NIKHILESH CHAWLA

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CITIZENSHIP

United States of America.

EDUCATION

Ph.D. Materials Science and Engineering, UNIVERSITY OF MICHIGAN – ANN ARBOR, 1997

M.S. Metallurgical Engineering, UNIVERSITY OF TENNESSEE – KNOXVILLE, 1994

B.S. Materials Engineering (with high honors), NEW MEXICO TECH, 1993

EXPERIENCE

PURDUE UNIVERSITY, Ransburg Professor of Materials Engineering, School of Materials Engineering, (8/20-present).

ARIZONA STATE UNIVERSITY, Director, Center for 4D Materials Science, (10/16-8/20).

ARIZONA STATE UNIVERSITY, Fulton Professor of Materials Science and Engineering, Materials Science and Engineering, and Professor of Mechanical Engineering, School for Engineering of Matter, Transport, and Energy, (3/12-8/20).

ARIZONA STATE UNIVERSITY, Acting Chair, Materials Science and Engineering Program, School for Engineering of Matter, Transport, and Energy (8/18-1/19).

ARIZONA STATE UNIVERSITY, Acting Chair, Materials Science and Engineering Program, School for Engineering of Matter, Transport, and Energy (8/10-1/11).

ARIZONA STATE UNIVERSITY, Professor of Materials Science and Engineering (primary appointment, with tenure) and Professor of Mechanical Engineering, School for Engineering of Matter, Transport, and Energy (formerly School of Materials), Fulton Schools of Engineering (8/06-3/12).

ARIZONA STATE UNIVERSITY, Honors Faculty, Barrett Honors College (8/04-8/20).

ARIZONA STATE UNIVERSITY, Associate Professor of Materials Science and Engineering (with tenure), Department of Chemical and Materials Engineering, Fulton Schools of Engineering (8/03-8/06).

ARIZONA STATE UNIVERSITY, Assistant Professor of Materials Science and Engineering, Department of Chemical and Materials Engineering, Fulton Schools of Engineering (1/00-8/03).

ARIZONA STATE UNIVERSITY, Director – Mechanical Behavior of Materials Facility, (8/01-2020); Graduate Affairs Chair – MSE Program (5/04-7/06); Graduate Admissions Chair – MSE Program, (6/00-5/04).

ARIZONA STATE UNIVERSITY, Joint Appointments – Center for Solid State Electronics Research (CSSER), (5/00-present); Leroy Eyring Center for Solid State Science (CSSS), (1/00-present); Center for Engineered Materials (CEMAT), (6/08-6/11).

TSINGHUA UNIVERSITY, Beijing, China, Visiting Professor (2011).

HOEGANAES CORP., Senior Development Engineer (2/99-12/99).

FORD MOTOR COMPANY AND UNIVERSITY OF MICHIGAN, Postdoctoral Research Fellow (6/97-2/99).

AWARDS, HONORS, AND ADVISORY BOARDS

- Ransburg Professor of Materials Engineering – Purdue University (2020-present).
- Acta Materialia Silver Medal (2018) – honors and recognizes "scientific contributions and leadership from academic, industry, and public sector leaders" internationally in Materials Science and Engineering.
- Distinguished Alumni Lecture (2018) – Department of Materials Science and Engineering, University of Michigan.
- Structural Materials Division Journal of Metals (JOM) Best Paper Award (2017), The Minerals, Metals, and Materials Society (TMS) – with S.S. Singh, T.J. Stannard, and X. Xiao, co-authors.
- Structural Materials Division Lecture (2017) – The Minerals, Metals, and Materials Society (TMS).
- Distinguished Alumni Achievement Award (2016) – New Mexico Tech. Recognizes "distinguished alumni who have attained extraordinary distinction in their chosen professional fields and personal endeavors, reflecting well on their education at and affiliation with New Mexico Tech."
- Structural Materials Division Distinguished Scientist/Engineer Award (2016) – The Minerals, Metals, and Materials Society (TMS).
- Functional Materials Division Distinguished Scientist/Engineer Award (2016) – The Minerals, Metals, and Materials Society (TMS).
- Science Award – Environmental Damage in Structural Materials Conference (2016) – Engineering Conferences International (ECI).
- Brimacombe Medalist – The Minerals, Metals, and Materials Society (TMS), (2013). Recognizes an individual with sustained excellence and achievement in business, technology, education, public policy, or science related to materials science and engineering.
- Fulton Professor of Materials Science and Engineering – Arizona State University (2012-2020).
- Editor – Materials Science and Engineering A (2012-present).
- Advisory Board – Department of Materials Science and Engineering, New Mexico Tech (2014-present)
- Advisory Board Review Panel – Advanced Photon Source, Argonne National Laboratory (2014-2015)
- Distinguished Lectureship – Tsinghua University, China (2011).
- Advisory Board Review Panel – Naval Research Laboratory Structural Materials Division (2011).

- Scientific Case Technical Lead – High Energy Tomography Beam-Line, Advanced Photon Source, Argonne National Laboratory, (2011).

- Rossiter W. Raymond Memorial Award, American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), 2009. Best paper in an AIME journal, whose author or co-author is under the age of 35 at the time of submission.

- Fellow of the Society, ASM International, 2008 (youngest fellow in the history of ASM, at the time of award).

- President's Academic Council – Advisory Council to ASU President Michael Crow (2009-2020).

- Board of Directors, Information Technology Director – The Minerals, Metals, and Materials Society (TMS), 2008-2011.

- Outstanding Poster Award, Powdermet 2007, Metal Powders Industry Federation (MPIF), 2007.

- Young Leaders Tutorial Lecture, The Minerals, Metals, and Materials Society (TMS), 2006.

- Bradley Stoughton Award for Young Teachers, ASM International, 2004.

- Howard I. Sanderow Outstanding Technical Paper Award, Metal Powders Industry Federation (MPIF), 2004.

- Associated Students Centennial Professorship (Professor of the Year Award, with nomination by students) – Finalist, Arizona State University, 2003, 2004, 2006.

- National Science Foundation Early Career Development Award, 2001.

- Office of Naval Research Young Investigator Award, 2001.

- Listed in *Marquis' Who's Who Albert Nelson Lifetime Achievement Award*, 2018-present; *Marquis' Who's Who in America*, 2001-present; *Who's Who in Engineering Education*, 2002-present*; Who's Who in Science and Engineering*, 2002-present; *Who's Who in the World*, 2002-present; and *Who's Who of Emerging Leaders (inaugural edition)*, 2006. *AcademicKeys Who's Who in Engineering Education (WWEE)*, 2006-present.

- R.L. Thakur Memorial Award – 1998, Indian Ceramic Society – outstanding scientist/engineer in materials science and engineering under the age of 35.

- Graduate Student Instructor of the Year Award for 1996-97 (finalist), College of Engineering, University of Michigan.

- 1st place in ASM International Graduate Student Paper Competition, 1996.

- Cramer award, O'Connor award, Paige Ashman Memorial Prize, Macey Scholarship, Presidential Scholarship – New Mexico Tech.

- Member – Tau Beta Pi (National Engineering Honor Society) and Alpha Sigma Mu (Materials and Metallurgical Engineering Honor Society).

PUBLICATIONS (354 total: 2 textbooks, 1 edited book, 271 refereed journal papers, 51 conference proceedings papers, 14 encyclopedia/book chapters, 6 patents and invention disclosures, and 9 commentaries/book reviews/forewords/corrigenda, Web of Science h-index of 48, Scopus h-index of 51, Google Scholar h-index of 57)

Textbooks (2)

1. **N. Chawla** and K.K. Chawla, **Metal Matrix Composites – 2nd Edition**, (2014), Springer, New York, ISBN-13: 978-1461495475.

2. **N. Chawla** and K.K. Chawla, **Metal Matrix Composites**, (2006), Springer, New York, ISBN 0387233067.

Edited Books (1)

3. K.K. Chawla and **N. Chawla**, **Mechanics of Materials – Measurements and Applications (Vol. 3)**, Springer-Nature, (2019).

Refereed Journal Papers (271)

4. Y. Zhao, S. Niverty, X. Ma, X. Liu, and **N. Chawla**, "Correlation Between Corrosion Behavior and Grain Boundary Characteristics of a 6061 Al Alloy by Lab-scale X-ray Diffraction Contrast Tomography (DCT)," *Corros. Sci*., (2021) in preparation.

5. H. Torbati-Sarraf, S. Niverty, R. Singh, D. Barboza, V. De Andrade, P. Turaga, and **N. Chawla**, "Machine Learning-based Algorithms for Automated Image Segmentation Techniques of Transmission X-ray Microscopy (TXM)," *JOM*, (2021) submitted.

6. M. Rose, S. Niverty, B. Schmidt, M. Kästner, M. Zimmermann, and **N. Chawla**, "X-ray Computer Tomography of Fatigue Damage in Laser-Machined versus Milled Carbon Fiber Reinforced Polymer Matrix Composites," *Eng. Frac. Mech*., (2021) submitted.

7. A.G. Hasib, S. Niauzorau, W. Xu, S. Niverty, J. Williams, J. Markovski, N. Kublik, **N. Chawla**, K. Song, and B. Azeredo, "Rheology scaling of spherical metal powders dispersed in thermoplastics and its correlation to the extrudability of filaments for 3D printing," *Additive Manufac*., (2021) submitted.

8. S. Niverty, C. Kale, K.N. Solanki, and **N. Chawla**, "Multiscale Investigation of Damage Initiation and Propagation During Corrosion of AA7075-T651 using Correlative Microscopy," *Corros. Sci*., (2021) in revision.

9. M.A. Jansen, S. Niverty, **N. Chawla**, and N.M. Franz, "Reducing the risk of rostral bending failure," *Acta Biomater.*, (2021) in revision.

10. S. Niverty and **N. Chawla**, "4D Microstructural Characterization of Corrosion and Corrosion-Fatigue in a Ti-6Al-4V / AA7075-T651 Joint in Saltwater Environment," *Int. J. Fatigue*, (2021) in revision.

11. A.S.S. Singaravelu, J.J. Williams, J. Walter, M. Henderson, C. Holmes, and **N. Chawla**, "*In Situ* X-ray Microtomography of the Compression Behavior of ETPU Bead Foams with a Unique Graded Structure," *J. Mater. Sci*., (2021) **56** 5082-5099.

12. M. Branch Kelly, A. Antonisamy, R. Mahajan, and **N. Chawla**, "Effect of Trace Addition of In on Sn-Cu Solder Joint Microstructure under Electromigration," *J. Electr. Mater*., (2020) in press.

13. D. Goss, Y. Mistry, S. Niverty, C. Noe, B. Santhanam, C. Ozturk, C. Penick, C. Lee, **N. Chawla**, A. Grishin, V. Shyam, and D. Bhate, "Bio-Inspired Honeycomb Core Design: An Experimental Study of the Role of Corner Radius, Coping, and Interface," *Biomimetics*, (2020) **5** 1-24.

