.A.T. Clark.
242. Interaction of Dislocations and Interstitial Solute in γ-TiAl, 1998, *Phil. Mag.A*, 77, No. 3, 661. With J.M.K. Wiezorek.
243. Synthesis of $BaAl_2Si_2O_8$ from Solid Ba-Al-Al_2O_3-SiO_2 Precursors: II. TEM Analyses of Phase Evolution, 1998, *J. Am. Ceram. Soc*..61(11), 2983. With X-D Zhang and K. Sandhage.
244. Synthesis of $BaAl_2Si_2O_8$ from Solid Ba-Al-Al_2O_3-SiO_2 Precursors: III. The structure of $BaAl_2Si_2O_8$ formed by annealing at 650 °C and at 1650 °C, 1998, *J. Mat. Sci. Research*, 13(11), 3122. With X-D Zhang and K. Sandhage.
245. Deformation Mechanisms in a Binary Ti-48Al Alloy with Lamellar Microstructure, 1997, *Philosophical Magazine Letters*, Vol. 75, No. 5, 271-280. With Jörg M. K. Wiezorek, Paul DeLuca and Michael J. Mills
246. Deformation Behavior of α_2-Lamellae in Fully Lamellar Ti48Al-2Mn-2Nb at Room Temperature, 1998, *Scripta Materialia*, 38, 811. With J.M.K. Wiezorek, X-D. Zhang, A. Godfrey, D. Hu, and M.H. Loretto.
247. Reaction between SiO_2 and Molten Aluminum, 1998, *J. Japan Foundry Engineering Society*, 70, 1. With K. Hoshino, T. Sugiyama, T. Kurosawa and T. Otani.
248. Precipitation of Ordered α_2-Phase in Ti-6-2222, 1998, *Acta Materialia*, 46(13), 4485, with X.D. Zhang, W.A. Baeslack III, D.J. Evans and J.M.K. Wiezorek.
249. On the discontinuous yielding phenomena observed in a Nb-Ti-Al alloy, 1998, *Intermetallics*, 6(7-8), 749. With R.J. Grylls, S. Banerjee, S. Perungulam, R. Wheeler.
250. Polymorphic Phase Stability in Thin Multilayers, 1998, *Scripta Mater*., 39, 217. With S.A. Dregia and R. Banerjee.
251. Sublattice Occupancies in Ternary B2 Alloys, *MRS Symp. Proc*., MRS Fall Meeting (1998), with R. Banerjee, S. Amancherla, and S. Banerjee
252. Interaction of Dislocations and Interstitial Solute in Gamma-TiAl. Philosophical Magazine A-Physics of Condensed Matter Structure Defects and Mechanical Properties. 77 (3): 661-674. March, 1998. With J.M.K. Wiezorek.
253. Dimensionally induced structural transformations in titanium-aluminium multilayers - Reply, 1999, *Physical Review Letters*, 82(9), 2003. With R. Banerjee, R. Ahuja.
254. Phase stability in Al/Ti multilayers, 1999, *Acta Materialia*, 47(4), 1153. With R. Banerjee, X.D. Zhang, S.D. Dregia.
255. Stability of *fcc* Ti in Ti / Al Multilayers, 1999, *Acta Mater.* ,47(15), 4225. With R. Banerjee and S. A. Dregia.

256. Planar Defects in massively transformed Ti-Al alloys, 1999, *Philosophical Magazine Letters*, 79(8), 519. With X.D. Zhang, J.M.K. Wizorek, M.J. Kaufman, M.H. Loretto.
257. On the stability of omega phase in Ti-6-22-22S and Ti-6-4 alloys, 1999, *Scripta Materialia*, 41(6), 659. With X.D. Zhang, J.M.K. Wizorek, W.A. Baeslack, D.J. Evans.
258. Optimizing the ALCHEMI Technique. Philosophical magazine A-Physics of Condensed Matter Structure Defects and Mechanical Properties, 79 (10): 2525-2538. Oct 1999. With N. Jiang, D.H. Hou, and I.P Jones.
259. Phase Evolution During Crystallization of Sputter Deposited Amorphous Ti-Al Alloy Thin Films , 2000, *Philos. Mag. A* 80(8), 1715. With R. Banerjee, S. Swaminathan, R. Wheeler.
260. Microstructural Characterization of Novel In-Situ Al-Be Composites, 2000, *Metall. Mater. Trans. A*, 31(11), 2963. With X. D. Zhang, F. C. Grensing, F. Meisenkothen, J. M. K. Wiezorek, G. Meyrick,
261. Mechanisms of Plasticity and Fracture of Partially Lamellar Titanium Aluminum, 2000, *Intermetallics*, 8(2), 99. With J. M. K. Wiezorek, P. M. Deluca, and H. L. Fraser.
262. Effect of stretching on the strength (Bauschinger effect) of Ti-6Al-2Cr-2Mo-2Zr alloy, 2000, *J. Advanced Mater*., 32(1), 34. With X. D. Zhang, T. J. Ginter, B. Cornell, D. J. Evans.
263. Ordering in Ternary B2 Compounds, 2000, *The International Journal of Refractory and Hard Materials*, 18, 245. With S. Amancherla, R. Banerjee, S. Banerjee.
264. Laser-deposited advanced materials, 2001, *J. Advanced Mater*., 33(1) 17. With X. D. Zhang, H. Zhang, R. J. Grylls, T. J. Lienert, C. Brice.
265. Modeling of Site Occupancies in Ternary B2 Compounds in Nb-Ti-Al, 2001, *Philos. Mag. A*, 81(4), 777. With R. Banerjee, S. Amancherla, I. P. Jones, S. Banerjee.
266. Influence of Crystallographic Orientation and Layer Thickness on Fracture Behavior of Ni/Ni_3Al Multilayered Thin Films, 2001, *Scripta Mater*., 44(11), 2629. With R. Banerjee, J. P. Fain, P. M. Anderson.
267. Direct Laser Deposition of Alloys From Elemental Powder Blends, 2001, *Scripta Mater*., 45(10), 1123. With K. I. Schwendner, R. Banerjee, P. C. Collins, C. A. Brice.
268. Characterization of Laser Deposited TiAl Alloys. Scripta Materialia, 44 (10): 2419-2424. May 2001. With X.D. Zhang, C. Brice, D.W. Mahaffey, H. Zhang, K Schwendner, and D.J. Evans.
269. A Novel Radical Cyclization of 2-Bromoindoles. Synthesis of Hexahydropyrrolo[3,4-b]indoles. Chemical Communications, (9): 805-806, 2001. With G.W. Gribble, and J.C. Badenock.
270. Characterization of Silicide Precipitates in Nb-Si and Nb-Ti-Si Alloys. Philosophical Magazine A. 81 (8): 1967-1978. Aug 2001. With R.J. Grylls, B.P. Bewlay, and H.A. Lipsitt.
271. Site Occupancies in B2 FeAl and NiAl Alloys with Ternary Additions, 2002, *Acta Mater.,* 50(3), 633 With R. Banerjee, S. Amancherla, S. Banerjee.
272. Chemical Ordering and Texture in Sputter Deposited Ni_3Al Thin Films, 2002, *Acta Mater.*, 50(3), 643. With G. B. Thompson, R. Banerjee, X. D. Zhang, P. M. Anderson.
273. Phase Evolution in Laser Deposited Titanium-Chromium Alloys, 2002, *Metall. and Mater. Trans*. *A*, 33, 2129. With R. Banerjee and P. C. Collins.
274. Unexpected Nanoscale Phase Separation in Sputter Deposited Ni-25at%Al Thin Films, 2002, *Philos. Mag. Lett*., 82(11), 623. With R. Banerjee, G. B. Thompson, and G. B. Viswanathan.
275. Laser Deposition of *In Situ* Ti – TiB Composites, 2002, *Advanced Engineering Materials*, 4(11), 847. With R. Banerjee and P. C. Collins.
276. Synthesis of single-walled carbon nanotubes in vibrationally non-equilibrium carbon-monoxide, 2002, *Chem. Phys. Lett*., 352(5-6), 342. With E. Plonjes, P. Palm, G. B. Viswanathan, V. V. Subramaniam, I. V. Adamovich, W. R. Lempert, and J. W. Rich.
277. Modeling of Site Occupancies in B_2FeAl and NiAl Alloys With Ternary Additions. Acta Materialia, 50 (3): 633-641. Feb 2002. With R. Banerjee, S. Amancherla, and S. Banerjee.
278. Effect of long-term aging on the microstructural stability and mechanical properties of Ti-6Al-2Cr-2Mo-2Sn-2Zr alloy, 2003, *Mater. Sci. Eng. A*, 344 (1-2), 300. With X. D. Zhang, D. J. Evans, and W. A. Baeslack.
279. Sputter deposited nanocrystalline Ni-25Al alloy thin films and Ni/Ni3Al multilayers, 2003, *Thin Solid Films*, 424, 93. With R. Banerjee, G. B. Thompson, and P. M. Anderson.
280. Effect of heat treatment and silicon addition on the microstructure development of Ti-6Al-2Cr-2Mo-2Sn-2Zr alloy, 2003, *Mater. Sci. Eng. A*, 343(1-2), 210. With X. D. Zhang, P. Bonniwell, W. A. Baeslack, D. J. Evans, T. Ginter, T. Bayha, and B. Cornell.

281. Microstructural Evolution in Laser Deposited Ni-25at%Mo Alloy, 2003, *Mater. Sci. and Engg. A*, 347, 1. With R. Banerjee, C. A. Brice, and S. Banerjee.
282. Microstructural Evolution in Laser Deposited Compositionally Graded α/β Titanium-Vanadium Alloys, 2003, *Acta Mater*, 51(11), 3277. With R. Banerjee, P. C. Collins, D. Bhattacharyya, and S. Banerjee.
283. Microstructure, Magnetic, Transport, and Optical Properties of Ordered and Disordered Ni-25Al Alloy Thin Films, 2003, *Thin Solid Films*, 441, 255. With R. Banerjee, P. Ayyub, G.B. Thompson, R. Chandra, and P. Taneja.
284. Processing and Microstructural Characterization of Sputter-Deposited Ni/Ni3Al Multilayered Thin Films, 2003, *J. of Mater. Res.*. 18(4), 979. With E. A. Sperling, R. Banerjee, G.B. Thompson, and P.M. Anderson.
285. Lattice expansion in nanocrystalline Nb thin films, 2003, *Appl. Phys. Lett.* 82(24), 4250. With R. Banerjee, E. A. Sperling, G. B. Thompson, S. Bose, and P. Ayyub.
286. Proximity effect in Nb/Zr multilayers with variable Nb/Zr ratio, 2003, *Solid State Comm*., 127, 349. With R. Banerjee. P. Vasa, G. B. Thompson, and P. Ayyub.
287. Direct Laser Deposition of In Situ Ti-6Al-4V - TiB Composites, 2003, *Mater. Sci. Eng. A*. 358, 343. With R. Banerjee, P. C. Collins, and A. Genc.
288. Microstructural Evolution in Laser Deposited Compositionally Graded *α/β* Titanium-Vanadium Alloys, 2003, *Acta Mater*., 51(11), 3277. With R. Banerjee, P. C. Collins, D. Bhattacharyya and S. Banerjee
289. Phase Stability of *bcc* Zr in Nb/Zr Thin Film Multilayers, 2003, *Acta Mater*., 51(18), 5285. With G. B. Thompson, R. Banerjee, and S. A. Dregia
290. The role of crystallographic and geometrical relationships between alpha and beta phases in an alpha/beta titanium alloy, 2003, Acta Mater., 51(16), 4679. With D. Bhattacharyya, G. B. Viswanathan, R. Denkenberger and D. Furrer
291. Laser Deposition of Compositionally Graded Titanium-Vanadium and Titanium-Molybdenum Alloys, 2003, *Mater. Sci. and Eng. A,* 352(1-2), 118. With P. C. Collins, R. Banerjee, and S. Banerjee,
292. The influence of the enthalpy of mixing during the laser deposition of complex titanium alloys using elemental blends, 2003, *Scripta Mater*., 48(10), 1445. With P. C. Collins, and R. Banerjee
293. Direct Laser Deposition of *In Situ* Metal Matrix Composites Based on Titanium Borides, 2003, *Titanium 2003: Proceedings of the Tenth World Conference on Titanium*, **IV**, 2547. With R. Banerjee, P. C. Collins, A. Genc, and J. Tiley
294. Phase Transformations in Compositionally Graded Titanium Alloys, 2003, *Titanium 2003: Proceedings of the Tenth World Conference on Titanium*, **I**, 533. With R. Banerjee, P. C. Collins, D. Bhattacharyya, and S. Banerjee
295. Modeling the Relationships between Microstructural Parameters and the Tensile Properties in Ti-6Al-4V using Neural Networks and Fuzzy Logic Models, 2003, *Titanium 2003: Proceedings of the Tenth World Conference on Titanium*, **III**, 1413. With J. Tiley, R. Banerjee, T. Searles, and S. Kar
296. A Combinatorial Approach to the Development of Neural Networks for the Prediction of Composition / Microstructure / Property Relationships in α/β Ti Alloys, 2003, *Titanium 2003: Proceedings of the Tenth World Conference on Titanium*, **III**, 1389. With P. C. Collins, S. Connors, and R. Banerjee
297. The Effect of Heat Treatment on the Microstructure of Ti-5Al-5Mo-5V-3Cr-1Fe (Ti-555), 2003, *Titanium 2003: Proceedings of the Tenth World Conference on Titanium*, **III**, 1559 With M. Harper, R. Williams, G. B. Viswanathan, J. Tiley, R. Banerjee, and D. J. Evans
298. Tuning Phase Stability in Nanocomposite Multilayers, 2003, *Appl. Phys. Lett.*, 83(17), 3471. With G. B. Thompson, and R. Banerjee.
299. Characterization of the Ti-Al-Er Alloy Produced Via Direct Laser Deposition. Journal of Materials Science, 38 (7): 1517-1521. Apr 2003. With C.A. Brice.
300. Strengthening Mechanisms in Ti-Nb-Zr-Ta and Ti-Mo-Zr-Fe Orthopaedic Alloys", 2004, *Biomaterials*, 25(17), 3413. With R. Banerjee, S. Nag, and J. Stechschulte.
301. Precipitation of Grain Boundary Alpha in a Laser Deposited Compositionally Graded Ti-8Al-xV Alloy – an Orientation Microscopy Study, 2004, Acta Mater., 52, 377. With R. Banerjee, D. Bhattacharyya, P. C. Collins, and G. B. Viswanathan.