14. I. Ridha, A. Basiri, S. Godeshala, M.Z.E. Rafique, D. Ghosh, J.J. Williams, **N. Chawla**, J.K. Lee, J. Kilbourne, Y. Yao, and K. Rege, "Chromophore-free Sealing and Repair of Soft Tissues using Mid-Infrared Light and Biosealants," *Adv. Func. Mater.*, (2020) **2007811** (1-13).

15. H. Gopalakrishna, A. Sinha, J. Carpenter, S. Niverty, **N. Chawla**, D. Jordan, and G. Tamizhmani, "Activation Energy for End-of-Life Solder Bond Degradation: Thermal Cycling of Field-aged PV Modules," *IEEE J. Photovoltaics*, (2020) **10** 1762-1771.

16. Y. Zhao, S. Niverty, X. Ma, X. Liu, and **N. Chawla**, "3D Grain Structure of an Extruded 6061 Al alloy by Lab-scale X-ray Diffraction Contrast Tomography (DCT)," *Mater. Charac*., (2020) **170** 110716 (1-8).

17. L.W. Yang, C.R. Mayer, **N. Chawla**, J. LLorca, and J.M. Molina-Aldareguía, "Nanomechanical Characterization of the Fracture Toughness of Al/SiC Nanolaminates," *Extreme Mech. Lett*., (2020) **40** 100945 (1-8).

18. B.M. Patterson, L. Kuettner, T. Shear, K. Henderson, M.J. Herman, A. Ionita, J.J. Williams, **N. Chawla**, T. Sun, K. Fezzaa, X. Xiao, and C. Welch, "Synchrotron CT Imaging of Lattice Structures with Engineered Defects," *J. Mater. Sci*., (2020) **55** 11353–11366.

19. H. Torbati-Sarraf, S.A. Torbati-Sarraf, **N. Chawla**, and A. Poursaee, "A comparative study of corrosion behavior of an additively manufactured Al-6061 RAM2 with extruded Al-6061 T6," *Corros. Sci*., (2020) **174** 1-15.

20. Z. Wang, A.S.S. Singaravelu, R. Dai, Q. Nian, **N. Chawla**, and R.Y. Wang, "Ligand Crosslinking Boosts Thermal Transport in Colloidal Nanocrystal Solids," *Angewandte Chemie*., (2020) **59** 9556-9563.

21. R. Yuan, S.S. Singh, X. Liao, J. Oswald, and **N. Chawla**, "Fracture Analysis of Particulate Metal Matrix Composites using X-ray Tomography and Extended Finite Element Method (XFEM)," *J. Compos. Sci*., (2020) **62** 1-21.

22. M. Branch Kelly, T. Maity, A.R.N. Sakib, D.R. Frear, and **N. Chawla**, "Influence of Substrate Surface Finish Metallurgy on Lead-Free Solder Joint Microstructure and Board-Level Reliability," *J. Electr. Mater*., (2020) **49** 3251-3258.

23. M. Branch Kelly, S. Niverty, and **N. Chawla**, "Four Dimensional (4D) Microstructural Evolution of Cu_6Sn_5 Intermetallic and Voids Under Electromigration in Bi-crystal Pure Sn Solder Joints," *Acta Mater*., (2020) **189** 118-128.

24. T. Gao, A.S.S. Singaravelu, S. Oka, R. Ramachandran, F. Štepánek, **N. Chawla**, and H.N. Emady, "Powder Bed Packing and API Content Homogeneity of Granules in Single Drop Granule Formation," *Powder Tech*., (2020) **366** 12-21.

25. H. Torbati-Sarraf, T.J. Stannard, E. Callagon, G.N. Sant, and **N. Chawla**, "Direct Observations of Microstructure-Resolved Corrosion Initiation in Aluminum Alloys at the Nanoscale," *Mater. Charac.*, (2020) **161** 110166.

26. Y. Zhao, A.S.S. Singaravelu, X. Ma, Q. Zhang, X. Liu, and **N. Chawla**, "Micromechanical properties and deformation behavior of Al_3BC/6061 Al composites *via* micropillar compression," *Mater. Sci. Eng. A*, (2020) **773** 138852 (1-9).

27. Y. Zhao, A.S.S. Singaravelu, X. Ma, X. Liu, and **N. Chawla**, "Mechanical properties of Al_3BC by nanoindentation and micropillar compression," *Mater. Lett*., (2020) **264** 127361 (1-4).

28. Y. Zhao, A.S.S. Singaravelu, X. Ma, Q. Zhang, S.L.Y. Chang, X. Liu, and **N. Chawla**, "Unveiling the deformation behavior and strengthening mechanisms of Al_3BC/Al composites *via* in-situ micropillar compression," *J. Alloys Compd.*, (2020) **823** 153842 (1-6).

29. M. Branch Kelly, S. Niverty, and **N. Chawla**, "Electromigration in Bi-crystal Pure Sn Solder Joints: Elucidating the Role of Grain Orientation," *J. Alloys Compd*., (2020) **818** 152918 (1-17).

30. A.S.S. Singaravelu, J.J. Williams, H.D. Goyal, S. Niverty, S.S. Singh, T.J. Stannard, X. Xiao, and **N. Chawla**, "3D Time-Resolved Observations of Fatigue Crack Initiation and Growth from Corrosion Pits in Al 7XXX Alloys Using *In Situ* Synchrotron X-ray Tomography," *Metall. Mater. Trans*., (2020) **51** 28-41.

31. J.J. Williams, I. Lujan Regalado, L. Liu, S. Joshi, and **N. Chawla**, "Effect of Component Flexibility during Thermal Cycling of Sintered Nano-Silver Joints by X-ray Microtomography," *J. Electr. Mater*., (2020) **49** 241-244.

32. M. Branch-Kelly, A. Kirubanandham, and **N. Chawla**, "Mechanisms of Thermal Cycling Damage in Polycrystalline Sn-rich Solder Joints," *Mater. Sci. Eng. A*, (2020) **A771** 138614.

33. S. Singh, H. Li, S.S. Singh, J.J. Williams, T.J. Stannard, X. Xiao, Y. Jiao, and **N. Chawla**, "Microstructural Characterization and Mechanical Property Prediction of a Polymer Matrix Composite by X-ray Synchrotron Tomography and Spatial Correlation Functions," *Appl. Sci*., (2019) **1** 3102.

34. P.-E. Chen, W. Xu, **N. Chawla**, Y. Ren, and Y. Jiao, "Hierarchical n-Point Polytope Functions for Quantitative Representation of Complex Heterogeneous Materials and Microstructural Evolution," *Acta Mater*., (2019) **179** 317-327.

35. M.A. Jansen, J.J. Williams, **N. Chawla**, and N.M. Franz, "Microstructure and mechanical behavior of the acorn weevil exoskeleton," *Advanced Materials*, (2019) 1903526 (1 of 9).

36. C.S. Kaira, T.J. Stannard, V. De Andrade, F. De Carlo, and **N. Chawla**, "Novel Deformation Mechanisms in Aluminum-Copper Alloys Using *in situ* 4D Nanomechanical Testing," *Acta Mater.*, (2019) **176** 242-249.

37. Q. Zhang, K. Zhu, A.S.S. Singaravelu, W. Sun, T. Jing, and **N. Chawla**, "Three-dimensional (3D) Finite Element Analysis of a Thermally-aged Cast Duplex Stainless Steel by Nanoindentation, Micropillar Compression and X-ray Microtomography," *Metals*, (2019) **9** 688.

38. S. Niverty, J. Sun, J.J. Williams, F. Bachmann, N. Gueninchault, E. Lauridsen, and **N. Chawla**, "A Forward Modeling Approach to High Reliability Grain Mapping by Lab-Scale Diffraction Contrast Tomography (Lab-DCT)," *JOM*, (2019) **71** 2695-2704 (cover image).

39. I. Lujan-Regalado, J.J. Williams, S. Joshi, E. Dede, Y. Liu, and **N. Chawla**, "X-Ray Microtomography of Thermal Cycling Damage in Sintered Nano-Silver Solder Joints," *Adv. Eng. Mater*., (2019) **21** 1801029 (1 of 15), (cover image).

40. S. Singh, S. Chang, C.S. Kaira, J.K. Baldwin, N.A. Mara, and **N. Chawla**, "Microstructure and Mechanical Properties of Co-Sputtered Al-SiC Composites," *Mater. & Design*, (2019) **168** 107670.

41. S. Singh, C.S. Kaira, H. Bale, C. Huynh, A.P. Merkle, and **N. Chawla**, "*In Situ* Micropillar Compression of Al/SiC Nanolaminates using Laboratory-Based Nanoscale X-ray Microscopy: Effect of Nanopores on Mechanical Behavior," *Mater. Charac*., (2019) **150** 207-212.

42. Q. Zhang, S. Niverty, A.S.S. Singaravelu, J.J. Williams, E. Guo, T. Jing, and **N. Chawla**, "Microstructure and Micropore Formation in a Centrifugally-Cast Duplex Stainless Steel via X-Ray Microtomography," *Mater. Charac*., (2019) **148** 52-62.

43. I. Lujan-Regalado, A. Kirubanandham, J.J. Williams, and **N. Chawla**, "Effect of Crystallographic Orientation and Microstructure on the Nucleation and Growth of Tin Hillocks by *In Situ* Nanoindentation and Electron Backscattered Diffraction (EBSD)," *J. Electron. Mater.*, (2019) **48** 58-71.

44. Q. Zhang, A.S.S. Singaravelu, Y. Zhao, T. Jing, and **N. Chawla**, "Mechanical properties of a thermally-aged cast duplex stainless steel by nanoindentation and micropillar compression," *Mater. Sci. Eng. A*, (2019) **743** 520-528.

45. T. Gao, A.S.S. Singaravelu, S. Oka, R. Ramachandran, F. Štepánek, **N. Chawla**, and H.N. Emady, "Granule Formation and Structure from Single Drop Impact on Heterogeneous Powder Beds," *Int. J. Pharmaceutics*, (2018) **552** 56-66.

46. T.P. Remington, J.C.E. Mertens, E.N. Hahn, S. Sabbaghianrad, T.G. Langdon, C.E. Wehrenberg, B.R. Maddox, D.C. Swift, B.A. Remington, **N. Chawla**, and M.A. Meyers, "Spall Strength Dependence on Strain Rate and Grain Size in Tantalum," *Acta Mater.*, (2018) **158** 313-329.

47. R. Vallabhaneni, T.J. Stannard, C.S. Kaira, and **N. Chawla**, "3D X-ray Microtomography and Mechanical Characterization of Corrosion-induced Damage in 7075 Aluminum (Al) alloys," *Corros. Sci*., (2018) **139** 97-113.

48. T.J. Stannard, J.J. Williams, S.S. Singh, A.S.S. Singaravelu, X. Xiao, and **N. Chawla**, "3D Time-Resolved Observations of Corrosion and Corrosion-Fatigue Crack Initiation and Growth in Peak-Aged Al 7075 Using Synchrotron X-ray Tomography," *Corros. Sci*., (2018) **138** 340-352.

49. C.S. Kaira, X. Yang, V. De Andrade, F. De Carlo, W. Scullin, D. Gursoy, and **N. Chawla**, "Automated Correlative Segmentation of large Transmission X-ray Microscopy (TXM) Tomograms using Deep Learning," *Mater. Charac*., (2018) **142** 203–210.

50. H. Li, S. Singh, **N. Chawla**, and Y. Jiao, "Direct Extraction of Spatial Correlation Functions from Limited X-ray Tomography Data for Microstructural Quantification," *Mater. Charac*., (2018) **140** 265-274.

51. C.S. Kaira, C. Kantzos, J.J. Williams, V. De Andrade, F. De Carlo, and **N. Chawla**, "Microstructural Evolution and Deformation Behavior of Al-Cu Alloys: a Transmission X-Ray Microscopy (TXM) and Micropillar Compression Study," *Acta Mater.*, (2018) **144** 419–431.

52. L.W. Yang, C.R. Mayer, N. Li, J.K. Baldwin, N.A. Mara, **N. Chawla**, J.M. Molina-Aldareguia, and J. LLorca, "Mechanical properties of metal-ceramic nanolaminates: Effect of constraint and temperature," *Acta Mater*., (2018) **142** 37-48.

53. S. Das, X. Xiao, **N. Chawla**, and N. Neithalath, "Effective Constitutive Response of Sustainable Next Generation Infrastructure Materials through High-Fidelity Experiments and Numerical Simulation," *Procedia Eng.*, (2017) **173** 1258 – 1265.

54. R. Vallabhaneni, E. Izadi, C.R. Mayer, C.S. Kaira, S.S. Singh, J. Rajagopalan, and **N. Chawla**, "*In situ* Tensile Testing of Tin (Sn) Whiskers in a Focused Ion Beam (FIB)/Scanning Electron Microscope (SEM)," *Microelectron. Reliab.*, (2017) **79** 314–320.

55. C.S. Kaira, V. De Andrade, S.S. Singh, C. Kantzos, A. Kirubanandham, F. De Carlo, and **N. Chawla**, "Four-dimensional Nanoscale Evolution in Aluminum alloys using Transmission X-Ray Microscopy (TXM)," *Advanced Materials*, (2017) **29** 1-8.

56. X. Wang, S.S. Singh, T. Ma, C. Lv, **N. Chawla**, and H. Jiang, "Quantifying Electrochemical Reactions and Properties of Amorphous Silicon in a Realistic Lithium-Ion Battery Configuration," *ACS Chemistry of Mater.*, (2017) **29** 5831-5840.

57. J.C.E. Mertens, K. Henderson, N.L. Cordes, R. Pacheco, X. Xiao, J.J. Williams, **N. Chawla**, and B.M. Patterson, "Analysis of Anisotropy and Thermal History Effects on the Tensile Behavior of a 3D Printed

Polymer Matrix Composite *via* 4 Hz *In Situ* X-ray Tomography," *J. Mater. Sci*., (2017) **52** 12185-12206 (finalist for 2017 Cahn Prize).

58. S.S. Singh, T.J. Stannard, X. Xiao, and **N. Chawla**, "*In Situ* X-ray Microtomography of Stress Corrosion Cracking and Corrosion-Fatigue," *JOM*, (2017) **69** 1404-1414.

59. M. Kotoul, P. Skalka, O. Ševeček, L. Bertolla, J.C.E. Mertens, P. Marcián, and **N. Chawla**, "Crack bridging modelling in Bioglass® based scaffolds reinforced by poly-vinyl alcohol/microfibrillated cellulose composite coating," *Mech. Mater*., (2017) **110** 16-28.

60. E. Guo, S.S. Singh, C. Mayer, X. Meng,Y. Xu, L. Luo, M. Wang, and **N. Chawla**, "Effect of gallium addition on the microstructure and micromechanical properties of constituents in Nb-Si based alloys," *J. Alloys Compd*., (2017) **704** 89-100.

61. E. Guo, S.S. Singh, C.S. Kaira, X. Meng, Y. Xu, L. Luo, M. Wang, and **N. Chawla**, "Mechanical properties of microconstituents in Nb-Si-Ti alloy by micropillar compression and nanoindentation," *Mater. Sci. Eng*., (2017) **A687** 99-106.

62. L.W. Yang, C.R. Mayer, **N. Chawla**, J. LLorca, and J.M. Molina-Aldareguía, "Deformation mechanisms of Ultra-Thin Al layers in Al/SiC Nanolaminates as a Function of Thickness and Temperature," *Phil. Mag*., (2016) **96** 3336-3355.

63. H. Li, C.S. Kaira, J.C.E. Mertens, **N. Chawla**, and Y. Jiao, "Accurate Stochastic Reconstruction of Heterogeneous Material Microstructure from Limited X-ray Tomographic Projections: Algorithm Details and Applications," *J. Microscopy*, (2016) **264** 339-350.

64. A. Kirubanandham, I. Lujan-Regalado, R. Vallabhaneni, and **N. Chawla**, "Three-Dimensional Characterization of Tin Crystallography and Cu_6Sn_5 Intermetallics in Solder Joints at Extremely Small Length Scales," *JOM*, (2016) **68** 2879-2887.

65. M. Aguayo, S. Das, A. Maroli, N. Kabay, J.C.E. Mertens, S.D. Rajan, G. Sant, **N. Chawla**, and N. Neithalath, "The Influence of Microencapsulated Phase Change Materials (PCM) on the Microstructure and Strength of Cementitious Composites: Experiments and Finite Element Simulations," *Cement Concrete Comp*., (2016) **73** 29-41.

66. C.S. Kaira, C.R. Mayer, V. De Andrade, F. De Carlo, and **N. Chawla**, "Nanoscale Three-Dimensional Microstructural Characterization of Sn-rich Solder Alloy using High Resolution Transmission X-Ray Microscopy (TXM)," *Microsc. Microanal.*, (2016) **22** 808–813.

67. C.R. Mayer, J. Molina-Aldareguia, and **N. Chawla**, "Three Dimensional (3D) Microstructure-Based Finite Element Modeling of Al-SiC Nanolaminates Using Focused Ion Beam (FIB) Tomography," *Mater. Charac*., (2016) **120** 369–376.

68. C.S. Kaira, S.S. Singh, A. Kirubanandham, and **N. Chawla**, "Microscale Deformation Behavior of Bicrystals in Pure Tin (Sn) using Micropillar Compression," *Acta Mater*., (2016) **120** 55-67.

69. H. Li, S. Singh, C.S. Kaira, J.C.E. Mertens, J.J. Williams, **N. Chawla**, and Y. Jiao, "Microtructural Quantification and Property Prediction Using Limited X-ray Tomography Data," *JOM*, (2016) **68** 2288-2295.

70. M.A. Jansen, S.S. Singh, N.M. Franz, and **N. Chawla**, "A Multilayer Micromechanical Model of the Cuticle of *Curculio longinasus* Chittenden, 1927 (Coleoptera: Curculionidae)," *J. Struc. Biol*., (2016) **195** 139-158.

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45. **N. Chawla**, "Microstructural Design and Characterization of the Next Generation of Pb-free Solders," *SRC E-workshop*, (2010).

46. **N. Chawla**, "3D Materials Science: A Wonderful Toolbox for Understanding Deformation Behavior of Complex Materials," *Pontifica Universidade Catolica, Rio de Janeiro, Brazil*, (2010).

47. **N. Chawla**, "3D Materials Science: A Wonderful Toolbox for Understanding Deformation Behavior of Complex Materials," *Advanced Photon Source, Argonne National Laboratory,* Argonne, IL, (2010).

48. **N. Chawla**, "3D Materials Science: A Wonderful Toolbox for Understanding Deformation Behavior of Complex Materials," *Department of Mechanical Engineering, University of Texas at Austin,* Austin, TX, (2010).

49. **N. Chawla**, "Mechanics of Deformation in Pb-free Solders: Constitutive Properties and Mechanical Shock Behavior," *Pb-free Solder Technology Workshop,* Seattle, WA, (2010).

50. **N. Chawla**, "Scratch Testing and Micropillar Compression of Nanolaminates," *Agilent eSeminar*, (2010).

51. **N. Chawla**, "The Next Generation of Pb-free Solders: Oxidation-Resistant Rare-Earth Containing Solders with Enhanced Ductility," *Intel*, Chandler, AZ, (2009).

52. **N. Chawla**, "Deformation Behavior at Multiple Length Scales," *Department of Civil Engineering, Universidade Federal do Rio de Janeiro*, Rio de Janeiro, Brazil, (2009).

53. **N. Chawla**, "Environmentally-Benign Pb-free Metallic Alloys: Complex Load-Bearing Materials in Electronic Packaging," *Department of Materials Science and Engineering, University of Michigan*, Ann Arbor, Michigan, (2009).

54. **N. Chawla**, "Multilayered Materials: From Kit-Kat Bars to Nanolayered Materials," *Department of Materials Science and Engineering, University of Arizona*, Tucson, Arizona, (2008).

55. **N. Chawla**, "Layered Materials: Engineered Structures Ranging from Macro to Nanoscale," *Tau Beta Pi AZB*, Tempe, Arizona, (2008)

56. **N. Chawla**, "Environmentally-Benign Pb-free Solders for Electronic Packaging: Microstructure Characterization and Mechanics of Deformation," *Department of Materials Science and Engineering, Rensselaer Polytechnic Institute*, Troy, New York, (2008).

57. **N. Chawla** and H. Jiang, "Mechanics of Deformation in Pb-free Solders: Microstructure, Thermomechanical Behavior, and Shock/Vibration Fatigue," *Intel*, Chandler, Arizona, (2007).

58. **N. Chawla**, "Mechanics of Engineered Materials at Multi-Length Scales," *Center for Engineered Materials (CEMAT), Arizona State University*, Tempe, Arizona, (2007).

59. **N. Chawla**, "Understanding Deformation Behavior of Materials Through Microstructure-Based Modeling," *Polytechnic University of Madrid*, Madrid, Spain, (2007).

60. **N. Chawla**, "Understanding Deformation Behavior of Materials Through Microstructure-Based Modeling," *Technical University of Vienna,* Vienna, Austria, (2007).

61. **N. Chawla**, "Deformation Behavior of Environmentally-Benign Pb-free Solders," *Federal Institute for Testing and Materials (BAM),* Berlin, Germany, (2007).

62. **N. Chawla**, "Understanding Deformation Behavior of Materials Through Microstructure-Based Modeling," *Federal Institute for Testing and Materials (BAM),* Berlin, Germany, (2007).

63. **N. Chawla**, "Understanding Deformation Behavior of Materials Through Microstructure-Based Modeling," *Department of Materials Science and Engineering, Imperial College*, London, United Kingdom, (2007).

64. **N. Chawla**, "Understanding Deformation Behavior of Materials Through Microstructure-Based Modeling," *Department of Materials Science and Engineering, University of Manchester,* Manchester, United Kingdom, (2007).

65. **N. Chawla**, "Deformation Behavior of Environmentally-Benign Pb-free Solders," *Department of Materials Science and Engineering, University of Alabama,* Tuscaloosa, AL, (2007).

66. **N. Chawla**, "Engineering Disasters – Learning from Failure," *Department of Materials Science and Engineering, University of Alabama at Birmingham,* Birmingham, AL, (2007).