302. Slip Transfer across Hetero-Interfaces in two-phase Titanium Aluminum Intermetallics, Mat. Res. Soc. Symp. Proc. Vol. 819, 2004 Materials Research Society, San Francisco. With Jörg M.K. Wiezorek, Xiao-Dong Zhang
303. Quantification of Microstructural Features in α/β Titanium Alloys, 2004, *Mater. Sci. Eng. A*., 372(1-2), 191. With J. Tiley, T. Searles, E. Lee, S. Kar, R. Banerjee, and J. C. Russ.
304. Predicting Pseudomorphic Phases in Multilayers: Hexagonal Close Packed Nb in Nb/Zr, 2004, *Appl. Phys. Lett*, 84(7), 1082. With G. B. Thompson and R. Banerjee
305. Comparison of Microstructural Evolution in Laser Deposited and Arc-Melted *In Situ* Ti – TiB Composites, 2004, *Metall. Mater. Trans*. A, 35(7), 2143. With R. Banerjee, A. Genc, and P. C. Collins
306. A Comparison of Pseudomorphic bcc Phase Stability in Zr/Nb and Ti/Nb Thin Film Multilayers, Journal of Materials Research, 19 (5): 1582-1590. May 2004. With G.B. Thompson, R. Banerjee, S.A. Dregia, and M.K. Miller.
307. Strengthening Mechanisms in Ti-Nb-Zr-Ta and Ti-Mo-Zr-Fe Orthopaedic Alloys. Biomaterials, 25 (17): 3414-3419. Aug 2004. With R. Banerjee, S. Nag and J. Stechschulte.
308. Some Aspects of Atom Probe Specimen Preparation and Analysis of thin Film Materials. Ultramicroscopy, 100(1-2): 25-34. July 2004.
309. A Comparison of Pseudomorphic bcc Phase Stability in Zr/Nb and Ti/Nb Thin Film Multilayers. Journal of Materials Research, 19(3): 707-715. March 2004.
310. Structural Transitions in Thin Films, Dekker Encyclopaedia of Nanoscience and Nanotechnology, eds. J. A. Schwarz, C. I. Contescu, and K. Putyera, Marcel Dekker Inc. (2004), with R. Banerjee and G. B. Thompson
311. Microstructral Evolution and Strengthening Mechanisms in Ti-Nb-Zr-Ta, Ti-Mo-Zr-Fe and Ti-15Mo Biocompatible Alloys. Materials Science and Engineering C- Biomimetic and Supramolecular Systems, 25 (3): 357-362. May 2005. With S. Nag and R. Banerjee.
312. Comparison of Microstructural Evolution in Ti-Mo-Zr-Fe and Ti-15Mo Biocompatible Alloys. Journal of Materials Science – Materials in Medicine, 16 (7): 679-685. July 2005. With S. Nag, R. Banerjee, and J. Stechschulte.
313. Rapid Characterization of Titanium Microstructural Features for Specific Modelling of Mechanical Properties. Measurement Science and Technology, 16 (1): 60-69. Jan 2005. With T. Searles, J. Tiley, A. Tanner, R. Williams, B. Rollins, E. Lee, S. Kar, and R. Banerjee.
314. Formation of Equiaxed Alpha in TiB reinforced Ti Alloy Composites. Scripta Materialia, 52 (5): 387-392. Mar 2005. With D. Hill, R. Banerjee, D. Huber and J. Tiley.
315. Direct Observations and Analyses of Dislocation Substructures in the Alpha Phase of an Alpha/Beta Ti-Alloy Formed by Nanoindentation. Acta Materialia, 53 (19): 5010-5115. Nov 2005. With G.B. Viswanathan, E. Lee, D.M. Maher, and S. Banerjee.
316. Nanoscale TiB Precipitates in Laser Deposited Ti-Matrix Composites. Scripta Materialia, 53 (12): 1433-1437. Dec 2005. With R. Banerjee, A. Genc, D. Hill, and P.C. Collins.
317. Phase Transformation Textures in Ti-6Al-4V Alloy. Materials Science Forum: ICOTOM 14: Textures of Materials, Pts 1 & 2, 495-497: 681-686, 2005. With S. C. Vogel, D. Bhattacharyya, G. B. Viswanathan, and D. J. Williams.
318. Directs observations of Dislocation Substructures Formed by Nano-indentation of the Alpha-Phase in an Alpha/Beta Titanium Alloy. Materials Science and Engineering A- Structural Materials Properties Microstructure and Processing, 400: 463-466. July 2005. With G. B. Viswanathan, E. Lee, D.M. Maher, and S. Banerjee.
319. A Novel Combinatorial Approach to the Development of Beta Titanium Alloys for Orthopaedic Implants. Materials Science and Engineering C. 25 (3): 282-280. May 2005. With R. Banerjee and S. Nag.
320. Predicting and Engineering Phase Stabilities in Nanoscale Multilayers. Transactions of the Indian Institute of Metals, 58(6): 1027-1035. Dec 2005. With R. Banerjee.
321. A Study of the mechanism of Alpha to Beta Phase Transformation by Tracking Texture Evolution with Temperature in Ti-6Al-4V Using Neutron Diffraction. Scripta Materialia, 54 (2): 231-236. Jan 2006. With D. Bhattacharyya, G.B. Viswanathan, S.C. Vogel, D.J. Williams, and V. Venkatesh.
322. Thermal Process Maps for Predicting Solidification Microstructure in Laser Fabrication of Thin-Wall Structures. Journal of Materials Processing Technology, 178(1-3): 135-142. Sept 2006. With S. Bontha, N.W. Klingbeil, and P.A. Kobryn.

323. Laser-Deposited Ti-Nb-Zr-Ta Orthopedic Alloys. Journal of Biomedical Materials Research Part A, 78A (2): 298-305. Aug 2006. With R. Banerjee, S. Nag, and S. Samuel.
324. Modeling the Tensile Properties in Beta-Processed Alpha/Beta Ti Alloys. Metallurgical and Materials Transactions A, 37A (3): 559-566. March 2006. With S. Kar, T. Searles, E. Lee, G.B. Viswanathan, J. Tiley and R. Banerjee.
325. Application of Micro-sample Testing to Study Fundamental Aspects of Plastic Flow. Scripta Materialia, 54 (5): 759-764. March 2006. With M.D. Uchic, D.M. Dimiduk, R. Wheeler, and P.A. Shade.
326. Size Induced Metal-Insulator Transition in Nanostructured Niobium Thin Films: Intra-Granular and Inter Granular Contributions. Journal of Physics-Condensed Matter, 18 (19): 4553-4566. May 2006. With S. Bose, R. Banerjee, A. Genc, P. Raychaudhuri, and P. Ayyub.
327. Structure of TiB Precipitates in Laser Deposited In-Situ, Ti-6Al-4V-TiB Composites. Materials Letters, 60 (7): 859-863. Apr. 2006. With A. Genc, R. Banerjee, and D. Hill.
328. Design Tools for Structural Metallic Materials, Proceedings of Frontiers in the Design of Materials (FDM-NMD-ATM), ed. B. Raj, S. Ranganathan, S. Mannon, K. Rao, M. Mathew, P. Shankar, pp. 19-30, Universities press, Madras, Chennai, 2006. With Collins, PC, Kar, S, Searles, T, Koduri, S, Viswanathan, GB, Tiley, J, and Banerjee, R.
329. Selection of alpha variants during microstructural evolution in alpha/beta titanium alloy, Philosophical Magazine 87 (24): 3615-3627 2007. With E. Lee, R. Banerjee, S. Kar, and D. Bhattacharyya
330. Crystallographic and morphological relationships between beta phase and the Widmanstatten and allotriomorphic alpha phase at special beta grain boundaries in an alpha/beta titanium alloy", *Acta Mater.*, **55**(20), 6765 (2007). With D. Bhattacharyya and G. B. Viswanathan
331. A novel combinatorial approach for understanding microstructural evolution and its relationship to mechanical properties in metallic biomaterials, Acta Biomaterialia 3 (3): 369-376 MAY 2007. With Nag S and Banerjee R.
332. Nanoscale Characterization of Elemental Partitioning between Gamma and Gamma Prime Phases in Rene 88DT Nickel Base Superalloy, *Metall. Mater. Trans. A*, **40**, 24 (2008). With J. Y. Hwang, R. Banerjee, J. Tiley, R. Srinivasan, G. B. Viswanathan.
333. Coupling LEAP and HRSTEM to study the nanoscale structure and chemistry of interfaces, Microsc. Microanal. 14 (S2), 376 (2008). With R. Srinivasan, A. Genc, R. Banerjee, J.Y. Hwang, G.B. Viswanathan
334. Omega Assisted Nucleation and Growth of Alpha Precipitates in the Ti-5Al-5Mo-5V-3Cr-0.5Fe Beta Titanium Alloy*, Acta Mater.*, **57**(7), 2136 (2009) With S. Nag, R. Banerjee, R. Srinivasan, J. Y. Hwang. M. Harper
335. Elemental Partitioning between α and β Phases in the Ti-5Al-5Mo-5V-3Cr-0.5Fe (Ti-5553) Alloy, *Philos. Mag. A*, **89**(6), 535 (2009). With S. Nag, R. Banerjee, and A. Puthucode
336. Intra-granular Precipitation in Ti-Nb-Zr-Ta Biomedical Alloys, *J. Mater. Sci*., **44**(3), 808 (2009). With S. Nag, and R. Banerjee.
337. Application of X-ray and Neutron Diffraction to Determine Lattice Parameters and Precipitate Volume Fractions in Low Misfit Nickel Base Superalloys",Mater. Sci. Technol., 25(11), 1369, (2009) With J. Tiley, R. Srinivasan, R. Banerjee, G. B. Viswanathan, B. Toby
338. Complementary techniques for the characterization of thin film Ti/Nb multilayers*, Ultramicroscopy*, **109**(10), 1276 (2009). With A. Genc, R.Banerjee, G.B. Thompson, D.M. Maher, and A.W. Johnson
339. Compositional variations between different generations of γ' precipitates forming during cooling of a commercial nickel-base superalloy", *Metall. Mater. Trans. A*, **40A**(13), 3059 (2009). With J. Y. Hwang, S. Nag, A. R. P. Singh, R. Srinivasan, J. Tiley, G. B. Viswanathan, and, R. Banerjee
340. Coarsening kinetics of γ' precipitates in the nickel base superalloy Rene' 88 DT", Acta Mater. **57**(8), 2538 (2009) With J. Tiley, G.B. Viswanathan, R. Srinivasan, R. Banerjee, and D.M. Dimiduk.
341. Atomic scale structure and chemical composition across order-disorder interfaces, *Phys. Rev. Lett.,* **102**(8), 086101 (2009). With R. Srinivasan, R. Banerjee, G.B. Viswanathan, J. Tiley, and D.M. Dimiduk
342. Development of methods for the quantification of microstructural features in alpha+beta-processed alpha/beta titanium alloys. Materials Science and Engineering: A, **508**(1-2): p. 174-182, (2009). With Collins, P.C., Welk, B., Searles, T., Tiley, J., and Russ, J.C

343. Elemental partitioning between alpha and beta phases in the Ti-5Al-5Mo-5V-3Cr-0.5Fe (Ti-5553) alloy, *Philos. Mag. A*, **89**(6), 535 (2009). With S. Nag, R. Banerjee, J. Y. Hwang, and M. Harper
344. "Defects in Tungsten Responsible for Molecular Hydrogen Isotope Retention after Exposure to Low Energy Plasmas." *Journal of Nuclear Materials* 390-91, 717-20, 2009. With Causey, R. A., R. Doerner, R. D. Kolasinski, J. Smugeresky, K. Umstadter, and R. Williams
345. Evolution of the gamma/gamma prime interface width in a commercial nickel base superalloy studied by three-dimensional atom probe tomography, *Scripta Mater*., **61**(1), 92 (2009). With J. Y. Hwang, S. Nag, A. R. P. Singh, R. Srinivasan, J. Tiley and R. Banerjee
346. A combined experimental and simulation study to examine lateral constraint effects on microcompression of single-slip oriented single crystals. Acta Materialia, **57**(15): p. 4580-4587 (2009). With Shade, P.A., Wheeler, R., Choi, Y.S., Uchic, M.D., and Dimiduck, D.M.
347. Effects of Process Variables and Size-Scale on Solidification Microstructure in Beam-Based Fabrication of Bulky 3-D Structures, Mater. Sci. Eng. A, **513-514**, p.311 (2009) With S. Bontha, N. Klingbeil and P. Kobryn.
348. On the use of a sub-scale thermomechanical simulator to obtain accurate tensile properties of α+β– and β-processed Ti-6Al-4V. Mater. Sci. Eng., 513-514, p. 357 (2009). With B. Peterson and P. Collins.
349. Three Dimensional Morphology and Composition of Omega Precipitates in a Binary Titanium-Molybdenum alloy, Scripta Mater., **61**, 701 (2009). With A. Devaraj, R. Williams, S. Nag, R. Srinivasan and R. Banerjee.
350. Orientation effect on recovery and recrystallization of cold-rolled niobium single crystals", Mater. Sci. Eng. A., **507,** p.179 (2009) With R. Srinivasan, G.B. Viswanathan, and V. Levit.
351. Control and elimination of nucleation-related defects in GaP/Si(001) heteroepitaxy, App. Phys. Letts, **94**, 232106 (2009) With T.J. Grassman, M.R. Brenner, S. Rajagoplalan, R. Unocic, R. Dehoff, M. Mills, and S.Ringel.
352. "Nanomilling for Aberration - Corrected Tem and Haadf Stem." *Microscopy and Microanalysis* **15**, 348-49, 2009. With Cerchiara, R. R., P. E. Fischione, J. Liu, J. M. Matesa, A. C. Robins, and A. Genc
353. "Investigations of Omega Precipitation in Titanium Molybdenum Alloys by Coupling 3D Atom Probe Tomography and High Resolution (S)TEM." *Microscopy and Microanalysis* 15, 308-09, 2009. With Devaraj, A., R. E. A. Williams, S. Nag, R. Srinivasan, and R. Banerjee
354. Measurement of gamma prime precipitates in a nickel-based superalloy using energy-filtered transmission electron microscopy coupled with automated segmentation techniques, *Micron*, **41**(6), 641 (2010). With J. S. Tiley, G. B. Viswanathan, A. Shiveley, M. Tschopp, R. Srinivasan, and R. Banerjee
355. "Heterotwin Formation During Growth of Nanolayered Al-Tin Composites." *Applied Physics Letters* 96, no. 9, 2010. With D. Bhattacharyya, X.-Y. Liu, A. Genc, R. G. Hoagland, and A. Misra
356. Evaluation of gamma prime volume fractions and lattice misfits in a nickel base superalloy using the external standard X-ray diffraction method, *Mater. Sci. Eng. A* published online, July 21, (2010). With J. S. Tiley, G. B. Viswanthan, J. Y. Hwang, A. Shiveley, and R. Banerjee
357. The Use of Advanced Characterization to Study Transitions Across Solid State Interfaces, *JOM*, 64, (2010). With R. Srinivasan, R. Banerjee, G. B. Viswanathan, S. Nag, J. Y. Hwang, and J. Tiley
358. Grain character influences on corrosion of ECAPed pure magnesium., Corrosion Engineering, Science and Technology, **45**: p. 224-230 (2010). With N. Birbilis, K. D. Ralston, S. Virtanen, and C. H. J. Davies.
359. Electronic nature of the enhanced conductivity in YSZ-STO multilayers deposited by PLD, Solid State Ionics, **181**(13-14), 592-601 (2010) With A. Cavallaro, M. Burriel, J. Roqueta, A. Apostolidis, A. Bernardi, A. Tarancòn, R. Srinivasan, S. N. Cook, J. A. Kilner, D. W. McComb and J. Santiso.
360. Anomalous Oxidation States in Multilayers for Fuel Cell Applications, Advanced Functional Materials, **20**(16), 2664-2674 (2010). With J. M. Perkins, S. Fearn, S. N. Cook, R. Srinivasan, C. M. Rouleau, H. M. Christen, G. D. West, R. J. H. Morris, H. L. Fraser, S. J. Skinner, J. A. Kilner and D. W. McComb
361. Slip Transfer Across Hetero-Interfaces in Two-Phase Titanium Aluminum Intermetallics. Metallurgical and Materials Transactions A, **42**, 3, 605-612 (2011). With Wiezorek, J., Kulovits, A., Zhang, D.