67. **N. Chawla**, "Understanding Deformation Behavior of Materials: Microstructure-Based Modeling," *Department of Materials Science and Engineering, University of Alabama at Birmingham,* Birmingham, AL, (2007).

68. **N. Chawla**, "Deformation Behavior of Environmentally-Benign Pb-free Solders," *Department of Materials Science and Engineering, North Carolina State University*, Raleigh, NC, (2006).

69. **N. Chawla**, "Fundamental Research on Environmentally-Benign Pb-free Solders," *TMS/SMTA Webcast*, (2006).

70. A. Ayyar and **N. Chawla**, "OOF and Beyond: 2D Plasticity and 3D Microstructure-based Modeling," *Object Oriented Finite (OOF) Element Modeling Workshop – National Institute of Standards and Technology*, Gaithersburg, MD, (2006).

71. **N. Chawla**, "Integrating Dissimilar Materials in Electronic Packaging," *Center for Engineered Materials in Advanced Packaging Systems Workshop, Arizona State University*, Tempe, AZ, (2006).

72. **N. Chawla**, "Hinduism: A Practicing Devotee's Perspective," *Scottsdale Community College*, Scottsdale, AZ, (2006).

73. **N. Chawla**, "Thermomechanical Behavior and Microstructure Evolution of Pb-free Solders," *IEEE Phoenix Chapter*, Tempe, AZ, (2006).

74. **N. Chawla**, "Negotiating Life in Academia – a Young Faculty Member's Perspective," *Young Leader's Tutorial Lecture, TMS Annual Meeting,* San Antonio, TX, (2006).

75. **N. Chawla**, "Deformation Behavior at Micrometer and Nanometer Length Scales," *Department of Mechanical and Materials Engineering, Washington State University*, Pullman, WA, (2005).

76. **N. Chawla**, "Mechanical Behavior of Environmentally-Benign Pb-free Solders," *Intel*, Chandler, AZ, (2005).

77. **N. Chawla**, "3D Microstructure Visualization and Finite Element Modeling of the Mechanical Behavior of

Heterogeneous Materials," *Naval Research Laboratory*, Washington, D.C., (2005).

78. **N. Chawla**, "Environmentally-Benign Pb-free Solder Alloys in Electronic Packaging," *Center for Solid State Electronics Research, Arizona State University*, Tempe, AZ, (2004).

79. **N. Chawla**, "Challenges in Environmentally-Benign Solders for Electronic Packaging," *Workshop on Challenges in Electronic Packaging*, Tempe, AZ, (2004).

80. **N. Chawla**, "Deformation Behavior and Microstructure Evolution in Pb-free Solders," *Intel Corp*., Chandler, AZ, (2004).

81. **N. Chawla**, "Environmentally Benign Materials for Electronic Packaging," *University of Alabama at Birmingham*, Birmingham, AL, (2004).

82. **N. Chawla**, "Engineering Disasters: Learning from Failure," *ASM Phoenix Chapter*, Phoenix, AZ, (2003).

83. **N. Chawla**, "Engineering Disasters: Learning from Failure," *Engineers Club of the Sun Cities Area*, Phoenix, AZ, (2003).

84. **N. Chawla**, "Metal Matrix Composites: Low-cost, Lightweight, High Performance Materials," *Arizona State University*, Tempe, AZ, (2002).

85. **N. Chawla**, "Metal Matrix Composites: Applications, Current Research, and Future Directions," *Honeywell Corp.*, Phoenix, AZ, (2002).

86. **N. Chawla**, "Why did the Titanic sink?," *Arizona Science Center*, Phoenix, AZ, (2002).

87. **N. Chawla**, "Mechanical Behavior of Discontinuously Reinforced Aluminum Alloys," *University of California at San Diego*, San Diego, California, (2002).

88. **N. Chawla**, "NSF Early Career Award – Perspective of a New Grantee," *NSF Grantees Conference*, San Juan, Puerto Rico, (2002).

89. **N. Chawla**, "Environmentally Benign Materials: Lead-free Solder Alloys for Microelectronics Packaging," *Engineering Excellence Awards Symposium, Arizona State University*, Tempe, AZ, (2001).

90. **N. Chawla** and J.J. Williams, "Microstructure Evolution in Pb-free Solders," *Intel Corp*., Chandler, AZ, (2001).

91. D.T. Vonk, R. Saha, J.J. Williams, and **N. Chawla**, "Object Oriented Finite Element Analysis of Composite Microstructures," *Object Oriented Finite Element Workshop, National Institute of Standards and Technology*, Gaithersburg, MD, (2001).

92. **N. Chawla,** "Fatigue Crack Initiation and Propagation of Ferrous Powder Metallurgy Alloys," *Hoeganaes Corp.*, Cinnaminson, NJ, (2001).

93. **N. Chawla**, "Mechanical Behavior of Discontinuously Reinforced Aluminum Alloys," *Department of Mechanical and Materials Engineering, University of Alabama at Birmingham*, Birmingham, AL, (2001).

94. J.J. Williams, G. Piotrowski, and **N. Chawla**, "Environmentally Benign Pb-free Solders for Microelectronics Packaging Applications," *National Science Foundation Engineering Research Center for Environmentally Benign Semiconductor Manufacturing*, Tucson, AZ, (2001).

95. **N. Chawla**, "Mechanical Behavior of Discontinuously Reinforced Aluminum Alloys," *Department of Materials Science and Engineering, Case Western Reserve University*, Cleveland, OH, (2001).

96. **N. Chawla**, "Metal Matrix Composites: Applications, Current Research, and Future Directions," *ASM Phoenix Chapter*, Phoenix, AZ, (2000).

97. **N. Chawla**, "An Overview of Mechanical Behavior of Materials Research," *Department of Chemical and Materials Engineering*, Arizona State University, Tempe, AZ, (2000).

98. **N. Chawla**, "Metal Matrix Composites: Applications, Current Research and Future Directions," *ASU-ASM Student Chapter Seminar*, Tempe, AZ, (2000).

99. **N. Chawla**, "Fatigue Behavior of Particle Reinforced Metal Matrix Composites," *Department of Chemical, Bio, and Materials Engineering, Arizona State University*, Tempe, AZ, (1999).

100. **N. Chawla**, "Fatigue Behavior of Powder Metallurgy Particle Reinforced Aluminum (PMPRA), " *Department of Mechanical Engineering, University of New Mexico*, Albuquerque, NM, (1999).

101. **N. Chawla**, "PNGV Sponsored Fatigue of Particle Reinforced Metal Matrix Composites," *National Institute of Standards and Technology (NIST)*, Gaithersburg, MD, (1999).

102. **N. Chawla**, "Fatigue Behavior of Powder Metallurgy Particle Reinforced Aluminum (PMPRA)," *Hoeganaes Corp.*, Cinnaminson, NJ, (1998).

103. **N. Chawla**, "Fatigue Behavior of Powder Metallurgy Particle Reinforced Aluminum (PMPRA)," *Southwest Research Institute*, San Antonio, TX, (1998).

104. **N. Chawla**, "Fatigue Behavior of Powder Metallurgy Particle Reinforced Aluminum (PMPRA)," *Reynolds Metals Co*., Richmond, VA, (1998).

105. **N. Chawla**, "Fatigue of Particle Reinforced Metal Matrix Composites," *Department of Materials Science and Engineering, University of Tennessee*, Knoxville, TN, (1998).

106. **N. Chawla**, "Fatigue of Particle Reinforced Metal Matrix Composites," *Department of Materials Science and Engineering, North Carolina State University*, Raleigh, NC, (1998).

107. **N. Chawla**, "Fatigue of Particle Reinforced Metal Matrix Composites," *Department of Materials and Mechanical Engineering, University of Alabama-Birmingham*, Birmingham, AL, (1998).

108. **N. Chawla**, "Fatigue of Particle Reinforced Metal Matrix Composites," *NASA Lewis Research Center*, Cleveland, OH, (1998).

109. **N. Chawla**, "High Frequency Fatigue of Continuous Fiber Reinforced Ceramic Matrix Composites," *Materials and Mechanics Department, Aerospace Co.*, El Segundo, CA, (1997).

110. **N. Chawla**, "High Frequency Fatigue of Continuous Fiber Reinforced Ceramic Matrix Composites," *Department of Mechanical Engineering, Louisiana State University*, Baton Rouge, LA, (1997).

111. **N. Chawla**, "Composite Materials: Science and Engineering," *Department of Mechanical Engineering, Southern University*, Baton Rouge, LA, (1997).

112. **N. Chawla**, "High Frequency Fatigue of Continuous Fiber Reinforced Ceramic Matrix Composites," *Department of Ceramic Engineering, Rutgers University*, Piscathaway, NJ, (1997).

113. **N. Chawla**, "High Frequency Fatigue of Continuous Fiber Reinforced Ceramic Matrix Composites," *Scientific Research Laboratory, Ford Motor Company*, Dearborn, MI, (1997).

114. **N. Chawla**, "High Frequency Fatigue of Continuous Fiber Reinforced Ceramic Matrix Composites," *Chemistry and Materials Sciences Department, Pacific Northwest National Laboratory*, Richland, WA, (1997).

115. **N. Chawla**, "High Frequency Fatigue of Continuous Fiber Reinforced Ceramic Matrix Composites," *Department of Materials Science and Engineering, University of Michigan*, Ann Arbor, MI, (1996).

116. **N. Chawla**, "High Frequency Fatigue of Continuous Fiber Reinforced Ceramic Matrix Composites," *Department of Mechanical Engineering and Applied Mechanics, University of Michigan*, Ann Arbor, MI, (1996).

117. **N. Chawla** and J.W. Holmes, "High Frequency Fatigue of Continuous Fiber Reinforced Ceramic Matrix Composites," *Dow Corning Corp*., Midland, MI, (1996).

118. **N. Chawla**, "Effect of Fabric Orientation on the Mechanical Properties of Continuous Fiber Ceramic Composites (CFCCs)," *Ceramics Section, Argonne National Laboratory*, Argonne, IL, (1994).

Invited conference talks (102)

119. A. Sundar, J. Williams, J. Walter, M. Drexler, C. Holmes, P. Shevchenko, F. De Carlo, and **N. Chawla**, "4D X-ray Tomography and Correlative Microscopy of Graded Polymeric Foams in High Performance Footwear," *Tomography for Scientific Advancement (ToSCa) 2020*, online congress, (2020).

120. A. Sundar, J. Williams, H. Goyal, S. Niverty, S. Singh, X. Xiao, T. Stannard, **N. Chawla**, "In-situ X-ray Microtomography to Elucidate Corrosion-fatigue Mechanisms in Aluminum Alloys," *TMS Annual Meeting*, San Antonio, (2020).

121. **N. Chawla**, "4D X-ray Tomography and Correlative Microscopy of Composite Materials," *TMS Annual Meeting*, San Antonio, (2020).

122. M. Branch Kelly and **N. Chawla**, "Mechanisms of Electromigration in Bicrystal Sn Solder Joint by Correlative X-ray Tomography and Microscopy," *TMS Annual Meeting*, San Antonio, (2020).