362. Formation of Grain Boundary α phase; in β stabilized Ti Alloys: Its Role in Deformation and Fracture Behavior of These Alloys. Metallurgical and Materials Transactions A, **42**, 3, 645-650 (2011). With Foltz, J., Welk, B., Collins, P.C., Fraser, H.L., and Williams, J.C.
363. Phase Separation and Formation of Omega Phase in the Beta Matrix of a Ti-V-Cu Alloy, *Acta Mater*, **59**(8): 2981-2991 (2011). With H. P. Ng. A. Devaraj, S. Nag, C.J. Bettles, M. Gibson, B.C. Muddle and R. Banerjee
364. Unlocking the potential of half-metallic Sr2FeMoO6 films through controlled stoichiometry and double-perovskite ordering, Physical Review B, **83**(1), p. 014407 (2011). With A. J. Hauser, R. E. A. Williams, R. A. Ricciardo, A. Genc, M. Dixit, J. M. Lucy, P. M. Woodward, and F. Yang
365. Novel Mixed-Mode Phase Transition Involving a Composition-Dependent Displacive Component, Physical Review Letters, 2011. **106**(24), p. 245701 (2011). With S. Nag, A. Devaraj, R. Srinivasan, R. E. A. Williams, N. Gupta, G. B. Viswanathan, J. S. Tiley, S. Banerjee, S. G. Srinivasan, and R. Banerjee
366. Precipitation of ordered phases in metallic solid solutions: A synergistic clustering and ordering process, Scripta Materialia, **65**(6): p. 485-488 (2011). With G. B. Viswanathan, R. Banerjee, A. Singh, S. Nag, and J. Tiley
367. "Influence of cooling rate on the development of multiple generations of gamma prime precipitates in a commercial nickel base superalloy", *Mater. Charac.*, **62**, 878 (2011). With R. P. Singh, S. Nag, J. Y. Hwang, G. B. Viswanathan, J. Tiley, R. Srinivasan, and R, Banerjee
368. "Experimental evidence of concurrent compositional and structural instabilities leading to ω precipitation in titanium-molybdenum alloys", *Acta Mater*., **60**, 596 (2012). With A. Devaraj, S. Nag, R. Srinivasan, R.E.A. Williams, S. Banerjee, and R. Banerjee.
369. "On the correlation between the morphology of alpha and its crystallographic orientation relationship with TiB and beta in boron-containing Ti-5Al-5Mo-5V-3Cr-0.5Fe alloy", *Scripta Mater*., **66**, 598 (2012). With P. S. Nag, D. Hill, J. Tiley, and R. Banerjee
370. "Fully ordered Sr2CrReO6 epitaxial films: A high-temperature ferrimagnetic semiconductor", *Physical Review B* **85** (2012) 161201. With A.J. Hauser, J.R. Soliz, M. Dixit, R.E.A. Williams, M.A. Susner, B. Peters, L.M. Mier, T.L. Gustafson, M.D. Sumption, P.M. Woodward and F.Y. Yang.
371. "Non-classical Homogeneous Precipitation Mediated by Compositional Fluctuations in Titanium Alloys", *Acta Mater.* **60**, 6247 (2012). With S. Nag, Y. Zheng, R. Williams, A. Devaraj, A. Boyne, Y. Wang, P.C. Collins, G.B.Viswanathan, J. S. Tiley, B. C. Muddle, and R. Banerjee.
372. "Analysis of Deformation Substructures in a Notched LCF Sample under Dwell Condition in a Ni-Based Superalloy", in Superalloys 2012 (eds E. S. Huron, R. C. Reed, M. C. Hardy, M. J. Mills, R. E. Montero, P. D. Portella and J. Telesman), John Wiley & Sons, Inc., Hoboken, NJ, USA. (pp 403-409), 2012. With Viswanathan, G.B., Bain, K., Huber, D., Jha, S., Kuhr, S., Tiley, J., and Woodward, C.
373. "The Localization of Strain in Low Solvus High Refractory (LSHR) Nickel Superalloy", in Superalloys 2012 (eds E. S. Huron, R. C. Reed, M. C. Hardy, M. J. Mills, R. E. Montero, P. D. Portella and J. Telesman), John Wiley & Sons, Inc., Hoboken, NJ, USA. (pp 103-110), 2012. With Kuhr, S.J., Viswanathan, G.B., and Tiley, J.
374. "Contribution of thermally scattered electrons to atomic resolution elemental maps" (2012) Phys. Rev. B 86, 024108. With B. D. Forbes, A. J. D'Alfonso, R. E. A. Williams, R. Srinivasan, D. W. McComb, B. Freitag, D. O. Klenov, and L. J. Allen
375. "Size-affected single-slip behavior of Rene N5 microcrystals." *Materials science & engineering. A, Structural materials: properties, microstructure and processing* 535, 53-61, 2012. With Shade, P. A., M. D. Uchic, D. M. Dimiduk, G. B. Viswanathan, and R. Wheeler.
376. The Influence of Precipitation of Alpha2 on Properties and Microstructure in TIMETAL 6-4**,** Met. Trans A, **44**, 1706. With Z. Wu, C. Qiu, V.Venkatesh, R. E. A. Williams, G. B. Viswanathan, M. Thomas, S. Nag, R. Banerjee, and M. H. Loretto.
377. "Mechanisms Related to Different Generations of γ' Precipitation During Continuous Cooling of a Nickel Base Superalloy", *Acta Mater.* **61**, 280 (2013). With A. R. P. Singh, S. Nag, S. Chattopadhyay, Y. Ren, J. Tiley, G. B. Viswanathan, and, R. Banerjee.
378. "The impact of culture medium on the development and physiology of biofilms of pseudomonas fluorescens formed on polyurethane paint", Biofouling: J. Bioadhesion & Biofilm Research,

http://dx.doi.org/10.1080/08927014.2013.783906, 2013. With W. J. Crookes-Goodson, C. L. Bojanowski, M. L. Kay, P. F. Lloyd, A. Blankemeier, J. M. Hurtubise, K. M. Singh, D. E. Barlow, H. D. Ladouceur, D. M. Eby, G. R. Johnson, P. A. Mirau, P. E. Pehrsson, and J. N. Russell Jr.

379. "Microstructure and mechanical properties of titanium aluminide compositions containing Fe", *Mater. Sci. Eng. A*, **575** (2013) 152-159. With C.J. Bettles, S. Tochon, M.A. Gibson, and B.A. Welk
380. "Neural Networks Relating Alloy Composition, Microstructure, and Tensile Properties of α/β-Processed TIMETAL 6-4", *Metallurgical and Materials Transactions A* 44, no. 3,1441-1453, 2013. With Collins, Peter C., Santhosh Koduri, Brian Welk, and Jaimie Tiley
381. "Nature of the interfaces between the constituent phases in the high entropy alloy CoCrCuFeNiAl", Ultramicroscopy, **134**, 193-199 2013. With Brian Welk, Robert Williams, Gopal Viswanathan, Mark Gibson and Peter Liaw.
382. "Phase selection in a laser surface melted Zr-Cu-Ni-Al-Nb Alloy", Met Trans B, 44B, DOI: 10.1007/s11663-013-9907-8 2013. With B. A. Welk, V. Dixit, T. Williams, and M. A. Gibson
383. "Buffer-layer enhanced structural and electronic quality in ferrimagnetic Sr_2CrReO_6 epitaxial films", Appl. Phys. Lett. **103**, 042414 (2013). With J. M. Lucy, A. J. Hauser, H. L. Wang, J. R. Soliz, M. Dixit, R. E. A. Williams, A. Holcombe, P. Morris, D. W. McComb, P. M. Woodward, and F. Y. Yang
384. "Pseudospinodal mechanism for fine α/β microstructures in β-Ti alloys", *Acta Mater.*, **64**, 188 (2014). With A. Boyne, D. Wang, R.P. Shi, Y. Zheng, A. Behera, S. Nag, J.S. Tiley, R. Banerjee, and Y. Wang
385. "Laser deposited in situ TiC reinforced nickel matrix composites: 3D microstructure and tribological properties", *JOM* 66(6), 935 (2014). With T. Borkar, J. Sosa, J. Y. Hwang, T. W. Scharf, J. Tiley, and R. Banerjee.
386. "Development and application of MIPAR™: a novel software package for two- and three-dimensional microstructural characterization", *Integrating Materials and Manufacturing Innovation*, 2014, 3:10. With J.M. Sosa, D.E. Huber, and B. Welk.
387. "Integrated Computational Materials Engineering (ICME) Approach to Design of Novel Microstructures for Ti-Alloys", Journal of Metals (JOM), **66**(7), 1287-1298, 2014 With Dong Wang, Rongpei Shi, Yufeng Zheng, Rajarshi Banerjee, and Yunzhi Wang
388. "Cation non-stoichiometry in pulsed laser deposited $Sr_{2+y}Fe_{1+x}Mo_{1-x}O_6$ epitaxial films", J. Appl. Phys. 116, 013905 (2014); http://dx.doi.org/10.1063/1.4885450. With T. L. Meyer, M. Dixit, R. E. A. Williams, M. A. Susner, D. W. McComb, M. D. Sumption, T. R. Lemberger and P. M. Woodward
389. "Variant selection of grain boundary α by special prior β grain boundaries in titanium alloys", Acta Materialia, 75: 156-166 (2014). With Shi R, Dixit V, Wang Y.
390. "Conjugated precipitation of twin-related α and Ti_2Cu phase in a Ti-25V-3Cu Alloy", Acta Materialia, 84: 457-471, (2015). With Ng HP, Nandwana P, Devaraj A, Semblanet M, Nag S, Nakashima P, Meher S, Bettles CJ, Gibson MA, Muddle BC, and Banerjee R.
391. "Discovery via integration of experimentation and modeling: Three examples for titanium alloys", JOM 67(1): 164-178 (2015). With Liu Y, Samimi P, Ghamarian I, Brice D, Huber D, Wang Z, Dixit V, Koduri S, and Collins P.
392. "The Potential Link Between High Angle Grain Boundary Morphology and Grain Boundary Deformation in a Nickel-based Superalloy", Materials Science & Engineering A, (2015), pp. 280-286. With J. Carter, J. M. Sosa, P. A. Shade, M. D. Uchic, and M. J. Mills.
393. "Characterization of silicide phases formed during pack siliconizing coating on the Nb-1Zr-0.1C alloy", Intermetallics, **63**, 59-66, 2015. With B. Viswanadh, S Majumdar, J. Orsborn, R. Banerjee, R. Tewari, and G. K. Dey.
394. "Three-dimensional characterization of microstructure of high entropy alloy using STEM/HAADF tomography", Materials Science and Technology **31**, 1250-1258, 2015, with J. M. Sosa, J. K. Jensen, D. E. Huber, and M. A. Gibson.
395. "Corrosion Characteristics of High Entropy Alloys", Materials Science and Technology, 31(2015) 1235-1243 With Y. Qiu, M.A. Gibson, and N. Birbilis
396. Yufeng Zheng, Robert E.A. Williams and Hamish L. Fraser, "Characterization of a Previously Unidentified Ordered Orthorhombic Metastable Phase in Ti-5Al-5Mo-5V-3Cr", Scripta Materialia,

113, 202-205 (2015)

397. R. Shi, V. Dixit, G.B. Viswanathan, H.L. Fraser and Y. Wang, "Experimental assessment of variant selection rules for grain boundary alpha in titanium alloys", Acta Materialia, 102, (2016), 197-211.
398. Yufeng Zheng, Robert E.A. Williams, John M. Sosa, Talukder Alam, Yunzhi Wang, Rajarshi Banerjee and Hamish L. Fraser, "The Indirect Influence of the ω Phase on the Degree of Refinement of Distributions of the α Phase in Metastable β-Titanium Alloys", Acta Materialia 103(2016) 165-173
399. Yufeng Zheng, John M. Sosa, Robert E.A. Williams, Yunzhi Wang, Rajarshi Banerjee, Hamish L. Fraser, "The Role of Omega Phase in Non-Classical Homogeneous Precipitation in Titanium Alloys", Scripta Materialia 111(2016) 81-84
400. Peter C Collins, David A Brice, Peyman Samimi, Iman Ghamarian, Hamish L. Fraser, "Microstructural Control of Additively Manufactured Materials", Annual Review of Materials Research, 46, pp 63-91
401. S. Meher, G.B. Viswanathan, S. Nag, H.L. Fraser, R. Banerjee, "Determination of the gamma prime/gamma interface width in a Co-Al-W alloy via coupled aberration-corrected scanning transmission electron microscopy and atom probe tomography", Scripta Materialia, 121 (2016) 23-27.
402. J.K. Jensen, B.A. Welk, R.E.A. Williams, J.M. Sosa, D.E. Huber, O.N. Senkov, G.B. Viswanathan, and H.L. Fraser, "Characterization of the microstructure of the compositionally complex alloy $Al_1Mo_{0.5}Nb_1Ta_{0.5}Ti_1Zr_1$", Scripta Materialia, 121 (2016), 1-4.
403. Yufeng Zheng, Deep Choudhuri, Talukder Alam, Robert E.A. Williams, Rajarshi Banerjee and Hamish L. Fraser, "The role of cuboidal ω precipitates on α precipitation in a Ti-20V alloy", *Scripta Materialia*, 123 (2016) 81-85
404. Yufeng Zheng*, John M. Sosa and Hamish L. Fraser, "On the influence of athermal ω and α phase instabilities on the scale of precipitation of the α phase in metastable β-Ti alloys", *JOM*, 68(5), 1343-1349 (2016) (*Invited Paper*)
405. Yufeng Zheng, Dipankar Banerjee and Hamish L. Fraser, "A Nano-scale Instability in the β Phase of Dilute Ti-Mo Alloys", *Scripta Materialia*, 116 (2016) 131-134
406. Yufeng Zheng, Robert E.A. Williams, Soumya Nag, Rajarshi Banerjee, Hamish L. Fraser and Dipankar Banerjee, "The Effect of Alloy Composition on Instabilities in β Phase of Titanium Alloys", *Scripta Materialia,* 116 (2016) 49-52
407. Yufeng Zheng, Robert E.A. Williams, Dong Wang, Rongpei Shi, Soumya Nag, Pavani Kami, John M. Sosa, Rajarshi Banerjee, Yunzhi Wang and Hamish L. Fraser, "Role of ω Phase in the Formation of Extremely Refined Intragranular α Precipitates in Metastable β-Titanium Alloys", *Acta Materialia*, 103 (2016) 850-858
408. B. Vishwanadh, K.V. Mani Krishna, A. Upadhyay, R. Banerjee, A. Arya, R. Tewari, H.L. Fraser, G.K. Dey, "Formation Mechanism of the Nb_2C Phase in the Nb-1Zr-0.1C(wt.%) alloy and Interrelation between Gamma, Beta and Alpha-Nb_2C Carbide Phases", Acta Materialia, 108 (2016) 186-196
409. I. Ghamarian, B. Hayes, P. Samimi, B.A. Welk, H.L. Fraser, P.C. Collins, "Developing a Phenomenological Equation to Predict Yield Strength from Composition and Microstructure in Beta Processed Ti-6Al-4V", Materials Science and Engineering A, 660 (2016), 172-180
410. "A lightweight single-phase AlTiVCr compositionally complex alloy", Acta Met., 123 (2017), 115-124. With Y. Qiu, Y, Y.J. Hu, A. Taylor, M.J. Styles, R.K.W. Marceau, A.V. Ceguerra, M.A. Gibson, Z.K. Liu, and, N. Birbilis.
411. "Corrosion of high entropy alloys", npj Materials Degradation, 1(1) (2017), with Y. Qiu, S. Thomas, M.A. Gibson, and N. Birbilis
412. "Predicting Tensile Properties of Ti-6Al-4V Produced Via Directed Energy Deposition", Acta Materialia (2017) 133, 120. With Brian Hayes, Brian Martin, Brian Welk, Sam Kuhr, Thomas Ales, David Brice, Iman Ghamarian, Andrew Baker, Christina V Haden, Gary Harlow, Peter C Collins.
413. "Exceptional increase in the creep life of magnesium rare-earth alloys due to localized bond stiffening", *Nature Communications* **volume 8**, Article number: 2000 (2017), doi:10.1038/s41467-017-02112-z, 2017, with D. Choudhuri, S.G. Sinivasan, M.A. Gibson, Y. Zheng, D.L. Jaeger, and R.

Banerjee.