123. **N. Chawla**, "Probing Mechanisms of Corrosion in Aluminum Alloys by Correlative Tomography and Microscopy," *TMS Annual Meeting*, San Antonio, (2019).

124. **N. Chawla**, "4D Materials Science: Probing Microstructural Evolution of Metallic Materials in Real-Time," *Acta Materialia Symposium*, *TMS Annual Meeting*, Phoenix AZ, (2018).

125. **N. Chawla**, "Additive Manufacturing at Arizona State University," *Additive Manufacturing Consortium Winter Meeting*, Phoenix, AZ, (2018).

126. **N. Chawla**, "Deformation Behavior of Al/SiC Nanolaminates: Experiments and Simulation," *MST 2017*, Pittsburgh, PA, (2017).

127. **N. Chawla**, "Anisotropy and Thermal History Effects on the Tensile Behavior of a 3D Printed Polymer Matrix Composite via *In Situ* Synchrotron X-ray Tomography," *MST 2017*, Pittsburgh, PA, (2017).

128. **N. Chawla** (*keynote*), "*In situ* Materials Science: Probing Microstructural Evolution of Materials in Real-Time," *3D Digital Methods Workshop, Carnegie Mellon University*, Pittsburgh, PA, (2017).

129. **N. Chawla**, "*In Situ* Materials Science: Probing Microstructural Evolution of Metallic Materials in Real-Time," *Workshop on X-ray Characterization of Materials Evolution: The State-of-the-Art*, Advanced Photon Source, Argonne, IL, (2017).

130. C. Mayer, L. Yang, S. Lotfian, H. Bale, C.S. Kaira, N. Li, J.K. Baldwin, N. Mara, A. Merkle, J.M. Molina-Aldareguía, and **N. Chawla**, "High Temperature Deformation Behavior, X-ray Nanotomography, and Modeling of Al/SiC Nanolaminates," *MRS Spring Meeting*, Phoenix, AZ, (2017).

131. **N. Chawla**, "Creep of Environmentally-Benign Pb-free Solder Alloys: Complex Load Bearing Materials in Electronic Packaging," *(Keynote)*, *TMS Annual Meeting*, San Diego, CA, (2017).

132. A. Kirubanandham and **N. Chawla**, "*In situ* Characterization of Electromigration and Thermal Cycling Damage and Grain Growth in Cu/Pure Sn/Cu solder joints," *TMS Annual Meeting*, San Diego, CA, (2017).

133. C.R. Mayer, L.W. Yang, V. Carollo, J.K. Baldwin, N. Mara, J. Molina-Aldareguia, and **N. Chawla**, "Fracture Toughness of Al/SiC Nanolaminates: Experiments and Simulation," *TMS Annual Meeting*, San Diego, CA, (2017).

134. S. S. Singh, **N. Chawla**, and X. Xiao, "4D materials science: understanding deformation behavior using *in situ* X-ray tomography," *International Conference of Young Researchers on Advanced Materials (ICYRAM)*, Bangalore, India, (2016).

135. T. Stannard and **N. Chawla**, "Microstructural and Environmental Effects on Stress Corrosion and Corrosion Fatigue of 7075 Aluminum Alloy," *ASME Congress*, Phoenix, AZ, (2016).

136. **N. Chawla**, "*In situ* Materials Science: Probing Microstructural Evolution of Metallic Materials in Real-Time," *MRS Spring Meeting*, Phoenix, AZ, (2016).

137. **N. Chawla**, "Multi-scale, Multi-Modal Analysis of Deformation Behavior in Metallic Materials," *TMS Annual Meeting*, Nashville, TN, (2016).

138. R. Vallabhaneni, E. Izadi, C. Mayer, S. S. Singh, C. S. Kaira, J. Rajagopalan, and **N. Chawla**, "*In situ* FIB/SEM tensile testing of Tin (Sn) whiskers," *TMS Annual Meeting*, Nashville, TN, (2016).

139. P. Hruby, S.S. Singh, J.J. Williams, J. Silva, X. Xiao, F. De Carlo, and **N. Chawla**, "Three Dimensional (3D) Visualization and Modeling of Fatigue Crack Growth in Metal Matrix Composites by In Situ X-ray Synchrotron Tomography," *TMS Annual Meeting*, Nashville, TN, (2016).

140. **N. Chawla**, "Mechanical Behavior of Nanolaminates," *TMS Annual Meeting*, Nashville, TN, (2016).

141. S. Das, S.S. Singh, **N. Chawla**, and N. Neithalath, "Nanoindentation to extract phase properties of fly ash geopolymers for macroscale predictions," *ACI Fall convention*, Philadelphia, (2016).

142. **N. Chawla**, "Probing Microstructural Evolution of Metallic Materials under Extreme Environments: Multiscale and Complementary Technique Needs," *Workshop on Multiscale Full Field Imaging, Advanced Photon Source*, Argonne National Laboratory, Argonne, IL, (2015).

143. B.M. Patterson, **N. Chawla**, A.R. Ovejero, T. Stannard, S. Singh, X. Xiao, A. Ionita, D. Dalvit, D.S. Moore, K. Henderson, and N. Cordes, "Understanding Material Structure and performance with 3D X-ray Imaging," *64th Annual Conference on Applications of X-ray Analysis – Denver X-ray Conference*, Westminster, CO, (2015).

144. Y. Jiao, H. Li, and **N. Chawla**, "Accurate Material Microstructure Reconstruction from Limited-Angle Projections via Stochastic Optimization," *2nd Pan American Materials Conference*, São Paulo, Brazil, (2014).

145. **N. Chawla**, C. Mayer, S. Lotfian, N. Li, J.K. Baldwin, N. Mara, A.Misra, J. Molina-Aldareguía, and J. LLorca, "High Temperature Deformation Behavior and Modeling of Al/SiC Nanolaminates," *TMS Annual Meeting*, San Diego, CA, (2014).

146. J. Molina-Aldareguia, S. Lotfian, C. Mayer, **N. Chawla**, J. LLorca, and A. Misra, "High Temperature Mechanical Behaviour of Al/SiC Multilayers," *TMS Annual Meeting*, San Diego, CA, (2014).

147. J. Molina-Aldareguia, M. Monclús, S. Lotfian, J. LLorca, C. Mayer, H.-X. Xie, **N. Chawla**, I. Beyerlein, S. Zheng, N. Mara, and A. Misra, "High Temperature Behavior of Nanoscale Multilayers," *Nanomechanical Testing*, Portugal, (2013).

148. X. Xiao, J.J. Williams, F. De Carlo, and **N. Chawla**, "*In situ* x-ray characterizations of SiC particle-reinforced Al alloy composites by X-ray Synchrotron Tomography," *PRICM-08*, Waikaloa, HI, (2013).

149. S. Paciornik, L.F. Silva, V.R. dos Santos, and **N. Chawla**, "3D Characterization of Defects in the Weld Metal of Wet Welded Steels," *Quantitative Metallography*, San Antonio, TX, (2013).

150. S. Lotfian, M. Monclús, J. M. Molina-Aldareguía, **N. Chawla**, and J. LLorca, "High Temperature Deformation and Fracture of Nanoscale Multilayers," *Coupled Problems 2013*, Ibiza, Spain, (2013).

151. **N. Chawla**, "Understanding Fatigue Crack Growth Behavior by *In Situ* 3D X-ray Synchrotron Tomography," *Mechanisms of Fatigue*, Freiberg, Germany (2013).

152. **N. Chawla**, "Understanding Fatigue Crack Growth Behavior by *In Situ* 3D X-ray Synchrotron Tomography," *TMS Annual Meeting*, San Antonio, TX (2013).

153. J.M. Molina-Aldareguía, S. Lotfian, K.E. Yazzie, H. Xie, J. LLorca, J.K. Baldwin, A. Misra, and **N. Chawla**, "High Temperature Mechanical Characterization and Modeling of Al/SiC Nanolaminates," *TMS Annual Meeting*, San Antonio, TX (2013).

154. J.M. Molina-Aldareguía, S. Lotfian, K.E. Yazzie, J. LLorca, and **N. Chawla**, "High Temperature Mechanical Behaviour of Nanoscale Multilayers Nanolaminates," *TMS Annual Meeting*, San Antonio, TX (2013).

155. F. De Carlo, X. Xiao, K. Fezzaa, S. Wang, C. Jacobsen, **N. Chawla**, and F. Fusseis, "Challenges in data intensive science at synchrotron based 3D x-ray imaging facilities," *TMS Annual Meeting*, San Antonio, TX (2013).

156. Y. Jiao and **N. Chawla**, "Modeling Heterogeneous Materials via Statistical Microstructural Descriptors," *TMS Annual Meeting*, San Antonio, TX (2013).

157. J.J. Williams, K.E. Yazzie, E. Padilla, X. Xiao, F. De Carlo, and **N. Chawla**, "Understanding Fatigue Crack Growth in Metallic Materials by X-ray Synchrotron Tomography," *Materials Science and Technology 2012*, Pittsburgh, PA, (2012).

158. **N. Chawla**, "4D Materials Science: *In Situ* X-ray Synchrotron Tomography of Deformation in Metallic Materials," *1st International Conference on 3D Materials Science*, TMS, Seven Springs, PA (2012).

159. **N. Chawla**, "Quantifying and Predicting Structure Across Length Scales: Challenges and Opportunities," *Research Challenges in Metals and Metallic Nanostructures Workshop*, *National Science Foundation*, Santa Barbara, CA (2012).

160. N.C. Chapman, J.J. Williams, and **N. Chawla**, "Probing Mechanisms for Sn Whisker Growth by *in situ* Nanoindentation in a Scanning Electron Microscope," *TMS Annual Meeting*, Orlando, FL (2012).

161. **N. Chawla**, "Prof. K.K. Chawla's Seminal Contributions to the Field of Metal Matrix Composites," *Prof. K.K. Chawla Honorary Symposium on Fibers, Foams, and Composites: Science and Engineering, Materials Science and Technology 2011*, Columbus, OH (2011).

162. A. Bonakdar, F. Wang, J.J. Williams, **N. Chawla**, X. Xiao, and F. De Carlo, "Microstructural and Environmental Effects on Corrosion and Fatigue Crack Growth in 7075 Aluminum Alloy," *Environmental Damage in Structural Materials Under Static/Cyclic Loads at Ambient Temperatures*, Krakow, Poland, (2011).

163. J.J. Williams, N.C. Chapman, M.Y. Wang, **N. Chawla**, X. Xiao, and F. De Carlo, "4D Materials Science: In Situ X-ray Synchrotron Tomography of Deformation in Metallic Materials," *Denver X-ray Conference*, Denver, CO, (2011).

164. J.J. Williams, N.C. Chapman, V. Jakkali, V.A. Tanna, **N. Chawla**, X. Xiao, and F. De Carlo, "Three Dimensional (3D) Microstructure Visualization and Modeling of Deformation in Composites by *in situ* X-ray Synchrotron Tomography," *TMS Annual Meeting*, San Diego, CA, (2011).

165. L. Jiang and **N. Chawla**, "Local Mechanical Properties of Microstructural Constituents in Pb-free Solders by Micropillar Compression," *TMS Annual Meeting*, San Diego, CA, (2011).

166. F. Wang, J.J. Williams, and **N. Chawla**, "Microstructural and Environmental Effects on Fatigue Crack Growth in 7075 Aluminum Alloy," *Materials Science and Technology 2010*, Pittsburgh, PA, (2010).

167. H. Xie, M.A. Dudek, and **N. Chawla**, "Microstructure and Properties of Rare-Earth Containing Solders with Ultra-high Ductility," *Materials Science and Technology 2010*, Pittsburgh, PA, (2010).

168. J.J. Williams, N.C. Chapman, V. Jakkali, V.A. Tanna, **N. Chawla**, X. Xiao, F. De Carlo, "X-ray Synchrotron Tomography for Three Dimensional (3D) Microstructure Visualization and Modeling of Deformation in Metal Matrix Composites," *Materials Science and Technology 2010*, Pittsburgh, PA, (2010).

169. **N. Chawla**, K.K. Chawla, F. Silva, and R.D. Toledo Filho (keynote), "Tensile and Fatigue Behavior of High Performance Fibers," *1st TMS-ABM Congress*, Rio de Janeiro, Brazil, (2010).

170. J.J. Williams, N.C. Chapman, V. Jakkali, V.A. Tanna, **N. Chawla**, X. Xiao, and F. De Carlo, "Three Dimensional (3D) Microstructure Visualization and Modeling of Deformation in Metal Matrix Composites by In situ X-ray Synchrotron Tomography," *1st TMS-ABM Congress*, Rio de Janeiro, Brazil, (2010).

171. F. Silva, R. Toledo Filho, B. Mobasher, and **N. Chawla**, "A Multi-scale Investigation of the Mechanical Behavior of Durable Sisal Fiber Cement Composites," *1st TMS-ABM Congress*, Rio de Janeiro, Brazil, (2010).

172. **N. Chawla**, "Damage Evolution in Metal Matrix Composites by 3D X-ray Synchrotron Tomography and Image Analysis," *47th Sagamore Research Conference*, Harbortowne, MD, (2010).

173. J.J. Williams, Z. Flom, N. Chapman, A.A. Amell, **N. Chawla**, and F. De Carlo, "X-ray Synchrotron Tomography for Three Dimensional (3D) Microstructure Visualization and Modeling of Deformation in Metal Matrix Composites," *TMS Annual Meeting*, Seattle, WA (2010).

174. **N. Chawla** (keynote), "Microstructure-Based Simulations of Deformation in Particle Reinforced Metal Matrix Composites," *International Conference on Composite Materials – 17*, Edinburgh, Scotland, (2009).

175. K.E.R. Yazzie, J.J. Williams, **N. Chawla**, and H. Jiang, "Mechanical Shock of Environmentally-Benign Pb-Free Solders," *TMS Annual Meeting*, San Francisco, CA, (2009).

176. A. Ayyar, V.V. Ganesh, and **N. Chawla**, "Image-based Modeling of Crack Growth in Particle Reinforced Composites," *TMS Annual Meeting*, San Francisco, CA, (2009).

177. Y.-L. Shen and **N. Chawla**, "Multiscale Modeling of Deformation in Complex Composites," *Multiscale Modeling for Complex Materials Workshop*, Air Force Office of Scientific Research, Boston, MA, (2008).

178. **N. Chawla**, "Processing, Microstructure, and Deformation Behavior of TiO_2 Nanotubes," *Materials Science and Technology 2008*, Pittsburgh, PA, (2008).

179. **N. Chawla**, "Understanding Deformation Behavior through Three Dimensional (3D) Microstructure-Based Simulations," *Materials Science and Technology 2008*, Pittsburgh, PA, (2008).

180. **N. Chawla**, "Three Dimensional (3D) Visualization of Damage in Metal-Ceramic Nanolayers by Focused Ion Beam (FIB) Tomography," *Microscopy and Microanalysis Society Meeting*, Albuquerque, NM, (2008).

181. J.J. Williams, J. Segurado, **N. Chawla**, and J. LLorca (keynote), "Image-Based Modeling of Deformation in Particle Reinforced Metal Matrix Composites (MMCs)," *8th World Congress on Computational Mechanics (WCCM8)*, Venice, Italy, (2008).

182. **N. Chawla**, J.J. Williams, and K.S. Narasimhan, "Fatigue Behavior of Powder Metallurgy (P/M) Steels," *World Powder Metallurgy Congress 2008*, Washington, D.C., (2008).

183. **N. Chawla**, J.J. Williams, K.S. Narasimhan, L. Hunter, and S.H. Lau, "Microstructure Characterization of Powder Metallurgy (P/M) Steels," *World Powder Metallurgy Congress 2008*, Washington, D.C., (2008).

184. **N. Chawla**, "Thermomechanical Behavior and Reliability of Pb-free Solders," *TMS Annual Meeting*, New Orleans, LA, (2008).

185. **N. Chawla**, J.P. Coughlin, and J.J. Williams "The Role of Interfaces on the Mechanics of Shape Memory Alloy Fiber Reinforced Pb-Free Solder Matrix Composites," *TMS Annual Meeting*, New Orleans, LA, (2008).

186. Y.-L. Shen, G. Tang, **N. Chawla**, and D.R.P. Singh, "Indentation Response of Nanolayered Composites: A Continuum Modeling Perspective," *Materials Science and Technology 2007*, Detroit, MI, (2007).

187. **N. Chawla**, "Creep Behavior of Environmentally-Benign Pb-free Solders," *Materials Science and Technology 2007*, Detroit, MI, (2007).

188. J.J. Williams and **N. Chawla**, "Characterization of Particle Reinforced Metal Matrix Composite Microstructures by Three Dimensional (3D) Finite Body Tessellation," *TMS Annual Meeting*, Orlando, FL, (2007).

189. A. Ayyar and **N. Chawla**, "Three-Dimensional (3D) Microstructure Visualization and Finite Element Modeling of the Mechanical Behavior of Metal Matrix Composites," *SAMPE Annual Meeting*, Dallas, TX, (2006).

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192. **N. Chawla** (keynote), "Fatigue Behavior of High Performance Sintered Steels," *Fatigue Damage of Structural Materials VI*, Hyannis, MA, (2006).

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196. M. Kerr and **N. Chawla**, "Elevated Temperature Cyclic Fatigue Behavior of High Performance Ceramic Fibers," *Materials Science and Technology 2005*, Pittsburgh, PA, (2005).

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200. V.V. Ganesh and **N. Chawla**, "Three-dimensional (3D) Microstructure Visualization and Finite Element Modeling of the Deformation Behavior of Metal Matrix Composites," *TMS Fall Meeting*, New Orleans, LA, (2004).

201. **N. Chawla**, "Metals for the Future: Environmentally Benign Pb-Free Solder Alloys," *TMS Annual Meeting*, Charlotte, NC, (2004).

202. **N. Chawla**, "Mechanical Behavior of Porous Sintered Steels with Composite-Like Properties," *TMS/ISS Fall Meeting*, Chicago, IL, (2003).

203. **N. Chawla**, "Fatigue Crack Growth in Particle Reinforced Metal Matrix Composites," *TMS/ISS Fall Meeting*, Chicago, IL, (2003).

204. **N. Chawla**, "Powder Metallurgy Particle Reinforced Aluminum – From Aerospace Materials to High Performance, Low-Cost Automotive Materials," *International Conference on Powder Metallurgy & Particulate Materials*, Las Vegas, NV, (2003).

205. **N. Chawla**, "Deformation Behavior of Particle Reinforced Metal Matrix Composites," *Role of Interfaces Within and Between Composites*, Lake Louise, Canada, (2003).

206. V.V. Ganesh and **N. Chawla**, "Fatigue Crack Growth of Discontinuously Reinforced Aluminum (DRA)," *TMS Annual Meeting*, San Diego, CA, (2003).

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210. **N. Chawla**, "Smaller-Lighter-Stronger! Metal Matrix Composites for Enhanced Performance in Automotive Applications," *World Congress on Powder Metallurgy and Particulate Materials*, Orlando, FL, (2002).

211. D. Babic, S.J. Polasik, J.J. Williams, **N. Chawla**, M. Marucci, and K.S. Narasimhan, "Fatigue Behavior of Sintered Ferrous Powder Metallurgy Alloys: Effects of Alloying Additions and Sintered Density," *World Congress on Powder Metallurgy and Particulate Materials*, Orlando, FL, (2002).

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215. **N. Chawla** (keynote), "Mechanical Behavior of Particle Reinforced Metal Matrix Composites," *TMS Annual Meeting*, Nashville, TN, (2000).

216. **N. Chawla**, "The Interactive Role of Inclusions and SiC Reinforcement on the Fatigue Behavior of Powder Metallurgy Particle Reinforced Metal Matrix Composites," *TMS Fall Meeting*, Cincinnati, OH, (1999).

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221. S. Niverty, J. Graber, C.S. Kaira, V. De Andrade, F. De Carlo, and **N. Chawla**, "Nanoscale 4D Microstructural Characterization of Corrosion in Aluminum alloys using Transmission X-Ray Microscopy (TXM)," *3D Materials Science*, (2021), Washington, D.C.

222. S. Niverty, A. Singaravelu, A.A. Williams, B. Adrian, C.R. Noto, A. Grossman, H.F. Smith, and **N. Chawla**, "Analysis of structure-function relationships in turtle shell fossils using correlative microscopy," *3D Materials Science*, (2021), Washington, D.C.

223. H. Torbati-Sarraf, S. Niverty, A. Singaravelu, and **N. Chawla**, "Correlative microscopy and microstructural characterization of porosity induced by contouring in a selective laser melted AA6061 Alloy," *3D Materials Science*, (2021), Washington, D.C.

224. M. Rose, S. Niverty, **N. Chawla**, and M. Zimmermann, "Analysis of the Effect of Remote Laser Cutting on the Damage of Carbon Fiber Reinforced Plastics by High-Resolution Computed Tomography," *Deutsche Gesellschaft für Materialkunde*, (2020), Sankt Augustin, Germany.

225. P. Paradise, M. Shinde, S. Niverty, D. Bhate, and **N. Chawla**, "Process-structure-property Relationships for As-built Inconel 718 Thin Walls Manufactured with the Laser Powder Bed Fusion Process," *TMS Annual Meeting*, (2020), San Diego, CA.

226. J. Whitten, A. Sundar, J. Williams, S. Roberts, and **N. Chawla**, "Processing and Microstructural Characterization of Novel Invar Syntactic Foams," *TMS Annual Meeting*, (2020), San Diego, CA.

227. W. Farmer, A. Luktuke, M. Branch Kelly, **N. Chawla**, A. Kumar, "4D characterization of electromigration-induced grain boundary damage of Cu interconnects: X-ray tomography experiments and phase-field simulations," *TMS Annual Meeting*, (2020), San Diego, CA.

228. S. Niverty, A. Singaravelu, X. Xiao, W.K. Lee, and **N. Chawla**, "Nanoscale 4D Microstructural Characterization of Corrosion in Aluminum Alloys using In-situ Transmission X-ray Microscopy (TXM)," *TMS Annual Meeting*, (2020), San Diego, CA.