414. "A Small Spot, Inert Gas, Ion Milling Process as a Complementary Technique to Focused Ion Beam Specimen Preparation", Microscopy and Microanalysis, Volume 23, August 2017, pp. 782-793 With P. Fischione, R. Williams, and A. Genç
415. "Compositional variation effects on the microstructure and properties of a refractory high-entropy superalloy AlMo0.5NbTa0.5TiZr", Materials and Design 139 (2018) 498–511, O.N. Senkov, J.K.Jensen, A.L.Pilchak, and D.B.Miracle
416. "Understanding the Interdependencies Between Composition, Microstructure, and Continuum Variables and Their Influence on the Fracture Toughness of α/β-Processed Ti-6Al-4V." Metallurgical and Materials Transactions A 49, no. 3 (2018): 848-863. With P. Collins, S. Koduri, and V. Dixit
417. "Tuning the scale of alpha precipitates in beta-Ti alloys for achieving high strength", *Scripta Mater*., **154**, 139 (2018), with S.A. Mantri, D. Choudhuri, T. Alam, G.B. Viswanathan, J.M. Sosa, and R. Banerjee
418. "Crystallographic features of the Al_3Nb, Nb_2Al and $Nb(Ni_{1-X}Al_X)_2$ phases in a directionally solidified ternary eutectic microstructure", Materials Characterization 147 (2019) 303–310. With É. S. N. Lopes, M. R. Dal, Bó, V. C. Opini, M. G. de Mello, C. T. Rios, Rubens Caram
419. "Investigation of a Nano-scale, Incommensurate, Modulated Domain in a Ti-Fe Alloy", Scripta Materialia, 154 (2018) 220-224, with Yufeng Zheng, and Daniel Huber
420. "The Influence of Aluminum and Oxygen Additions on Intrinsic Structural Instabilities in Titanium-Molybdenum Alloys, Scripta Materialia", 152 (2018) 150-153, with Yufeng Zheng, Talukder Alam, Rajarshi Banerjee, and Dipankar Banerjee.
421. "Determination of the Structure of α-β Interfaces in Metastable β-Ti Alloys, Acta Materialia, 150 (2018) 25-39, with Yufeng Zheng, Robert E.A. Williams, Gopal B. Viswanathan, and William A. T. Clark.
422. "Microstructure and corrosion properties of the low-density single-phase Compositionally Complex Alloy AlTiVCr", Corrosion Science, 133, 2018, 386-396. With Y. Qiu, Katharina Pohl, M. Gibson, and N. Birbilis
423. "Understanding the Interdependencies Between Composition, Microstructure, and Continuum Variables and Their Influence on the Fracture Toughness of α/β-Processed Ti-6Al-4V." Metallurgical and Materials Transactions A 49, no. 3 (2018): 848-863. With P. Collins, S. Koduri, and V. Dixit
424. "Tuning the scale of alpha precipitates in beta-titanium alloys for achieving high strength", Scripta Materialia, 154 (2018) 139-144. With S.A. Mantri, D. Choudhuri, T. Alam, G.B. Viswanathan, J.M. Sosa, R. Banerjee
425. "Investigation of a nano-scale, incommensurate, modulated domain in a Ti-Fe alloy", Scripta Materialia, 154 (2018) 220-224. With Y. Zheng, D. Huber
426. "Detailed investigation of core-shell precipitates in a Cu-containing high entropy alloy", JOM (2018) 70: 1771. https://doi.org/10.1007/s11837-018-2935-8. With Alam, T., Gwalani, B., Viswanathan, G., R. Banerjee
427. "Crystallographic features of the Al_3Nb, Nb_2Al and $Nb(Ni_{1-X}Al_X)_2$ phases in a directionally solidified ternary eutectic microstructure", Materials Characterization 147 (2019) 303–310. With É. S. N. Lopes, M. R. Dal, Bó, V. C. Opini, M. G. de Mello, C. T. Rios, Rubens Caram
428. "Characterization of the interfacial structure of coarse alpha precipitates in a beta-ti alloy Ti-5Al-5Mo-5V-3Cr", JOM (2019) http://doi.org/10.1007/s11837-019-03441-8. With Y. Zheng, W.A.T. Clark
429. "Microstructural evolution, electrochemical and corrosion properties of AlxCoCrFeNiTiy high entropy alloys", Mater. Des., 170 (2019) 107698. With Y. Qiu, S. Thomas, D. Fabijanic, A.J. Barlow, N. Birbilis
430. "Additive manufacturing of ultrafine-grained high-strength titanium alloys", *Nature,* 2019, vol. 576, pp. 91–95. With D. Zhang, D. Qui, M. Gibson, Y. Zheng, D. StJohn and M. Easton
431. "The influence of heat treatment on the microstructure and properties of HIPped Ti-6Al-4V", Acta Mater, 165 (2019) 520-527. With Y. Lu, M. Aristizabal, X. Wang, B. Pang, Y.L. Chiu, Z.T. Kloenne, M.H. Loretto
432. "Nano-scale structural non-uniformities in gum like Ti-24Nb-4Zr-8Sn metastable beta-Ti alloy",

Scripta Materialia, 158 (2019) 95-99. With Q. Liang, Y. Zheng, D. Wang, Y. Hao, R. Yang, Y. Wang

433. "Interface characteristics in an α + β titanium alloy", Physical Review Materials 4, 013602 (2020), with A. Ackerman, V. Vorontsov, I. Bantounas, Y.Zheng, Y. Chang, T. McAuliffe , W. Clark , B. Gault, D. Rugg, and D. Dye
434. "Real-Time Dissolution of a compositionally complex alloy using inline ICP and correlation with XPS", *npj Mater Degrad* **4,** 7 (2020). https://doi.org/10.1038/s41529-020-0112-3, With Y. Qiu, R. Liu, T. Gegenbach, O. Gharbi, S. Choudhary, S. Thomas, N. Birbilis
435. "Intrinsic Coupling Between Twinning Plasticity and Transformation Plasticity in β Titanium Alloys: a Symmetry and Pathway Analysis", *Acta Materialia,* 196 (2020) 488-504, DOI: 10.1016/j.actamat.2020.07.020. With Yipeng Gao, Yufeng Zheng, and Yunzhi Wang
436. "Refining Prior-β Grains of Ti-6Al-4V Alloy Through Yttrium Addition", *Journal of Alloys and Compounds*, 841 (2020) 155733, DOI: 10.1016/j.jallcom.2020.155733. Wioth Duyao Zhang, Dong Qiu, Mark A. Gibson, Yufeng Zheng, Arvind Prasad, David StJohn, and Mark A. Easton
437. "Plasticity Assisted Redistribution of Solutes Leading to Topological Inversion during Creep of Superalloys", *Scripta Materialia,* 186 (2020) 287-292, DOI: 10.1016/j.scriptamat.2020.05.004. With Stoichko Antonov, Yufeng Zheng, John M. Sosa, Jonathan Cormier, Paraskevas Kontis, and Baptiste Gault
438. "Atomic Structure and Segregation Behavior of Creep Defects in a Co-Al-W-based Single Crystal Superalloys under High Temperature and Low Stress", *Acta Materialia*, 190 (2020) 16-28. DOI: 10.1016/j.actamat.2020.03.015. With Song Lu, Stoichko Antonov, Longfei Li, Chengpeng Liu, Xiaona Zhang, Yufeng Zheng, and Qiang Feng
439. "Novel Deformation Twinning System in a Cold Rolled High-strength Metastable- β Ti-5Al-5Mo-5V-3Cr Alloy", *Materialia*, 9 (2020) 100614. DOI: 10.1016/j.mtla.2020.100614. With Stoichko Antonov, Zachary Kloenne, Yipeng Gao, Dong Wang, Yunzhi Wang, Qiang Feng, and Yufeng Zheng
440. "Shuffle-nanodomain Regulated Strain Glass Transition in Ti-24Nb-4Zr-8Sn Alloy", *Acta Materialia*, 186 (2020) 415-424. DOI: 10.1016/j.actamat.2019.12.056. With Qianglong Liang, Dong Wang, Yufeng Zheng, Shuangshuang Shao, Yulin Hao, Rui Yang, Dipankar Banerjee, and Yunzhi Wang
441. "Interface Characteristics in an α+β Titanium Alloy, *Physical Review Materials*, 4, 013602 (2020). DOI: 10.1103/PhysRevMaterials.4.013602. With Abigail K. Ackerman, Vassili A. Vorontsov, Ioannis Bantounas, Yufeng Zheng, Yanhong Chang, Thomas McAuliffe, William A. Clark, Baptiste Gault, David Rugg, and David Dye
442. "Exploration of Novel Ordering Mechanism in Titanium Alloys Using Atom Probe Tomography and Aberration-corrected Scanning Transmission Electron Microscopy", Microscopy and Microanalysis, **26**, 2078, (2020), doi:10.1017/S143192762002036X, with Yufeng Zheng and Stoichko Antonov
443. "Interface and colony boundary sliding as a deformation mechanism in a novel titanium alloy", Scripta Materialia, 178, 15 March 2020, Pages 418-421, (2020), with Zachary Koenne, Gopal Viswanathan, Stephen Fox, Michael Loretto
444. "The Role of Nano-scaled Structural Non-uniformities on Deformation Twinning and Stress-induced Transformation in a Cold Rolled Multifunctional β-Titanium Alloy", *Scripta Materialia,* 177 (2020) 181-185. DOI: 10.1016/j.scriptamat.2019.10.029. With Qianglong Liang, Zachary Kloenne, Yufeng Zheng, Dong Wang, Stoichko Antonov, Yipeng Gao, Yulin Hao, Rui Yang, and Yunzhi Wang
445. "Shuffle-induced Modulated Structure and Heating-induced Ordering in the Metastable β-Titanium Alloy, Ti-5Al-5Mo-5V-3Cr", *Scripta Materialia,* 176 (2020) 7-11. DOI: 10.1016/j.scriptamat.2019.09. 027. With Yufeng Zheng, Stoichko Antonov, Qiang Feng, Rajarshi Banerjee, and Dipankar Banerjee
446. "Optimizing image contrast of second phases in metal alloys", Ultramicroscopy, **228**, 113346, DOI:10.1016/j.ultramic.2021.113346 (2021), with Benjamin M.Georgin, Gopal B.Viswanathan, Brian A.Welk, Zachary T.Kloenne.
447. "Use of Alloying to Effect an Equiaxed Microstructure in Additive Manufacturing and Subsequent Heat Treatment of High-Strength Titanium Alloys" *Metallurgical and Materials Transactions A* volume 52, pages5367–5380 (2021), with Brian Welk, Nevin Taylor, Zachary Kloenne, Kevin Chaput, Stephen Fox

448. “Phase-field modelling of transformation pathways and microstructural evolution in multi-principal element alloys”, Appl. Phys. Lett. 119, 171905, (2021), doi.org/10.1063/5.0065522, with Kamalnath Kadirvel, Zachary Kloenne, Jacob K. Jensen, Yunzhi Wang.
449. “High temperature phase stability of the compositionally complex alloy AlMo0.5NbTa0.5TiZr”, Appl. Phys. Lett. 119, 151903 (2021); https://doi.org/10.1063/5.0069497, with Zachary T. Kloenne, Kamalnath Kadirvel, Jean-Philippe Couzinie, Gopal Viswanathan, and Yunzhi Wang.
450. “Precipitation in Nanostructured Metals: a Review”, *MRS Bulletin* (2021), DOI:10.1557/s43577-021-00066-8. With Kaka Ma, Yufeng Zheng, Sriswaroop Dasari, Dalong Zhang, and Rajarshi Banerjee
451. “Fine Scale α Precipitation in Ti-19at%V in the Absence of Influence from ω Precipitates”, *Scripta Materialia,* 196 (2021) 113766, DOI: 10.1016/j.scriptamat.2020.113766. With Abhishek Sharma, Vishal Soni, Sriswaroop Dasari, Srinivas Mantri, Yufeng Zheng, and Rajarshi Banerjee
452. “Nucleation and Growth of α Phase in a Metastable β-Titanium Ti-5Al-5Mo-5V-3Cr Alloy: Influence from the Nano-scale, ordered-orthorhombic O″ Phase and α Compositional Evolution”, *Scripta Materialia*, 194 (2021) 113672, DOI: 10.1016/j.scriptamat.2020.113672. With Stoichko Antonov, Rongpei Shi, Dian Li, Zachary Kloenne, Yufeng Zheng, Dierk Raabe, and Baptiste Gault
453. Precipitation in nanostructured alloys: A brief review. *MRS Bulletin* (2021): 1-8.. With Ma Kaka, Yufeng Zheng, Sriswaroop Dasari, Dalong Zhang, and Rajarshi Banerjee.
454. "Critical review of the state of the art in multi-material fabrication via directed energy deposition." *Current Opinion in Solid State and Materials Science* 25, no. 4 (2021): 100924. With D.R. Feenstra, R. Banerjee, A. Huang, A. Molotnikov, and N. Birbilis.
455. “Grain boundary segregation and its implications regarding the formation of the grain boundary α phase in the metastable β-Titanium Ti–5Al–5Mo–5V–3Cr alloy”, Scripta materialia, **207**, 114320, DOI: 10.1016/j.scriptamat.2021.114320, (2022), with T.S. Prithiv, Zahcary Kloenne, Dian Li, Rongpei Shi, Yufeng Zheng, Baptiste Gault, and Stoichko Antonov
456. “A Deep Learning Approach for Semantic Segmentation of Unbalanced Data in Electron Tomography of Catalytic Materials”, arXiv preprint arXiv:2201.07342, (2022) - arxiv.org, with A Genc, L Kovarik
457. “Pathways to Titanium Martensite”, *Trans Indian Inst Met* (2022), https://doi.org/10.1007/s12666-022-02559-9. (2022) With Zheng, Y., Banerjee, R., Wang, Y., and D. Banerjee
458. Concomitant clustering and ordering leading to B2+ BCC microstructures in refractory high entropy alloys. *Transactions of the Indian Institute of Metals* 75, no. 4 (2022): 907-916. With Dasari, S., V. Soni, A. Sharma, O. N. Senkov, D. B. Miracle, Y. Wang, and R. Banerjee.
459. Crystallographic and Compositional Evolution of Ordered B2 and Disordered BCC Phases During Isothermal Annealing of Refractory High-Entropy Alloys, *Microscopy and Microanalysis* (2022): 1-11. With Dasari, Sriswaroop, Abhishek Sharma, Vishal Soni, Zachary Kloenne, and Rajarshi Banerjee.
460. On the *bcc*/B2 interface structure in a refractory high entropy alloy, Scripta Materialia, Vol. 223, 2023, 115071. With Zachary T. Kloenne [a], Jean-Philippe Couzinié, Milan Heczko, Roman Gröger, Gopal B. Viswanathan, and William A. T. Clark
461. Underlying factors determining grain morphologies in high-strength titanium alloys processed by additive manufacturing, Nature Communications, 14, no. 1, 2023: 3288. With Mohan Nartu, Brian Welk, Srinivas Mantri, Nevin Taylor, Gopal Viswanathan, Narendra Dahotre, and Rajarshi Banerjee
462. Role of aluminum rejection from isothermal ω precipitates on the formation of α precipitates in the metastable β-Titanium alloy Ti-10V-2Fe-3Al, Scripta Materialia, 234 (2023) 115565, DOI:10.1016/j.scriptamat.2023.115565. With S. Mantri, A. Desari, A. Sharma, Yufeng Zheng, and Rajarshi Banerjee.
463. B2 to ordered omega transformation during isothermal annealing of refractory high entropy alloys: implications for high temperature phase stability, Journal of Alloys and Compounds, 953 (2023), 170065.
464. Unique Yttria Nanoparticle Strengthening in an Inconel 718 Superalloy Fabricated by Additive Manufacturing, Adv. Mater. Technol. 2023, 2301421 DOI: 10.1002/admt.202301421. With Shengbin Dai, Jiangqi Zhu, Xingchen Yan, Shun Wu, Yang Liu, Xiang Gao, Peter Hodgson, Yuman Zhu,* Martin Heilmaier,* and Aijun Huang

INVITED PRESENTATIONS

1. "A Comparison of scanning Transmission Electron Microscopy and High Voltage Electron Microscopy", Argonne National Laboratories, May 1974
2. "Glide and Climb of Dislocations in NiAl", Rockwell International Science Center, Thousand Oaks, CA, February 1975.
3. "Hydride Precipitation in Refractory Metals", Carnegie-Mellon University, September 1975.
4. "Analytical Electron Microscopy", Stanford University, June 1976.
5. "Computer Simulation of Defect Images Using the Scanning Transmission Electron Microscopy," ITTRI/SEM, June 1976, Toronto.
6. "Imaging and Elemental Analysis of Defect Structures in STEM," 6th European Congress on Electron Microscopy, Jerusalem, Israel, September 1976.
7. "Analytical Electron Microscopy", Westinghouse Research Laboratories, Pittsburgh, PA, December 1976.
8. "Analytical Electron Microscopy," AIME Winter Meeting in Atlanta, Georgia, March 1977.
9. "Recent Advance in Analytical Electron Microscopy," 14th Annual Electron Microscopy Colloquim, Ames Lab , Iowa State University, May 1977.
10. "Microstructural Observations of Metal Powders Using Analytical Electron Microscopy," International Conference on "Rapid Solidification Processing Principles and Technologies," Reston, VA, November 1977.
11. "Analytical Electron Microscopy," Carnegie-Mellon University, April 1978.
12. "STEM and Its Application to Materials Science", Batelle Pacific Northwest Laboratories, June 1978.
13. "Analytical Electron Microscopy in Materials Science", Watson Research Center, IBM, Yorktown Heights, NY, September 1978.
14. "Applications of STEM to Materials Science", General Electric Corporate Research and Development Center, Schenectady, NY, September 1978.
15. "Analytical Electron Microscopy in Materials Science ", United Technologies Research Center, East Hartford, CT, November 1978.
16. "Analytical Transmission Electron Microscopy on the 10nm Scale." The 6th Australian Conference on Electron Microscopy, Monash University, Clayton, Vic., Australia, February 1980.
17. "Microstructural Analysis of Rapidly Solidified Superalloy Powder," second conference on Rapid Solidification Processing, Principles and Technologies, Reston, VA, March 1980.
18. "Applications of STEM to Materials Science," Connecticut Section of AIME, Wallingford, CT, April 1980.
19. "Analytical Transmission Electron Microscopy in Material Science," *Plenary Lecture*, 5th International Symposium on "High Purity Materials in Science and Technology," Dresden, DDR, May 1980.
20. "Analytical Transmission Electron Microscopy in Mineral Processing," Ann. Meeting of AIME, Chicago, 1981.
21. "Analytical Electron Microscopy in RSP," DARPA Materials Research Council Meeting on Rapid Solidification Technology, La Jolla, CA, 1981.
22. "Rapid Solidification Processing", Sangamon Valley Chapter of ASM, Decatur, IL,Nov. 1981.
23. "Quantitative Microchemical Analysis in AEM With and Without the Use of Standards," SEM/82, Anaheim, CA, April 1982.
24. "Microstructural Observations of Rapid Solidified Materials", NASA Lewis Research Center, Cleveland, OH, May 1982.
25. "Specimen Preparation Limitations in Quantitative Thin Foil Microanalysis," EMSA/MAS Meeting, Washington, DC, August 1982.
26. "Substitution for Chromium in Ni-base Superalloys using RSP", COSAM Workshop, NASA Lewis Research Center, Cleveland, OH, October 1982.

27. "Microstructural Characterization of Rapidly Solidified Materials," 3rd Conf. on RSP: Principles and Technologies, NBS, Gaithersburg, MD, December 1982. With J.B. Vander Sande.
28. "The Application of Convergent Beam Electron Diffraction to the Studies of Ni-base Alloys," Joint French-Belgian Electron Microscopy Societies Annual Meeting, Liege, Belgium, May 1983.
29. " Rapid Solidification Processing", General Motors Research Laboratories, Troy, MI, October 1983.
30. "Energy Dispersive X-ray Spectroscopy in Thin Foils," Workshop on AEM, Monash University, Clayton, Vic., Australia, May 1984.
31. "Rapid Solidification of Aerospace Materials", Aeronautical Research Laboratories, Melbourne, Australia, May 1984.
32. "Rapid Solidification Processing", Office National d'Etude et de Recherches Aerospatiale, Paris, France, NATO consultant mission, May 1984.
33. Four Seminars at ONERA, Paris, On RSP of Ti alloys, Al alloys, Ni-base Superalloys and Materials Processing Techniques, May 1984.
34. "Rapidly Solidified Ti Alloys", Max Planck Institut für Metallforschung, Institut für Werkstoffwissenshaften, Stuttgart, FRG, May 1984.
35. "Microstructures and Morphologies of Rapidly Solidified Particulate," AIME Ann. Meeting, New York City, Feb. 1985.
36. "Identification of Metastable Phases Using Convergent Beam Electron Diffraction," Electron Microscopy Society of America, Ann. Meeting, Louisville, KY, August 1985.
37. "Intermediate Voltage Electron Microscopy," Electron Microscopy Society of America, Ann. Meeting, Louisville, KY, August 1985
38. "Rapid Solidification and Processing of Powders," Int. Conf. on Al Alloys, June 1986, Charlottesville, VA.
39. "Microstructural Characterization of RSP Materials," 4th Conference on Rapid Solidification Processing: Principles and Technologies, December 1986, Santa Barbara, CA.
40. "Rapid Solidification Procesing of Ti Alloys", ALCOA Research Center, Feb. 1987.
41. "Rapid Solidification of Ti-Aluminides", Dept. of Metallurgy, University of Wisconsin (Madison), April 1987.
42. "Convergent Beam Electron Diffraction at Intermediate Voltages", Microbeam Analysis Soc. Ann. Meeting, Hawaii, July, 1987.
43. "The Physical Metallurgy of Ti-Aluminides", ALCOA Centenary Symposium, August 1987.
44. "Lattice Strain and Lattice Parameter Measurements in the Transmission Electron Microscope", ASM-AIME Fall Meeting, Cincinnati, OH, October 1987
45. "Relationsip between Processing, Microstructure and Properties of Ti_3Al", Los Alamos National Lab., Jan. 1988
46. "Applications of Convergent Beam Electron Diffraction in Materials Science", Max-Planck Institut für Metallforschung, Institut für Werkstoffwissenschaften, Stuttgart, BRD, March, 1988
47. "Rapid Solidification of Al and Mg Alloys", Max-Planck Institut für Metallforschung, Institut für Werkstoffwissenschaften, Stuttgart, BRD, February, 1988. 18th., March (3rd. and 9th.), 1988
48. "Processing and Properties of Ti-Aluminides", Max-Planck Institut für Metallforschung, Institut für Werkstoffwissenschaften, Stuttgart, BRD, March, 1988.
49. "Rapid Solidification Processing of Al, Mg and Ti Alloys", Centre de Recherche et Developpement de Voreppe, Cegedur Pechiney, Pechiney Aluminium, Voreppe, France, April, 1988.
50. "Phase Transformations in Ti Alloys", 6th. World Conference on Ti Alloys, Cannes, France, July 1988. With N.Paton.
51. "The Relevance of Local Lattice Parameter Measurements using CBED", EMSA/MAS Annual Meeting, Milwaukee, WI, August 1988
52. "Rapid Solidification", 9th. European Congress on Electron Microscopy, York, England, Sept. 1988
53. "Deformation Mechanisms in Ti_3Al and TiAl", 1988 Titanium Aluminides Meeting, AFWAL/Wright-Patterson AFB, Stratford, CT (Textron-Lycoming) November, 1988

54. "Deformation of Titanium Aluminides: A Question of Bonding", University of Liverpool, Liverpool, UK, November, 1988
55. "Deformation of Titanium Aluminides and the Influence of Covalent Bonding", University of Birmingham, Birmingham, UK, November, 1988
56. "Deformation of Titanium Aluminides: A Question of Bonding", Max-Planck Institut für Metallforschung, Institut für Werkstoffwissenschaften, Stuttgart, BRD, presented in December, 1988.
57. "Processing and Deformation Mechanisms of Nb Aluminides", High Temperature Materials Workshop, AFWAL, Materials Laboratory, Dayton, OH, December, 1988
58. "Processing and Deformation Behavior of Ti Aluminides", Department of Materials Science & Engineering, University of Cincinnati, Cincinnati, OH, Feb. 1989
59. "Deformation Mechanisms and Ductility of Ti Aluminides", Department of Chemical Engineering & Materials Sciences, University of Minnesota, Minneapolis, MN, Feb. 1989
60. "Characterisation of Metastable Microstructures", Indo-US Workshop on Metastable Microstructures, to be held in Goa, India, March 1989
61. "Microdiffraction Studies in Materials Science Applications", Los Alamos National Laboratory, Los Alamos, NM, March 1989
62. "Deformation Mechanisms in Ti Aluminides", Defence Metallurgical Research Laboratories, Hyderabad, India, to be presented in April 1989
63. "Deformation of Titanium Aluminides: A Question of Bonding", University of Florida, Gainesville, FL, April, 1989
64. "The Influence of Covalent Bonding on the Deformation Mechanisms and Ductilities of Ti-Aluminides", ASM Pacific Northwest Materials Conference, Seattle, WA, May 1989
65. "Deformation Mechanisms in the Intermetallic Compounds Ti_3Al and TiAl", University of Washington, Seattle, WA, May 1989
66. "Deformation Mechanisms and Ductility of Ti-Aluminides", The Ohio State University, Columbus, OH, May, 1989
67. "The Limits of Strain and Lattice Parameter Measurements by CBED", 47th. Ann. Meeting of EMSA, San Antonio, August 1989
68. "Determination of Covalency and Its Effect on the Deformation Mechanisms in Intermetallic Compounds", 47th. Ann. Meeting of EMSA, San Antonio, August 1989
69. "The Influence of Covalent Bonding on the Deformation Mechanisms and Ductilities of Ti-Aluminides", University of Cincinnati, Cincinnati, OH, September 1989
70. "Deformation Mechanisms in High temperature Intermetallic Compounds", Case Western Reserve University, Cleveland OH, September 1989
71. "Deformation Mechanisms in the Intermetallic Compounds TiAl and Ti_3Al", University of Liverpool, UK, November 1989
72. "The Influence of Covalent Bonding on the Deformation Mechanisms and Ductilities of Ti-Aluminides", University of Birmingham, UK, November 1989
73. "Deformation Mechanisms in the Ti Aluminides", Alcan Banbury Laboratories, Banbury, UK, December 1989
74. "The Influence of Covalent Bonding on the Deformation Mechanisms of Ti-Aluminides", Department of Physics, The Ohio State University, Columbus OH, February 1990
75. "The Influence of Covalent Bonding on the Deformation Mechanisms and Ductilities of Ti-Aluminides", Detroit Chapter of TMS, February 1990
76. "Deformation Mechanisms in Ti Aluminides", Symposium at ONERA, Paris, June 1990
77. "Factors Influencing the Deformation of Al_3Ti", Symposium at ONERA, Paris, June 1990
78. "The Influence of Covalent Bonding on the Deformation Mechanisms and Ductilities of Ti-Aluminides", Mitsubishi Materials Corp. Research Lab., Saitama, Japan, December 1990

79. "The Influence of Covalent Bonding on the Deformation Mechanisms and Ductilities of Ti-Aluminides", Columbus Chapter of ASM, January 1991
80. "The Influence of Covalent Bonding on the Deformation Mechanisms of Ti-Aluminides", Argonne National Lab., January 1991
81. "Characterization of Microcomposites and Nanophase Materials", ASM-AIME Spring Meeting, New Orleans, LA, February 1991
82. "Recent Advances in High Temperature Materials", Ohio Academy of Sciences, Columbus, OH, April 1991
83. "Applications of Convergent Beam Electron Diffraction in Materials Science", EMSORV/EMSA Meeting, Cincinnati, OH, May 1991
84. "Processing, Microstructure, Properties and Performance of Ti, Fe and Nb Aluminide Intermetallic Compounds", Euromat-91, Cambridge, UK, July 1991
85. "Charge Densities and Their Effect on Ductility Ti-Aluminides", TMS Fall Meeting, Cincinnati, OH, October 1991
86. "Ductility in Intermetallics: Deformation Mechanisms in Ti and Nb Aluminides", Department of Materials Science and Engineering, University of Cambridge, November 1991
87. "Ductility in Intermetallics: Deformation Mechanisms in Ti and Nb Aluminides", Department of Materials Engineering, Purdue University, November 1991
88. "Interface Studies in Intermetallic Matrix Composites", MRS Fall Meeting, Boston, MA, December 1991
89. "Microstructure and Fracture in Intermetallic Compounds", Gordon Conference, August 1992
90. "Structural Aspects of Intermetallic Compounds", IRC Conference on Advanced Materials, Birmingham, UK, September, 1992
91. "Transformation of Ti_3Al to TiAl in Ti-rich Ti-Al Alloys", PacRim Conference on Phase Transformations, Kona, HA, December 1992
92. "Ductility in Intermetallics: Deformation Mechanisms in Ti and Nb Aluminides", US-Korea Symposium on Advanced Materials, Seoul, Korea, December, 1992
93. “On the Experimental Determination of Low Order Structure Factors in Intermetallic TiAl by Energy Filtered Convergent Beam Electron Diffraction”, (Invited), 1993, Proc. 51st Annual meeting of the Microscopy Society of America (MSA), Eds.: G. W. Bailey and C. L. Rieder, p.662. With S. Swaminathan, I. P. Jones, N. J. Zaluzec, and D. M. Maher
94. “Measurement of Low Order Structure Factors in the Intermetallic Compound TiAl using the Quantitative CBED method”, (Invited), 1993, Edrs.: J. T. Armstrong, and J. R. Porter, Proceedings of 27th Annual Microbeam Analysis Society (MAS) meeting, p. s218. With S. Swaminathan, I. P. Jones, N. J. Zaluzec, and D. M. Maher
95. "Deformation Mechanisms in Ti and Nb Aluminides", Department of Materials Science and Engineering, North Carolina State University, Raleigh, NC, April 1993
96. "Development of a Co-Continuous ceramic Composite", ONR/ARPA Annual Meeting on Advanced Composites, Woods Hole, MA, June 1993
97. "Microstructure and Properties of an Al_2O_3 Co-Continuous Composite", ONR/ARPA Annual Meeting on Advanced Composites, Woods Hole, MA, June 1994
98. "Processing and Microstructural Development of Co-Continuous Ceramic Composites", University of Birmingham, Birmingham, UK. Dec. 1994
99. "Microstructure and Properties of Nb Aluminides", Cornell University, March 1995
100. "A Novel Intermetallic Compound and an Innovative Ceramic-based Composite", University of Göttingen, Göttingen, Germany, March 1995
101. "Microstructure and Properties of a New Set of Intermetallic Compounds based on the Nb Aluminides", Joint European Laboratory, Ispra, Italy, March 1995
102. "Materials Technology in the USA", University of Birmigham, April 1995

103. "Development of Nb-Based B2 Alloys for High Temperature Applications," TMS Fall Meeting, Cleveland, OH, October 1995
104. "Processing and Microstructure/Property Relationships in NbAlTi Intermetallic Compounds," TMS Fall Meeting, Cleveland, OH, October 1995
105. "Processing and Properties of Co-Continuous Ceramic Composites," TMS Fall Meeting, Cleveland, OH, October 1995
106. "Factors Affecting Ductility in Nb-based Aluminides", Internationaal Symposium on Advanced Materials and Technology for the 21st Century, 117th meeting of the Japan Institute of Metals, Honolulu, December 1995
107. "Ductile Nb Aluminide Intermetallic Compounds for High Temperature Applications", Annual Meeting of the German Physical Society, Regensburg, March 1996
108. "Novel Nb Aluminides for Elevated Temperature Applications", Lehigh University, April 1996.
109. "Development of a New Series of Nb Aluminides for Elevated Temperature Applications", Symposium on Processing & Design Issues in High Temperature Materials, Davos, Switzerland, May 1996
110. "Determination of accurate low order structure factors in TiAl and (and Si) using energy filtered CBED" Fifteenth Pfefferkorn conference on Electron Image and Signal Processing, May 18-22, 1996, Silver Bay, New York.
111. "Debye-Waller Factors and Sublattice ordering in TiAl", International Union of Crystallography, XVII Congress and General Assembly, August 1996, Seattle, WA.
112. "The Effect of Solute Elements on the Crystallization of Amorphous Alloys based on TiAl", in Symposium "Kinetically Determined Particle Shapes and the Dynamics of Solid:Solid Interfaces", ASM Fall Meeting, Cincinnati, OH, October 1996
113. "Factors Affecting Ductility in Ordered Nb Aluminides Intermetallic Compounds", TMS Fall Meeting, Cincinnati, OH, October 1996
114. "The Ordering State of Intermetallics: The Ordering Tie-Line", TMS/ASM Fall Meeting, October 1996, Cincinnati, OH.
115. "Characterization of the Micro-Mechanisms of Transmission of Strain Across Inter-and Intraphase Interfaces in Lamellar TiAl", TMS/ASM Fall Meeting, October 1996, Cincinnati, OH.
116. "Deformation Behavior of Ordered Nb-Ti-Al Alloys", TMS/ASM Fall Meeting, October 1996, Cincinnati, OH.
117. "Development of Nb Aluminides for Structural Applications", Dayton Area Graduate Studies Institute, September, 1996
118. "Recent Developments in Nb Aluminides for Structural Applications", Cincinnati Chapter of ASM, October 1996, Cincinnati, OH.
119. "Development of Nb Aluminides for Structural Applications", Case Western Reserve University, October 1996, Cleveland, OH.
120. "Recent Developments in High Temperature Intermetallic Compounds, Metallic Multilayers, and Ceramic Composites", Technische Hochschule Darmstadt, October 1996, Darmstadt, Germany.
121. "The Ordered State of Alloyed Intermetallics: The Ordering Tie-Line", MRS Fall Meeting, December 1996, Boston, MA.
122. "Relationship Between Interface and Dislocation Structure and the Mechanical Properties of Metals and Intermetallics", MRS Fall Meeting, December 1996, Boston, MA.
123. "Structural Stabilities in Metallic Multilayers", Sandia National Laboratory, Livermore CA, December, 1996.
124. "Serendipity and Planning in Research", Presidential Address to the Univerity of Birmingham Metallurgical Society, Birmingham, UK, March 1997.
125. "Development of Nb Aluminides and Structural Stabilities in Metallic Multilayers", General Electric, Corporate Research and development Laboratories, May 1997.
126. "Novel Nb Aluminides for Elevated Temperature Applications", Thermec 1997, July 1997