229. D. Goss, D. Bhate, S. Niverty, and **N. Chawla**, "Biomimetic Design Principles for Honeycomb Design: A Comparative Study of Honeybee and Wasp Nest Geometry," *TMS Annual Meeting*, (2020), San Diego, CA.

230. A. Luktuke, A. Kumar, and **N. Chawla**, "Influence of Indium Addition on Microstructural Properties of Sn-rich Solder Joints," *TMS Annual Meeting*, (2020), San Diego, CA.

231. I.T. Sinakevitch**,** S. Niverty, **N. Chawla**, and B.H. Smith, "Brain miniaturization: Comparisons of the neuroarchitectures of brains in the honeybee and stingless bees," *Neuroscience 2019*, Chicago, IL, (2019).

232. W. Farmer, A. Luktuke, M. Branch Kelly, **N. Chawla**, and K. Ankit, "4D Characterization of electromigration-mediated damage in interconnects: Phase-field modeling and experiments," *International Mechanical Engineering Congress & Exposition*, Salt Lake City, UT, (2019).

233. A.S. Singaravelu, A. Amer, S. Singh, J.K. Baldwin, N. Mara, and **N. Chawla**, "Deformation Behavior of Nanolaminate Metal/Ceramic Composites Under Fatigue Loading," *New Trends in Fatigue and Fracture - NT2F19*, Tucson, AZ, (2019).

234. I. Lujan Regalado, T. Amla, J. Williams, Y. Liu, E. Dede, S. Joshi, and **N. Chawla**, "Four-Dimensional (4D) Characterization of Thermal Cycling Damage in Sintered Nano-Silver Solder by X-ray Microtomography," *TMS Annual Meeting*, San Antonio, (2019).

235. S. Singh, R. Berlia, L.W. Yang, A.J. Palomares, J. LLorca, K. Baldwin, N. Mara, J. Rajagopalan, J.M. Molina-Aldareguia, and **N. Chawla**, "Deformation Behavior of Nanolayered Metal/Ceramic Composites under Tensile Loading," *TMS Annual Meeting*, San Antonio, (2019).

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237. S. Niverty, J. Graber, C.S. Kaira, V. De Andrade, F. De Carlo, and **N. Chawla**, "Nanoscale 4D Microstructural Characterization of Corrosion in Aluminum alloys using Transmission X-Ray Microscopy (TXM)," *TMS Annual Meeting*, San Antonio, (2019).

238. Y. Zhao, A.S.S. Singaravelu, Q. Zhang, X. Liu, and **N. Chawla**, "Mechanical Behavior of Novel Al_3BC/Al Composites *via* Micropillar Compression," *TMS Annual Meeting*, San Antonio, (2019).

239. M. Branch Kelly and **N. Chawla**, "Electromigration and Thermally-Induced Damage in Single and Bicrystal Sn Solder Joints Analyzed by Electron Backscatter Diffraction and X-ray Tomography," *TMS Annual Meeting*, San Antonio, (2019).

240. B. Patterson, K. Henderson, N. Cordes, M. Herman, L. Kuettner, T. Shear, C. Welch, P. Welch, A. Ionita, **N. Chawla**, J. Williams, K. Fezza, T. Sun, and X. Xiao, "*In situ* loading of engineered materials during X-ray 3D tomographic imaging," *TMS Annual Meeting*, San Antonio, (2019).

241. Z. Wang, R. Dai, A. Sundar, **N. Chawla**, Q. Nian, and R.Y. Wang, "Increasing Thermal Conductivity in Colloidal Nanocrystal Solids by Ligand Cross-Linking," *MRS Spring Meeting*, Phoenix, AZ, (2019).

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244. T. Gao, A.S.S. Singaravelu, S. Oka, R. Ramachandran, F. Štepánek, **N. Chawla**, and H.N. Emady, *9th International Granulation Workshop*, University of Sheffield, United Kingdom, (2019).

245. K. Fisher, J. Huxel, M. Branch Kelly, **N. Chawla**, M. Bertoni, and Z. Holman, "Failure Mechanisms in ECA Interconnects: X-Ray Tomography," *DuraMAT 2018 Fall Workshop*, Golden, CO, (2018).

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248. C.S. Kaira, T. Stannard, V. De Andrade, F. De Carlo, and **N. Chawla**, "Nanoscale 4D Microstructural Evolution of Precipitates in Aluminum alloys using Transmission X-Ray Microscopy (TXM)," *3D Materials Science*, Helsingør, Denmark, (2018).

249. T. Stannard, S. Niverty, J. Graber, J. Williams, H. Bale, N. Gueninchault, E. Lauridsen, and **N. Chawla**, "4D Non-Destructive Investigations of The Influence of Crystallographic Orientation And Microstructure on Corrosion In Aluminum Alloys," *3D Materials Science*, Helsingør, Denmark, (2018).

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new Transmission X-ray Microscope was developed to perform full-field nano-tomography at the APS (beamline 32-ID) at Argonne National Laboratory," *TMS Annual Meeting*, Phoenix, AZ, (2018).

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256. S. Singh, C.S. Kaira, H. Bale, J.K. Baldwin, N. Mara, and **N. Chawla**, "Deformation Behavior of Novel Co-Sputtered Nanolaminate Metal/Ceramic Composites," *TMS Annual Meeting*, Phoenix, AZ, (2018).

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258. K.K Chawla and **N. Chawla**, "Use of Weibull Distribution to characterize High Performance Fibers," *TMS Annual Meeting*, Phoenix, AZ, (2018).

259. C.S. Kaira, T. Stannard, V. De Andrade, F. De Carlo, and **N. Chawla**, "Nanoscale Deformation Behavior in Aluminum alloys using Micromechanical Testing and Transmission X-Ray Microscopy (TXM)," *TMS Annual Meeting*, Phoenix, AZ, (2018).

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263. S.S. Singh, **N. Chawla**, X. Xiao, "Understanding deformation behavior of materials by in situ X-ray synchrotron tomography," *IUMRS International Conference in Asia*, Taipei, Taiwan (2017).

264. S.S. Singh, **N. Chawla**, X. Xiao, "In situ synchrotron tomography to understand deformation behavior of materials," *Theme meeting on X-ray micro-imaging using synchrotron radiation and its application*, RRCAT, Indore, India (2017).

265. M.A. Jensen, **N. Chawla**, and N. Franz, "Fracture mechanics and evolution of resilient cuticle in the rostrum of Curculio Linnaeus, 1758," *Entomology 2017*, Denver, CO, (2017).

266. T. Gao, A. Sundar, **N. Chawla**, and H. Emady, "Single Drop Impact on Heterogeneous Powder Beds," *AIChE Annual Meeting*, Minneapolis, MN, (2017).

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269. T. Stannard, H. Bale, J. Gelb, A. Merkle, E. Lauridsen, and **N. Chawla**, "Effect of 3D Crystallographic Orientation and Microstructure on the Evolution of Corrosion in Aluminum Alloys," *International Conference on Tomography of Materials and Structures (ICTMS)*, Lund, Sweden, (2017).

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273. Y. Jiao and **N. Chawla**, "Microstructural Quantification and Property Prediction Using Limited X-ray Tomography Data," *MRS Spring Meeting*, Phoenix, AZ, (2017).

274. C.S. Kaira, S.S. Singh, C. Kantzos, A. Kirubanandham, V. De Andrade, F. De Carlo, and **N. Chawla**, "Nanoscale 4D Microstructural Evolution of precipitates in Aluminum alloys using Transmission X-Ray Microscopy (TXM)," *TMS Annual Meeting*, San Diego, CA, (2017).

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276. R. Vallabhaneni, T. Stannard, Z. Chen, S. Li, F. Bobaru, and **N. Chawla**, "Structural and Mechanical Characterization of the Corroded Region in 7075 Aluminum (Al) Alloy," *TMS Annual Meeting*, San Diego, CA, (2017).

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290. A.P. Merkle, L. Lechner, S.S. Singh, and **N. Chawla**, "Automated correlative tomography of an aluminum 7075 alloy spanning length scales and modalities," *TMS Annual Meeting*, Nashville, TN, (2016).

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293. T. Stannard, J. Williams, S.S. Singh, X. Xiao, and **N. Chawla**, "*In situ* corrosion-fatigue of 7075 aluminum in 3.5 wt% NaCl," *TMS Annual Meeting*, Nashville, TN, (2016).

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TEACHING EXPERIENCE

- Mechanical Response of Materials, MSE 382, Purdue University
- Fracture of Materials, MSE 556, Purdue University
- Mechanical Behavior of Materials, MSE 440/516 (also taught online), ASU
- Composite Materials, MSE 494/598 (also taught online), ASU
- Fatigue, Fracture, and Creep of Materials, MSE 540 (also taught online), ASU
- Physical Metallurgy, MSE 420/514, ASU
- The ASU Experience – Materials Science, ASU 101

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  Amey Luktuke
  Swapnil Morankar
  Ted Huang
  Daniel Sinclair
  Rahul Franklin
  John Wu
  Tarun Amla, BlueStar Israel Technology ETF (ITEQ)
  Arun Sundar
  Sridhar Niverty, Purdue University
  Yongfeng Zhao (co-advised with X. Liu), Lecturer, Shangdong University of Technology, China
  Marion Branch Kelly, KLA Tencor
  Somya Singh, Merck
  Qingdong Wang, (co-advised with T. Jing), Aluminum Corporation of China
  Irene Lujan, Intel
  Tyler Stannard, KLA Tencor
  C. Shashank Kaira, Intel
  Renuka Venkatasathya, Intel
  Antony Kirubanandham, Intel
  Carl Mayer, Virginia Commonwealth University
  Sudhanshu Singh, Associate Professor, Indian Institute of Technology – Kanpur, India
  James Mertens, Intel
  Luciana Ferreira (co-advised with S. Paciornik), PUC-Rio, Brazil
  Enyu Guo (co-advised with T. Jing), Associate Professor, Dalian University of Technology, China
  Huxiao Xie, Qualcomm
  Robbie Adams, Honeywell (retired)
  Kyle Yazzie, Intel
  Huiyang Fei (co-advised with H. Jiang), Intel

Mingyue Wang (co-advised with T. Jing), Tsinghua University, China
Danny Singh, Intel
Martha Dudek, Intel
Flavio Silva (co-advised with R. Toledo and B. Mobasher), Associate Professor, Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio), Brazil
Grant Crawford, Associate Professor and Director, Arbegast Materials Processing and Joining Laboratory, South Dakota School of Mines
Rajen Sidhu, Intel
Adarsh Ayyar, BAE Systems
Vasudevan Ganesh, Intel