127. "Issues Involving Ductility, Toughness and Structural Stabilities in Intermetallics and Multilayered High Temperature Materials", Conference on Computer Aided Design of High Temperature Materials, Santa Fe, July 1997.
128. “Interface Properties and Phase Stabilities in Metallic Multilayers”, TMS Fall Meeting, Indianopolis, September 1997.
129. "Structural Stabilities in Intermetallic Compounds and Multilayered Materials", Purdue University, October, 1997
130. "Structural Stabilities in Multilayered Materials", Göttingen, October 1997
131. “Ductility, Toughness and Structural Stabilities in Intermetallics and Multilayered Materials”, Cambridge University, Cambridge, UK, November 1997
132. “Processing and Properties of Advanced Nb-based Intermetallics”, PFAMVI, Singapore, November 1997.
133. "Strengthening and Toughening Issues in Nb-Ti Based Intermetallics", TMS Annual Meeting, San Antonio, February, 1998.
134. “The Interchange between Experimental and Computational Efforts in the Accelerated Maturation of Materials”, Mardi Gras Conference, Baton Rouge, LA, February 1998.
135. “Microstructure and Mechanical Behavior of Nb Aluminides”, 3rd. International Workshop on Ordered Intermetallic Alloys and Composites, HangZhou, PRC, April 1998.
136. “Ordering, Deformation Mechanisms, and Oxidation of B2 Nb-based Aluminides”, Kyoto Workshop on High-Temperature Intermetallics, Kyoto, Japan, May 1998.
137. “Understanding Alloying Addirions to TiAl”, Workshop on TiAl, COST 513, Neuchâtel, Switzerland, June 1998.
138. “Co-Continuous Ceramic Composites”, Robert Bosch Company, Stuttgart, Germany, July 1998.
139. “The Ordered State of Materials”, Rosemont TMS, Oct. 1998.
140. “Development of B2 Niobium Aluminides and Structural Stability and Deformation of Metallic and Intermetallic Multilayered Materials”, Schenectady ASM/TMS Local Chapter, November, 1998.
141. “Overview of CAMM”, KAPL, November, 1998.
142. “Dislocation Interactions and Deformation Mechanisms in Two-Phase Alloys based on TiAl”, TMS Annual Meeting, San Diego, February 1999.
143. “Physical Metallurgy of Ti Alloys”, Ladish Corporation, May 1999.
144. “Deformation Mechanisms in TiAl and Development of B2 Niobium Aluminides”, Oak Ridge National Laboratory, May, 1999.
145. “Ordered States and Phase Transitions in Intermetallics and Thin Metallic Films”, IAC-2, Davos, August, 1999.
146. “The Role of Interfaces in the Deformation of Titanium Aluminides”, International Workshop on Grain Boundaries, Birmingham, September, 1999.
147. “Accelerated Maturation of P/M Light Materials”, TMS Fall Meeting, Cincinnati, November, 1999.
148. “Advanced Intermetallics and Refractory Alloys”, BARC, Mumbai, India Nov. 1999
149. “HREM Characterization of Slip Transmission in Lamellar TiAl”, TMS Annual Meeting, February, 2000.
150. “Use Of Elemental Powder Blends in the Formation of Complex Alloys using LENS™, TMS Annual Meeting, February, 2000.
151. “Phase Transitions in Metallic Multilayers”, TMS Annual Meeting, February, 2000.
152. “Predicting the Behavior of Ti Alloys and Metallic Multilayered Materials”, Department of Mechanical Engineering, Hong Kong University, May, 2000.
153. “Revolutionary Manufacturing & Design: Metallic Materials”, 2015 Future Threat Technologies Symposium, Central Intelligent Agency, Langley, VA, August 4th, 2000
154. “A Combinatorial Approach to Developing Property/Microstructure Relationships in Titanium Alloys”, TMS Annual Meeting, February, 2002

155. "The Accelerated Maturation of Micro- and Nano-Scaled Metallic Materials", Department of Materials Science and Engineering, University of Michigan, Ann Arbor, MI, April, 2002.
156. "Mechanical Property Model Development for Wrought Titanium Alloys", Aeromat Conference, Orlando, FL, June 2002
157. "The Accelerated Maturation of Metallic Materials", CSIRO, Clayton, VIC, Australia, August, 2002
158. "Nano Materials in Gas Turbine Engines", Nano Materials for Aerospace, Corpus Christi, Texas, January 27-30, 2003
159. "Integration of Modeling and Characterization", USAF Workshop on Integrated Modeling and Microstructure, Freiburg, Germany, May, 2003
160. "Phase Stabilities in Nanoscale Metallic Multilayers", Einer Vorlesung zu Ehre des Besondersgeburtstages von Herren Dr. Prof. Reiner Kirchheim, University of Göttingen. July 4th, 2003
161. "The Accelerated Maturation of Micro- and Nano-Scaled Metallic Materials", Department of Materials Science and Engineering, Georgia Technology Institute of Technology, Atlanta, GA, October, 2003
162. "FIB Applications", Institut für Materialphysik, Göttingen University, Germany, February, 2004
163. "Three-dimensional Characterization of Microstructures", USAF Workshop on Integrated Modeling and Microstructure, Freiburg, Germany, May, 2004
164. "Application of FIB-Tomography to the Study of Microstructures in Titanium Alloys", Microscopy and Microanalysis, Savannah, GA August 2004
165. "3-D Materials Characterization using Dual-Beam FIB/SEM Techniques", Microscopy and Microanalysis, Savannah, GA August 2004
166. "The Accelerated Maturation of Micro- and Nano-Scaled Metallic Materials", Institute for Metal Research, Shenyang, China, July, 2004
167. "Engineering the Alpha2 Phase Morphology in TiAl Based Alloys", IRC International Workshop on Ti Aluminides, University of Birmingham, UK, July, 2004
168. "Prediction of Microstructure/Property Relationships in Ti Alloys", ASM MS&T, Pittsburgh, PA, October 2004
169. "Predicting Microstructure/Property Relationships in Ti Alloys", GE Global Research Center, Bangalore, India, December, 2004
170. "Luddites' Approach to Predicting Mechanical Properties of Lobster", USAF Workshop on Integrated Modeling and Microstructure, Freiburg, Germany, May, 2005
171. "Center for the Accelerated Maturation of Materials", FEI Company, Acht, Eindhoven, Netherlands, June, 2005
172. "A Combinatorial Approach to the Elemental Optimization of a Beta Titanium Alloy Using Directed Lased Deposition", Aeromat Conference, Orlando, FL, June 2005
173. "Exploiting a New Generation of Electron Microscopy", Seminar, Melbourne, Australia, July, 2005
174. "Three-Dimensional Reconstruction of Alpha Laths in α/β Titanium Alloys by Serial Sectioning with a Dual Beam FIB", MS&T 2005, Pittsburgh, PA, October 2005
175. "Design Tools for structural Metallic Materials", Frontiers in Materials Design, Chennai, India, November14-18th, 2005
176. "Developing Computational Tools for Predicting Properties of Ti Alloys", International Conference on Advanced Materials Design and Development, Goa, India, 14-16th December, 2005
177. "The Importance of Observing in Two Dimensions but Realizing in Three Dimensions", In celebration of the awarding of the Ernst Abbe Award to John Russ, Eastern Analytical Symposium of the New York Microscopical Society, November, 2006
178. "The Accelerated Maturation of Micro- and Nano-Scaled Metallic Materials", INMETRO, Rio de Janeiro, Brazil, January 2006

179. "Integration of Materials Characterization with Modeling and Simulation for the Development of Computational Tools for the Design of Materials", National Synchrotron Laboratory, Campinas, Brazil, January, 2006
180. "Design Tools for Predicting Microstructure/Property Relationships in Ti Alloys", TMS Annual Meeting, San Antonio, TX, 15th March, 2006
181. "New Research Tools for the Prediction of Microstructure/Property Relationships in Ti Alloys", Institut für Materialphysik, Göttingen University, Germany, May, 2006
182. "Modeling the Mechanical Behavior of Titanium Alloys and predicting the Phase Stability in Metallic Nano-scaled Multilayers", Institute for Metal Research, Shenyang, China, May, 2006
183. "Modeling the Interrelationship between Microstructure and Properties of Titanium Alloys" International Conference on Aerospace Materials, Beijing. June 2006
184. "Stimulating Interest in Materials Science and Engineering in Secondary and Tertiary Education", " International Conference on Aerospace Materials, Beijing. June 2006
185. "Modeling the Interrelationships between Microstructure and Property in Ti Alloys", Department of Materials Science and Engineering, University of North Texas, Denton, TX, October, 2006
186. "Predicting the Interrelationship between Microstructure and Properties in Ti Alloys and Phase Stabilities in Nano-scaled Metallic Multilayers", University of Queensland, Brisbane, Australia. October 5th, 2006
187. "Rapid Solidification Studies, Old and New", Materials far from Equilibrium, BARC, Mumbai, India, December 15-16th, 2006
188. "New Research Tools for the Prediction of Microstructure/Property Relationships in Ti Alloys", ARC Centre of Ecellence in the Design of Light Alloys, Monash University, Clayton, VIC, August 2006
189. "A Comparison of Quantification of Microstructural Features in α/β-Ti Alloys using Stereology-based and Direct 3-D Characterization Techniques", Materials Research Society Annual Meeting, December, 2006
190. "The Use of a Dual-Beam FIB Instrument in Failure Analysis", MS&T 2006, Cincinatti, OH, October, 2006.
191. "Characterization of Complex Microstructures for Computer Simulation", TMS Annual Meeting 2007, Orlando, FL, 27th February, 2007
192. "Progress in Materials Modeling and Some Future Needs" TMS Annual Meeting 2007, Orlando, FL, 27th February, 2007
193. "Predicting the Relationship between Mechanical Properties and Microstructure of Ti Alloys and Phase Stabilities in Metallic Multilayers", Department of Materials Science and Engineering, Iowa State University, Ames, IA, March, 2007
194. "Laser Deposition as a Combinatorial Method for Materials Development", Optomec User Group, UNT, 3rd April, 2007
195. "Predicting the Relationship between Mechanical Properties and Microstructure of Ti Alloys", Department of Materials Science and Engineering, University of Alabama, Tuscaloosa, April, 2007
196. "The Application of Bayesian Neural Network Modeling for the Prediction of Tensile and Fatigue Properties in α/β Ti Alloys", 11th World Conference on Titanium, Kyoto, Japan. June 3-7, 2007
197. "Use of Dark-field STEM Imaging to Reveal Phase Separation in a β-Stabilized Titanium Alloy", Microscopy and Microanalysis, Fort Lauderdale, FL August 2007
198. "Integrated Characterization and Modeling of Ti Alloys", Department of Materials Science and Engineering, University of North Texas, 11th September, 2007
199. "Laser Deposited Functionally Graded Unitized Implants", TMS MS&T 2007, Detroit, MI, 17th September, 2007
200. "Nanotechnology Education", A Hearing by the Subcommittee on Research and Science Education, House Committee on Science and Technology, Washington, DC, 2nd October, 2007
201. "Future Directions for Development of Electron Microscopy", FEI Technology Conference, Portland, OR, 13th November, 2007

202. "Accelerated Maturation of Materials: Integrating Computation and Characterization", ExxonMobil Research and Engineering Company, Annandale, NJ. November 27th, 2007
203. "Development of New Ti Aluminides through Powder Processing: a Collaborative Activity between the CoE and CAMM", ARC Light Metals Workshop, Sydney. December 4-5th, 2007
204. "Applications of Aberration-Corrected Electron Microscopy", Titan Club, Eindhoven, The Netherlands, 28th January, 2008
205. "Advances in Analytical Electron Microscopy", Australian Electron Microscopy Society Annual Meeting, Perth, Australia, 19th February, 2008
206. "The Direct 3-Dimensional Characterization and Digitization of Complex Microstructures in Ti-Based Alloys across Length Scales", TMS Annual Meeting, New Orleans, 10th March, 2008
207. "Novel Heat-Treatments for the Production of Refined Microstructures in α/β Ti Alloys", TMS Annual Meeting, New Orleans, 10th March, 2008
208. "Probing the Early Stages of Phase Separation and Second Phase Nucleation in Complex Beta Titanium Alloys", TMS Annual Meeting, New Orleans, 11th March, 2008
209. "On the Nucleation of Alpha-Ti in Alpha/Beta-Ti and Beta-Ti Alloys", TMS Annual Meeting, New Orleans, 12th March, 2008
210. "Specimen Preparation for Aberration-Corrected Electron Microscopy", Workshop on the *Limits to Characterization and Modeling of Atomic Scale Processes and Defects*, Bernkastel, Germany, May 6th, 2008
211. "Advances in Characterization of Bio-materials", Sri Ramachandra University, Chennai, India, 18th June, 2008
212. "Direct Three-Dimensional Microstructural Characterization and Reconstruction Across Varying Length Scales in α/β Titanium Alloys by Serial Sectioning Using a FEI DualBeam(TM) (FIB/SEM) and Robo-Met.3D", Microscopy & Microanalysis 2008 Meeting, Albuquerque, NM, August 4th, 2008
213. "Quantitative measurements of elemental intermixing in nanoscaled multilayers and other stories", Brazilian MRS Meeting, Guaruja, Brazil, 2nd October, 2008
214. "Laser Deposited Functionally Graded Orthopedic Implants", TMS MS&T 2008, Pittsburgh, PA, 7th October, 2008
215. "On the Nucleation of α-Ti in α/β-Ti and β-Ti Alloys", TMS Annual Meeting 2009 San Francisco. February 16th-19th, 2009
216. "Maximizing the Spatial resolution of Compositional Analysis**",** WISAT 2009, Mumbai, India, 23-25th February, 2009
217. "Applications using the Dual-Beam FIB", WISAT 2009, Mumbai, India, 23-25th February, 2009
218. "High Resolution STEM and High Angle Annular Dark-Field Imaging", WISAT 2009, Mumbai, India, 23-25th February, 2009
219. "Ultra-High Resolution Characterization of Hybrid Interfaces in Nanoscaled Inorganic/Inorganic and Inorganic/Organic Heterostructures", Georgia Institute of Technology, 25th March, 2009
220. "The Use of Spatially-resolved and Monochromated EELS to Study Interfaces", Worldwide Titan Club Meeting, Eindhoven, The Netherlands, 8th April, 2009
221. "Limitations of Aberration-Corrected Electron Microscopy for the Study of Interfaces", USAF EOARD Bernkastel Workshop. May 2009
222. "Progress Towards Predicting the Interrelationships between Microstructure and Properties in Ti Alloys", Indian Institute of Materials Lecture and Defence Metallurgical Research Laboratory, Hyderabad, India. September 23rd, 2009
223. "Limits to High Spatial Resolution of EDS and EELS in an Aberration-Corrected (S)TEM", Frontiers of Electron Microscopy, Microanalysis and Spectroscopy, FEMMS2009, Huis ten Bosch, Nagasaki, Japan. September 27th-October 2nd, 2009
224. "Phase Stabilities in Metallic Multilayers", MS&T'09, Pittsburgh, PA. October 28th, 2009
225. "Factors Affecting Elemental Quantification at the Atomic Scale using EDS and EELS", MS&T'09, Pittsburgh, PA. October 28th, 2009

226. "Development of Neural Networks for the Assessment of the Interrelationships between Microstructure and Properties of Ti Alloys", ExxonMobil Research and Engineering Company, Annandale, NJ. November 12th, 2009
227. "Experimental and Computational Tools for the Digital Representation and Prediction of Microstructure and its Incorporation in the Designer's Knowledge Base", GE Aviation, Evendale, OH. December 3rd, 2009
228. "Integration of Microstructural Characterization and Neural Networks for the Prediction of Microstructure and Properties in Titanium Alloys", Annual Workshop of the ARC Light Metals Design Centre, Geelong, Australia. December 9-10th, 2009
229. "University Activities in Additive Manufacturing", EWI Additive Manufacturing Consortium Meeting, Columbus, OH. February 11th, 2010
230. "Ti Alloys by Design for Lighter, Stronger and Tougher Alloys - Modeling, Simulation and Validation", Boeing Workshop, Seattle, WA. February 18th 2010
231. "Pushing to the Limits of Spatially Resolved Compositional Determinations in Aberration-Corrected Scanning Transmission Electron Microscopy", EMSI-2010, Mumbai, India. March 8-10th, 2010
232. "Towards Modeling the Mechanical Properties of Ti Alloys", NIMS, Tsukuba, Japan. March 15th, 2010
233. "Second Phase Nucleation in the Beta Matrix of Titanium Alloys: Role of Compositional and Structural Instabilities", Invited Talk, International Phase Transformation Meeting, Avignon, France June 9th, 2010
234. "Development of ICMSE of Ti Alloys", Department Seminar, Imperial College, London, 14th June, 2010
235. "Limits to the High Spatial Resolution, of EDS and EELS in an Aberration Corrected (S)TEM", Institute Colloquium, Center for Electron Nanoscopy, DTU, Copenhagen, 17th June, 2010
236. "Memories of Mr Loretto in a White Coat Talking about Pole Piece Gaps", Invited Lecture, IRC Light Metals Conference, Birmingham, UK, 27th July, 2010
237. "Microstructure Evolution and the Interrelationship between Microstructure and Properties of Titanium Alloys", Keynote Lecture PRICM 7 Cairns, Aug 2nd 2010
238. "Opportunities in Advanced Characterisation- the opportunities presented by the generational advance in instrumentation, including 3-D characterization at the nanoscale", Invited Lecture*,* Post-Cairns Workshop, Aug. 9th, 2010
239. "Optimizing Microstructures in Light Weight Alloys for Enhanced Performance", Plenary Talk Brazilian MRS, Ouro Preto, Brazil Oct. 26th 2010
240. "An Experimentalist's View of the Development of the Integrated Computational Materials Engineering of Ti Alloys", Polmear Award Lecture, ARC CoE in Light Metal Design Workshop, Sydney, Australia 30th November, 2010
241. "Atomic Scale Investigation of Alpha Nucleation in the Beta Matrix of Titanium Alloys", Invited Talk, TMS Spring Meeting, San Diego, CA, 1st March, 2011
242. "Direct 3D Materials Characterization", Invited Talk, ONR High Resolution Non-Invasive Damage Diagnostics & Predictive Modelling Workshop, Diamond Synchrotron Facility, Abingdon, UK, 8th March, 2011
243. "Nucleation Studies in Titanium Alloys: The Role of Competing Phase Instabilities", Lee-Hsun Award Lecture, Institute for Metal Research, Shenyang, China 14th March, 2011
244. "Recent Advances of 3-D Characterization of Materials", Bernkastel Workshop, Bernkastel-Kues, Germany, May 18th, 2011
245. "Direct 3-D Characterization of Microstructures and its Incorporation in ICME", Invited Lecture, International Workshop for the Frontier of Physical Metallurgy in High Temperature Structural Materials, USTB, Beijing, 24th June, 2011

246. "Development of Neural Network Tools for the Prediction of the Interrelationships between Microstructure and Properties of Ti Alloys", Seven Springs (TMS) ICME Conference, Seven Springs, PA, July 11th, 2011
247. "Development of 3-D Characterization Techniques and their Role in ICME": Peter Collins, John Sosa, Dan Huber, Hamish Fraser, Seven Springs (TMS) ICME Conference, Seven Springs, PA, July 11th, 2011
248. "Application of Aberration-Corrected Electron Microscopy and Analysis in Metallic Systems", Ernst-Ruska Centre, FZJ, Jülich, Germany, July 18th, 2011
249. "Phase Transformations and Microstructural Development in Ti Alloys", Department Colloquium, Materials Science and Engineering, University of Tennessee (Knoxville), October 10th, 2011
250. "Application of Novel Techniques to the Three-Dimensional Characterization of Microstructural Features in α+β Titanium Alloys", MS&T, Columbus, October, 2011
251. "Development of Neural Networks for the Prediction of the Interrelationship between Microstructure and Properties of Ti Alloys", ARC-Centre of Excellence for Light Metals Review, Monash University, Melbourne, Australia, 29th November 2011
252. "Possibilities and Limitations of Ultra-High Spatial Resolution Characterization in an Aberration-Corrected (S)TEM", John Matthews Memorial Lecture, MSSA 2011, Pretoria, South Africa, December 7th, 2011
253. "Novel Mechanisms for Homogeneous Precipitation in Titanium Alloys", Department Colloquium, Materials Science, University of Cape Town, December 12th, 2011
254. "Local Compositional and Structural Determinations in Metallic Materials" ACMM22/ICON2012/AMPC10, Perth, Western Australia February, 2012
255. "Limitations to Quantitative Analytical (S)TEM at Very High Spatial Resolution" ACMM22/ICON2012/AMPC10, Perth, Western Australia February, 2012
256. "On the Application of the Concepts of Integrated Computational Materials Science and Engineering to the Prediction of the Behavior of Materials under Extreme Environments", Workshop: Fundamental issues at the interface of materials and mechanics related to energy applications (FIMMEA 2012). Vashi, Navi Mumbai, April 2012.
257. "Direct 3-D Materials Characterization and its Incorporation into Computational Models", Workshop on, "Possibilities and Limitations of Quantitative Materials Modeling and Characterization", Bernkastel, May 2012
258. "Exploiting Advances in Microscopy for Direct 3D Characterization of Materials", 3D Materials Science 2012, Seven Springs, July, 2012
259. "Application of novel techniques to the three dimensional characterization of microstructural features in α+β titanium alloys", M&M Annual Conference, Phoenix, August, 2012
260. "Coupling Advanced Characterization with First-Principles Computations to Investigate Omega Precipitation in Titanium Alloys", MS&T, Pittsburgh, PA, October 2012.
261. "Rules-based approaches to the development of ICMSE predictive tools for titanium alloys", ARC-Centre of Excellence for Light Metals Review, Monash University, Melbourne, Australia, December 2012
262. "Aberration-corrected electron microscopy studies of phase transformations in titanium alloys and nickel-base superalloys", MSSA Annual Meeting, Cape Town, South Africa, December 2012
263. "Aberration-Corrected Electron Microscopy Studies of Phase Transformations in Ti and Ni-base Superalloys", School of Metallurgy and Materials, University of Birmingham (UK), February 2013
264. "A Combinatorial Approach to the Investigation of Metal Systems That Form Both High Entropy Alloys and Bulk Metallic Glasses", TMS Annual Meeting, San Antonio, March 2013
265. "Non-conventional Transformational Pathways in Titanium Alloys", TMS Annual Meeting, San Antonio, March 2013
266. "Possibilities and limitations afforded by aberration-corrected electron microscopy", Materials Science and Engineering, Indian Institute of Science, Bangalore, April, 2013
267. "Revealing morphology and structure at the nano-scale", Sri Ramachandra University, Chennai,

April 2013

268. "Possibilities and limitations afforded by aberration-corrected electron microscopy", Materials Science and Engineering, Indian Institute of Technology Madras, Chennai, April, 2013
269. "Application of Integrated Computational Materials Science and Engineering to Microstructure/Property Interrelationships in Metallic Systems", Materials Week 2013, Institute for Materials Science, Ohio State University, May 2013
270. "Specimen damage mechanisms in thin foil preparation for HRSTEM/TEM observations", Workshop on, "Possibilities and Limitations of Quantitative Materials Modeling and Characterization", Bernkastel, May 2013
271. "Aberration-Corrected Electron Microscopy Studies of Phase Transformations in Ti and Ni-base Superalloys", 70th Birthday Symposium for Reiner Kirchheim, Universität Göttingen, May 2013
272. "Using microscopy to discover new transformation pathways in precipitation processes in titanium and high entropy alloys", Ernst Ruska-Centre, Forschungs Zentrum Jülich, Jülich, Germany, June 2013
273. "Possibilities and limitations afforded by aberration-corrected electron microscopy", N.N. Dasgupta Memorial lecture, International Conference on Electron Microscopy and the XXXIV Annual Meeting of the Electron Microscopy Society of India, Kolkata, India, July 2013
274. "Nature of the interfaces between the constituent phases in high entropy alloys", PICO 2013, Kasteel Vaalsbroek, Vaals, Netherlands, October 2013
275. "Reflections upon the CoE and a look to the future", ARC-CoE Review, University of Brisbane, December 2013
276. "Possibilities and Limitations Afforded by Aberration-Corrected Electron Microscopy", Reliance Industries, Mumbai, India, January 2014
277. "Possibilities and Limitations of the Application of Aberration-Corrected Electron Microscopy to Physical Problems", Tata Institute for Fundamental Research (TIFR), Mumbai, India, January 2014
278. "Possibilities and Limitations of Quantitative Spatially Resolved Analytical Aberration-Corrected Electron Microscopy", WISAT 2014, Nashik, India, February, 2014
279. "The Application of Advanced Characterization Techniques to Uncover Non-Conventional Pathways for Phase Transformations in Ti Alloys", TMS Annual Meeting, San Diego, February 2014
280. "Characterization of the microstructure and deformation mechanisms in a refractory HEA" TMS Annual Meeting, San Diego, February 2014
281. "Nature of the B2 phases in high entropy alloys", TMS Annual Meeting, San Diego, February 2014
282. "On the crystalline to amorphous phase transformation induced by radiation damage", TMS Annual Meeting, San Diego, February 2014
283. "Integration of computational materials engineering, materials characterization, and manufacturing technologies", Workshop on "Advanced Electron Microscopy of titanium alloys and PGMs", Nelson Mandela Metropolitan University, Port Elizabeth, SA, March 3rd, 2014
284. "Advancing alloy understanding through materials characterization using as examples titanium and high entropy alloys", Workshop on Advanced Characterization, University of Cape Town, March 7th, 2014.
285. "Developing manufacturing simulators for titanium alloys", Workshop on ICME and microstructure evolution in titanium alloys, Lindenderry at Red Hill, Mornington Peninsula, VIC, April 29th, 2014.
286. "ALMMII: ICME into alloy development, design, and manufacturing of titanium components", GE Global Research, Niskayuna, NY, May 12th, 2014.
287. "Incorporating integrated computational materials engineering in alloy design and optimization", Conference on Materials for Extreme Applications, 2014 ASM Spring Symposium, Niskayuna, NY, May 13th, 2014.
288. "To be ordered or not to be ordered, that is the question", Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization, Bernkastel-Kues, Germany, May 20th, 2014.
289. "Microstructure, Ordering Schemes and Deformation Mechanisms in Compositionally Complex Alloys", Electron Microscopy Society of India, Annual Meeting, New Delhi, India, July 9th, 2014.

Plenary.

290. "Microstructure, Ordering Schemes and Deformation Mechanisms in Compositionally Complex Alloys", Workshop on Compositionally Complex Alloys, Munich, Germany, July 16th, 2014.
291. "Characterization of Hybrid Gradients between Bulk Metallic Glasses and High Entropy Alloys", 18th International Microscopy Congress (IMC 2014), Prague, 7 -12 September 2014
292. "Materials characterization using ChemiSTEM and atom probe tomography", Pre-MSSA Workshop on Analytical Techniques, Stellenbosch, SA, December 3rd, 2014.
293. "Determination of the Ordering Scheme in B2 Phases in High Entropy Alloys using Aberration-Corrected Electron Microscopy", Annual Meeting of the Microscopy Society of Southern Africa, Stellenbosch, SA, December 4th, 2014. Plenary.
294. "Producing Refined Microstructures in Titanium Alloys", HexMat General Meeting, Imperial College, London, UK, January 15th, 2015.
295. "Direct 3D materials characterization of compositionally complex alloys", Workshop on Compositionally Complex Alloys, Ernst Ruska-Centrum, FZ-Jülich, Jülich, Germany, January 19th, 2015
296. "Integration of ICME with manufacturing processes for enhancement of local properties in titanium alloy components", TMS Annual Meeting 2015, Orlando, FL, March 16th-19th, 2015.
297. "Determination of the Three-Dimensional Microstructure and Ordering Schemes in Compositionally Complex Alloys", TMS Annual Meeting 2015, Orlando, FL, March 16th-19th, 2015.
298. "The influence of non-conventional pathways for nucleation on microstructural evolution in titanium alloys", TMS Annual Meeting 2015, Orlando, FL, March 16th-19th, 2015.
299. "Descriptions of the deformation behavior and properties of hybrid superalloys for elevated temperature applications", TMS Annual Meeting 2015, Orlando, FL, March 16th-19th, 2015.
300. "Integration of ICME with industrial processes", Workshop on Possibilities and Limitations of Quantitative Materials Modeling and Characterization 2015, Bernkastel-Kues, Germany, May 31st – June 3rd, 2015.
301. "Integrated Experimental and Computational Studies of Non-conventional Transformation Pathways in Titanium Alloys", *KC-65 Workshop: Metastable Microstructures and Electron Microscopy*, IISC, Bangalore, India, July 6th, 2015
302. "Application of experimental and computational approaches to explore non-conventional transformation pathways resulting in refined microstructures in beta-stabilized titanium alloys", Plenary Lecture, YUCOMAT 2015, Herceg Novi, Montenegro, September 2nd. 2015.
303. "The influence of texture and other microstructural features on the mechanical properties of titanium alloys", Plenary lecture, Symposium on Microstructure, Texture, and Formability of Metal Alloys, University of Cape Town, South Africa, September 16th, 2015.
304. "Non-classical transformations pathways for alpha precipitation in Ti alloys focusing on Ti-5553", Advances in Materials and Processing Technologies Conference (AMPT) 2015, Madrid, Spain, December 15th, 2015.
305. "The influence of *real nanotechnology* on the development of novel microstructures in titanium alloys", Colloquium, Department of Materials Science and Engineering, Ohio State University, January 22nd, 2016
306. "Microstructural characterization in materials research over forty five years - the old and the new!", Plenary Lecture, Summer Postgraduate Conference, Monash University, February 24th, 2016
307. "The Impact of ACEM on Phase Transformations in Metallic Alloys", ASU Topical Workshop on "Challenges and Opportunities for Aberration-corrected Electron Microscopy", Arizona State University, Tempe, AZ, March 28th, 2016
308. "Quantitative 3D Microstructural Characterization across Length Scales and Acquisition Techniques", MRS Spring Conference, Phoenix, AZ, March 30th, 2016
309. "Possibilities and Limitations of XEDS in an aberration-corrected (S)TEM", Bernkastel Workshop on "*Possibilities and Limitations of Quantitative Materials Modeling and Characterization 2016"*, Bernkastel-Kues, Germany, May 16th, 2016
310. "Application of aberration-corrected (S)TEM to metallurgical problems", Distinguished Speaker,

Canadian Centre for Electron Microscopy User's Meeting, Hamilton, CA, June 7th, 2016