- M.S. Students
  Harsh Meena, LAM Research
  Christopher Wong, W.L. Gore
  Jose Loza, Applied Technical Services
  Peter Hruby, First Solar
  Irene Lujan, CIMAV, Mexico (co-advised with M. Herrera)
  Dustin Friedman, Intel
  Eric Padilla, Intel
  Vaidehi Jakkali, Texas Instruments
  Jennifer Stewart, Intel
  Frank Danaher, Freescale Semiconductor
  Aaron Hilger, General Dynamics
  Amit Abraham (co-advised with H. Jiang), Intel
  James Coughlin, Intel
  Scott Hayes, NXP Semiconductor
  George Piotrowski, JPS Composite Materials
  Matt Kerr, U.S. Nuclear Regulatory Commission
  Felipe Ochoa, Intel
  Darko Babic, Exponent
  Rajarshi Saha, Soraa

- Undergraduate Students
  Krish Gupta
  Hanyu Zhu
  Daniel Sinclair, Purdue University
  Cindy Rogel
  Harsh Dev Goyal, IIT-Bombay
  Chistopher Kantzos, Carnegie Mellon University
  Christopher Wong, W.L. Gore
  Myrtle Lin
  Victoria Ton
  Jonathan Silva
  Nicholas Phillips
  Jonathan Topliff
  James Mertens
  Natalie Chapman
  Vijesh Tanna
  Steve Kranz
  Zeke Flom
  Casey McClimon
  Ben Peterson
  Donna Schnell

Chris Cleveland
Paul Johnson
Matt Kerr
George Piotrowski
Benjamin Wunsch
Brent Jester
Elaine Morris
Steven Polasik
David Vonk

- High School Students
  Cary Schwartztein

- Research Scientist
  Jason Williams

TECHNICAL SYMPOSIA

- Co-Organizer – **Materials in Sports**, TMS Annual Meeting, 2022.
- International Advisory Committee – **3D Materials Science**, Washington, D.C., 2021.
- Organizing Committee – **19th International Conference on New Trends in Fatigue and Fracture (NT2F19)**, Tucson, AZ, 2019.
- International Advisory Committee – **3D Materials Science**, Helsingør, Denmark, 2018.
- Co-Organizer – **Nanocomposites V: Structure-Property Relationships in Nanostructured Materials**, TMS Annual Meeting, 2018.
- Co-organizer – **Correlative Microscopy in Materials Science**, Microscopy & Microanalysis Meeting, 2017.
- International Advisory Committee – **Environmental Damage in Structural Materials**, Cork, Ireland. 2016.
- International Advisory Committee – **International Conference on Advanced Materials and Manufacturing Processes for Strategic Sectors**, Thiruvananthapuram, Kerala, India. 2015.
- Primary Organizer – **Pan-American Materials Conference**, Sao Paulo, Brazil, 2014.
- Primary Organizer – **Composites and Hybrid Materials**, Pacific Rim Conference-8, 2013.
- Primary Organizer – **Pb-free Solder Alloys: Reliability, Alloy Development, New Technology**, TMS Annual Meeting, 2013.
- Co-organizer – **3D Materials Science VII**, TMS Annual Meeting, 2013.
- International Scientific Committee, **International Workshop on the Mechanical Behavior of Nanoscale Multilayers**, IMDEA Materials Institute, Madrid, Spain, 2013.
- International Advisory Board, **3D Microstructure**, Saarbrucken, Germany, 2011.
- Primary Organizer – **Prof. K.K. Chawla Honorary Symposium on Fibers, Foams, and Composites: Science and Engineering**, Materials Science and Technology, 2011.
- Primary Organizer – **Symposium on Composite Materials**, TMS-ABM (Associação Brasileira de Metalurgia e Materiais) International Congress, 2010.
- Co-Organizer – **Processing, Properties, and Performance of Composite Materials**, Materials Science and Technology, 2008.
- Primary Organizer – **Commonality of Phenomena in Composite Materials**, Materials Science and Technology, 2007.
- Primary Organizer – **Special Session on Metal Matrix Composites**, International Conference on Composite Materials, Kyoto, Japan, 2007.
- Primary Organizer – **Pb-free Solder Implementation: Reliability, Alloy Development, New Technology**, TMS Annual Meeting, 2006.
- Co-organizer – **Pb-free Solder Implementation: Reliability, Alloy Development, New Technology**, TMS Annual Meeting, 2005.
- Co-organizer – **Fracture of Multicomponent Materials**, ASM/TMS/ISS/ACerS Fall Meeting, 2005.

- Program Committee Member – **Automotive Fatigue Design and Applications**, Metal Powder Industries Federation, October, 2003.
- Primary Organizer – **Fatigue and Creep of Metal Matrix Composites**, TMS Annual Meeting, 2002.
- Co-organizer – **Computational Mechanics of Heterogeneous Materials: Modeling, Simulation, and Experimental Verification**, U.S. National Congress on Computational Mechanics, August 1-4, 2001.
- Program Committee Member – **Powder Metallurgy Aluminum and Light Alloys for Automotive Applications**, Metal Powder Industries Federation, November 2-3, 2000.
- Co-organizer – **Testing, Standards, and Characterization of Composite Materials**, ASM/TMS Fall Meeting, 2000.

SERVICE ACTIVITIES

- Editor – Materials Science and Engineering A (2012-present).
- Editorial Board – Materials Chemistry and Physics (2017-present), Materials Characterization (2005-present), Advanced Engineering Materials (2007-2018), Materials Science and Engineering A (2011-2012), Metallurgical and Materials Transactions A (key reader) (2003-2012), and Journal of the Chinese Institute of Engineers (JCIE) (2009-2014).
- Guest Editor – Integrating Materials and Manufacturing Innovation (2013), Materials Science and Engineering A (2012), Journal of the Minerals, Metals, and Materials Society (TMS) (2008, 2017), Journal of Materials Science (2007-2008), Journal of Electronic Materials (2005, 2006, 2009, 2012), Journal of Light Metals (2002).
- Sigma Xi – Scientific Research Honor Society (2020).
- NSF Workshop on Emerging Research Areas in the Science of Metals and Metallic Nanostructures, Santa Barbara, CA (2012).
- ASM International Fellow Selection Committee (2011-2012, chair in 2013), ASM International Graduate Student Paper Contest Selection Committee (2015-2016, chair in 2017).
- ASM International National Nominating Board (2006).
- Executive Committee Board Member – ASM Phoenix Chapter (2000-2004).
- ASM/TMS Joint Composite Materials Committee (past-chair), ASM/TMS Mechanical Behavior of Materials Committee (member), TMS Electronic Packaging and Interconnects Committee (member), TMS Young Leaders Committee (past-chair), JOM Advisor for Composite Materials Committee (2007-2008), Ellen Swallow Richards and Frank Crossley Diversity Awards (2014-2016; chair 2016-17), Honors and Professional Recognition Committee (2016-17), TMS Public Affairs and Government Committee (2020-present).
- University service – University Promotion and Tenure Committee (Provost Level, 2015-2017); School of Materials Implementation Committee (member), School of Materials Task Force (member), Graduate Council (member), Graduate Council Appeals Board (member), Self-Study Committee for Review of Materials Engineering Program (member), Scientific Steering Committee of Leroy Eyring Center for Solid State Science (member).
- Panelist – Faculty Women and Associated (FWA) University Promotion & Tenure (2018).
- Fulton school of engineering service – Associate Dean for Research Search Committee (member, 2011), Dean's Promotion and Tenure Committee (Chair, 2011-2015; member, 2006-2011), ASU-Industry Committee on Packaging Research (past-chair), ASU-Intel Packaging Committee (member), and Quality of Instruction Committee (past-member).
- Departmental service – Personnel Committee (2018-present); Awards Committee (2018-2020), Research Advisory Committee (member), By Laws Committee (member), Seminar Committee (chair), Graduate Curriculum Committee (past-member), Graduate Affairs Committee (past-chair), Graduate Recruiting Committee (member and past-chair), Faculty Search Committee (member), Strategic Planning Committee (past-member), and Graduate Coordinator Search Committee (past-member).
- Member – ASM International, The Minerals, Metals, and Materials Society (TMS).
- Reviewer – National Science Foundation, Ralph Powe Award Program – ORAU, Norman Hackerman Advanced Research Program – State of Texas, Strategic Environmental Research and Development Program's (SERDP), Louisiana Board of Regents, McGraw-Hill, and Al-MMC Consortium.

- Reviewer – ACS-Nano, Acta Biomaterialia, Acta Materialia, Advanced Materials, Advanced Engineering Materials, Applied Physics Letters, Applied Surface Science, ASME Journal of Electronic Packaging, Composites Science and Technology, Composites, Composites A –Applied Science and Manufacturing, Experimental Mechanics, Fatigue and Fracture of Engineering Materials, Computational Materials Science, IEEE Transactions on Components and Packaging Technologies, Industrial Crops and Products, International Journal of Fatigue, International Journal of Fracture, International Journal of Materials Research (formerly: Zeitschrift fuer Metallkunde), International Journal of Plasticity, International Journal of Solids and Structures, International Materials Reviews, Journal of the American Ceramic Society, Journal of ASTM International, Journal of Electronic Materials, Journal of Materials Research, Journal of Materials Science, Journal of the European Ceramic Society, Materials Characterization, Materials Letters, Materials Processing and Technology, Materials Science and Engineering A, Materials Science and Engineering B, Metallurgical and Materials Transactions A, Nanoscience and Nanotechnology Letters, Nature Communications, Philosophical Magazine A, Thermochimica Acta, and Studies of Conservation.
- Panelist – Materials Science and Technology (MST) 2010 and Beyond Strategic Planning Workshop.
- Panelist – Workshop on Challenges and Opportunities of the NSF Early Career Development Award, National Science Foundation.
- Panelist – Workshop for Associate Professors Thinking of Promotion to Full Professor, Workshop for NSF Career Proposals, Workshop for New Laboratory Teaching Assistants, Workshop on graduate school opportunities – Women and Science and Engineering Program (WISE), Arizona State University.
- Project Champion/Liaison – ASHA for Education, 2005.
- Judge – International Science and Engineering Fair –Philadelphia, PA, (1999); Phoenix, AZ, (2005); Phoenix, AZ, (2013); Purdue EXPO Career Fair Scholarship (2021).
- Staff Coach, Indiana Olympic Development Program (ODP), 2020-present – 2007/2008 Boys.
- Assistant Coach, Arizona Olympic Development Program (ODP), 2018-2020 - 2003 Boys (2018), 2004 Boys (2019).
- Youth Soccer Coach, Boilers FC, IN, 2020-present.
- Youth Soccer Coach, AYSO United Soccer Club (previously Challenge Football Club), AZ, 2018-2020.
- Board of Directors – Phoenix Brazas Soccer Club, AZ, 2016-2019.
- Division Coordinator, Under-10 Boys Division, American Youth Soccer Organization, AZ, 2018.
- Youth Soccer Coach, American Youth Soccer Organization, AZ, 2016-2018.
- Youth Soccer Coach, Arizona Soccer Club, Chandler, AZ, 2015-2016.
- Youth Soccer Coach, National Youth Sports, Chandler, AZ, 2010-2015.
- Tovo Institute Coaching Course, Phoenix, AZ, 2019.
- United States Soccer Federation National Class C Coaching License, 2019 – national coaching license.
- United States Soccer Federation National Class D Coaching License, 2018 – national coaching license.
- United States Soccer Federation National Class E Coaching License, 2015 – national coaching license.