311. "The influence of non-conventional pathways for nucleation on the development of novel microstructures in metastable β-Ti alloys", Canadian Materials Science Conference, Hamilton, CA, June 8th, 2016
312. "Controlling alpha precipitation in beta", Colloquium, Department of Materials Science and Engineering, Birmingham University, Birmingham, UK, June 17th, 2016
313. "Refined microstructures in metastable beta titanium alloys – role of non-conventional transformation pathways", International Conference on Materials Research, Indian Institute of Science, Bangalore, India, June 21st, 2016
314. "Coupling computational materials science to manufacturing: the need for highly accurate and precise analytical high-resolution electron microscopy", Workshop on Scientific Directions for Future Transmission Electron Microscopy, Ernst Ruska-Centre, Jülich, Germany, July 13th-15th, 2016
315. "*Today's electron microscopy connecting computational materials science and engineering with advanced manufacturing"*, FEI VIP Event at M&M 2016, Columbus, July 24th, 2016
316. "The art and science of spatially-resolved determinations of local composition in an aberration-corrected electron microscope", YUCOMAT-MRS Conference, Herceg Novi, Montenegro, September 5th, 2016
317. "Application of aberration-corrected electron microscopy to the characterization of phase transformations and microstructural evolution in complex metallic alloys", Congress on Materials Science and Engineering, MSE 2016, Darmstadt, Germany, Sept 27-29th, 2016
318. "The influence of non-conventional pathways for nucleation on the development of novel microstructures in metastable beta-Ti alloys", Colloquium at the Department of Materials Science and Engineering, Iowa State University. October, 2016
319. "Application of aberration-corrected (S)TEM to the study of non-conventional pathways for nucleation on the development of novel microstructures in metastable β-Ti alloys", Plenary Lecture, Annual Conference of the Microscopy Society of Southern Africa, Port Elizabeth, SA, December 5th-9th, 2016
320. "The Role of Characterization and Computational Modeling in Developing Mechanistic Understandings of Microstructural Evolution in Metallic Alloys", Materials Engineering, Monash University. Feb. 15th, 2017
321. "The Role of Characterization and Computational Modeling in Developing Mechanistic Understandings of Microstructural Evolution in Metallic Alloys", CSIRO, Clayton, VIC, Australia. Feb. 16th, 2017
322. "Laser deposition of metallic powders", TMS Spring Meeting 2017, San Diego, CA, February 27th-March 2nd, 2017
323. "Microstructure-Property interrelationships in metastable beta titanium alloys with refined distributions of the alpha phase", TMS Spring Meeting 2017, San Diego, CA, February 27th-March 2nd, 2017
324. Development of titanium alloys optimized for additive manufacturing employing laser deposition of powders", TMS Spring Meeting 2017, San Diego, CA, February 27th-March 2nd, 2017
325. "Possibilities and limitations of spatially-resolved determinations of chemical composition", PICO 2017, Kasteel Vaalsbroek, Vaals, The Netherlands. April 30th-May 4th, 2017
326. "The influence of non-conventional pathways for nucleation on the development of novel microstructures in metastable β-Ti alloys", Bernkastel Workshop on "*Possibilities and Limitations of Quantitative Materials Modeling and Characterization 2017"*, Bernkastel-Kues, Germany, May 17th, 2017
327. "Advanced materials, manufacturing and global warming: science over "alternative" facts", Theodore von Kármán Fellowship Award Presentation, RWTH Aachen University, May 22nd, 2017.
328. "Coupling materials characterization and integrated computational materials engineering for alloy exploration and manufacturing", Materials Sciences, RWTH Aachen University, May 24th, 2017.
329. "Hot Isostatic Pressing (HIP) and Additive Manufacturing of titanium alloys for rotating components", FiMPART 2017, Bordeaux, France, July 11th, 2017

330. "Possibilities and limitations of spatially-resolved determinations of chemical composition" Plenary Lecture, 38th Annual Meeting of EMSI, Mahabalipuram, India, July 17th, 2017
331. "Transformation Pathways influencing Microstructural Evolution in a High Entropy Alloy with a Complex Nanoscale Microstructure", XXVI International Materials Research Congress (IMRC) 2017, Cancun, Mexico, August 21st-24th, 2017
332. "Materials characterization and integrated computational materials engineering: providing solutions for near-net shape manufacturing", Plenary Lecture, Yucomat 2017, Herceg Novi, Montenegro, September 4th-8th, 2017
333. "Structural Instabilities on Microstructural Evolution in Titanium", Plenary Lecture, 14th International Symposium on Physics of Materials (ISPMA), Prague, September 10th-15th, 2017
334. "Influence of instabilities on the refined distribution of the alpha phase in metastable titanium alloys" Keynote Lecture, Euromat 2017, Thessaloniki, Greece, September 17th-22nd, 2017
335. "The Role of Structural Instabilities on Microstructural Evolution in Titanium Alloys", Colloquium at ONERA, Paris, September 25th, 2017.
336. "Development of Various Fine Scale Alpha Microstructures in Titanium Alloys", Invited Talk, MS&T 2017, October 8th-12th, 2017. Pittsburgh, PA.
337. "Directions for Research on Structural Metallic Materials for Applications for USAF systems – the Role of Modern Tools to Maintain a Technological Advantage", Invited Horizon's Lecture, AFOSR, October 12th, 2017. Arlington, VA.
338. "Investigation of Transformation Pathways in a High Entropy Alloy with a Complex Nanoscale Microstructure using Advanced Electron Microscopy", Invited Lecture, Frontier Institute of Science and Technology, Xi'an Jiaotong University, October 17th, 2017. Xi'an China.
339. "The Role of Structural Instabilities on Microstructural Evolution in Titanium Alloys", Invited Lecture, School of Materials Science and Technology, Xi'an Jiaotong University, October 19th, 2017. Xi'an China.
340. "Transformation Pathways Influencing Microstructural Evolution in a High Entropy Alloy with a Complex Nanoscale Microstructure", Invited Lecture, University of Science and Technology Beijing, October 20th, 2017, Beijing, China
341. "The Role of Structural Instabilities on Microstructural Evolution in Titanium Alloys", Invited Lecture, Institute of Metal Research, October 24th, 2017. Shenyang, China
342. "Net - shaping of titanium alloys impacting light weighting for Defense, Aerospace & Transportation", Invited Lecture, International Symposium on Light Weighting for Defence Aerospace and Transportation, November 11th, 2017. Goa, India.
343. "Microstructural Evolution in Additively Manufactured Ti Alloys using High Throughput Experimental Approaches", December 2017, APICAM, Melbourne, Australia
344. "Providing solutions to problems with hot isostatic pressing of metallic powders: Ohio State's HIP Center", International Conference on Hot Isostatic Pressing, December 2017, Sydney, Australia
345. "Transformation pathways influencing microstructural evolution in a high entropy alloy with a complex nanoscale microstructure", Brahm Prakash Invited Lecture, Department of Materials Engineering, Indian Institute of Science, Bengaluru, India. Jan 23rd, 2018
346. "The Role of Structural Instabilities on Microstructural Evolution in Titanium Alloys", Brahm Prakash Invited Lecture, Department of Materials Engineering, Indian Institute of Science, Bengaluru, India. Jan 30th, 2018
347. "Exploiting Non-conventional Pathways for Transformations and Microstructural Evolution in Metastable Beta Ti Alloys", TMS Annual Conference 2018, Phoenix AZ. March 12th, 2018
348. "Memories of Mr. Loretto in a White Lab Coat Talking about Pole Piece Gaps", TMS Annual Conference 2018, Phoenix AZ. March 12th, 2018
349. "Influence of Lattice Instabilities on Microstructural Evolution in Metastable Ti Alloys", May 6th, Orlando, FL
350. "Designing Titanium Alloys for Additive Manufacturing", May 6th, Orlando, FL
351. "ICME/MGI: Integration of computational modeling with high level characterization", May 16th, University of Science and Technology Beijing, Beijing, China

352. "Developing an MGI Center: A description of how our Center for the Accelerated Maturation of Materials has been developed", May 18th, University of Science and Technology Beijing, Beijing, China
353. "The Role of ICME/MGI in Advanced Manufacturing", May 22nd, University of Science and Technology Beijing, Beijing, China
354. "Research Talk: Factors Influencing Microstructural Evolution in Metastable Beta Ti Alloys", May 24th, University of Science and Technology Beijing, Beijing, China
355. "Transformation pathways influencing microstructural evolution in a high entropy alloy with potential applications at elevated temperatures", July 9th, Thermec Conference 2018, Paris, France
356. "The Role of Structural Instabilities on Microstructural Evolution in Metastable Beta Titanium Alloys", Plenary Lecture, August 28th, ELMINA 2018, Belgrade, Serbia
357. "Materials characterization and integrated computational materials engineering: providing solutions for near-net shaping", Plenary Lecture, September 4th, YUCOMAT 2018, Herceg Novi, Montenegro
358. "The Role of Non-Conventional Transformation Pathways and Structural Instabilities on the Microstructural Evolution in Metastable β-Titanium Alloys, October 16th, 2018 MS&T 2018, Columbus, OH
359. "Dislocation glide as a deformation mechanism in compositionally complex alloys and a novel Ti alloy", 7th ESISM Workshop in Kyoto, "Fundamental Issues of Structural Materials", Jan. 7th-9th, 2019
360. "Identification of Structural Instabilities, and their Influence on Microstructural Evolution, in Titanium Alloys", Department of Materials Science and Engineering, Case Western Reserve University, Cleveland, OH, Jan. 15th, 2019
361. "Identification of Structural Instabilities, and their Influence on Microstructural Evolution, in Titanium Alloys", Department of Materials Science and Engineering, Stanford University, Jan. 25th, 2019
362. "Optimizing the Performance of Additively Manufactured Ti Alloy Components", Keynote Presentation, TMS Annual Conference, San Antonio, TX, 2019
363. "Determination of Transformation Pathways in High Entropy Alloys with B2/*bcc* Phase Combinations", TMS Annual Conference, San Antonio, TX, 2019
364. "Optimizing the Performance of Additively Manufactured Ti Alloy Components", 19th Polish-American Conference on Science and Technology, Columbus, OH, April 16th, 2019
365. "Designing Titanium Alloys for Additive Manufacturing", 29th Aeromat Conference, May 7th-9th, Orlando, FL
366. "Combining characterization and modeling to optimize additive manufacturing", Bernkastel Workshop 2019, May 19-22nd, 2019
367. "Design of titanium alloys processed using additive manufacturing for structural applications", APICAM 2019, Melbourne, Australia, June 30th-July 4th, 2019
368. "Optimizing the properties of titanium alloys processed using additive manufacturing", Yucomat 2019, Herceg-Novi, Montenegro, September 1st-5th, 2019
369. "Combining Materials Characterization and Modeling to Optimize Additive Manufacturing of Titanium Alloys", ADMAT 2019, Hyderabad, India, September 22nd-25th, 2019
370. "Nanoscale structural instabilities in metastable beta titanium alloys and their role in providing both strengthening and low elastic modulus", IAMNano 2019, Düsseldorf, Germany, October 27th-30th, 2019
371. "Role of structural and compositional instabilities on microstructural evolution of metastable β-Ti alloys", Workshop: Possibilities and Limitations of Quantitative Materials Modelling and Characterization, Club Mykonos, Langebaan, Western Cape, December 4th-6th, 2019
372. "Machine Learning for Microstructure/Property Predictions and Image Analysis", Workshop: Possibilities and Limitations of Quantitative Materials Modelling and Characterization, Club Mykonos, Langebaan, Western Cape, December 4th-6th, 2019

373. "Aiming for correlative solutions: Solving materials characterization problems using analytical electron microscopy and other techniques", Workshop on "Advances in Correlative Microscopic Techniques", Indian Institute of Technology Madras, Chennai, India January 31st, 2020. (Keynote)
374. "Identification of Structural Instabilities in Titanium Alloys using Aberration Corrected (Scanning) Transmission Electron Microscopy", Asian Pacific Microscopy Conference, APMC-12, Hyderabad, India, February, 2020. (Plenary)
375. "Development of titanium alloys and understanding their microstructural evolution, deformation behavior and mechanical properties", Department Colloquium, Mechanical and Materials Engineering Department, University of Cincinnati, February 21st, 2020.
376. "Exploration of Nano-scale Metastable Phases in Metastable Beta Titanium Alloys Using Advanced Electron Microscopy and Atom Probe Tomography", *TMS 2020 Annual Meeting & Exhibition*, San Diego, CA 2020
377. Optimizing Microstructure and Properties of Additively Manufactured Ti Alloys Using Alloying and Post-AM Heat-Treatments, TMS 2021 Annual Meeting, Virtual.
378. Exploiting structural and compositional instabilities in Ti alloys to optimize microstructure/property relationships when applying Additive Manufacturing, MS&T, Columbus, OH 2021 (Invited)
379. Exploiting structural and compositional instabilities in titanium alloys to optimize properties of components fabricated by additive manufacturing, Yucomat 2021, Remote (Plenary)
380. The use of novel electron detection schemes combined with novel imaging strategies in the scanning electron microscope to provide enhanced quantification of second phases, ASM Webinar, Jan. 2022
381. Optimizing Microstructure and Properties of Additively Manufactured Ti Alloys Using Alloying and Post-AM Heat-Treatments (Invited) TMS 2022 Anaheim
382. Optimizing composition and microstructure in compositionally complex alloys possessing bcc and B2 mixtures (Invited) TMS 2022 Anaheim
383. Inaugural Srikumar Banerjee Memorial Lecture 2022, BARC, Mumbai, India
384. Use of PICO-type microscopy techniques to optimize composition and microstructure in compositionally complex alloys, PICO 2022, Vaals, Netherlands
385. Memories of Mr. Loretto in a White Lab Coat Talking about Pole Piece Gaps, Loretto Memorial 2022, Birmingham, UK
386. The role of structural instabilities on microstructural evolution in Ti alloys, Possibilities and Limitations of Quantitative Materials Modeling and Characterization 2022, Bernkastel-Kues, Germany
387. Use of Analytical Electron Microscopy to Characterize Microstructure and Develop Transformation Pathways in Compositionally Complex Alloys, ELMINA 2022, Belgrade, Serbia
388. Enhancing powder metallurgy processing using advanced microstructural characterization and physical metallurgy, YUCOMAT 2022, Herceg-Novi, Montenegro
389. PM-HIP Material Science: Problems and Solutions, HIP 2022, Columbus, OH, Plenary Lecture
390. Modern Physical Metallurgy: Importance, Use of New Tools, and how to finance the Metallic Materials Enterprise, ASM Edward DeMille Campbell Memorial Lecture, New Orleans, 2022
391. Deformation mechanisms in RCCA's exhibiting a B2/bcc microstructure, AFRL Workshop 2022, Dayton, OH
392. Design of new metastable β-Ti alloys and determinations of their deformation mechanisms active during tensile deformation, MS&T 2022 Pittsburgh. Invited lecture.
393. Modern Physical Metallurgy: Its Importance, and the Use of New Experimental and Computational Tools, Monash Distinguished Engineering Professor Award 2022
394. Modern Physical Metallurgy: Its Importance, and the Use of New Experimental and Computational Tools, Indian Institute of Science, Nov. 2022
395. Strategies for producing attractive microstructures in powder metallurgy components processed using either additive manufacturing and/or hot isostatic pressing. Workshop at Evolve Back, Coorg, India, Nov. 2022.
396. Modern Physical Metallurgy: Its Importance, and the Use of New Experimental and Computational Tools, Nelson Mandela University, February 2023, Gqeberha (Port Elizabeth), South Africa

397. Interface sliding as a deformation mechanism in Ti alloys, TMS ’2023, San Diego, CA
398. The Need for Atomic-Scale Tomography, M&M 2023, Minneapolis MN
399. Interface sliding as a deformation mechanism in Ti alloys, YUCOMAT 2023, Herceg-Novi, Montenegro, Plenary Lecture
400. Validity of spatially-resolved XEDS measurements, Possibilities and Limitations of Quantitative Materials Modeling and Characterization 2023, Bernkastel-Kues, Germany
401. Optimization of Grain Morphology in Titanium Alloys processed using Additive Manufacturing, 2023, APICAM, Sydney, Australia
402. Optimizing the Microstructure of Titanium Alloys Processed by Additive Manufacturing, ASTM-ICAM, 2023, Washington, DC