N. CHANDRA
Distinguished Research Professor
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Department of Mechanical Engineering
FAMU - FSU College of Engineering
Florida State University
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PROFESSIONAL INTERESTS

Computational Material Science, Computational Structural Mechanics, Finite Deformation in Materials, Superplasticity, Micromechanics in Composites, Advanced Design and Manufacture, Interfaces in solids

PERSONAL DATA

Date of Birth: April 17, 1952; Married, Two Daughters Citizen of U.S.A.

EDUCATION

Ph.D. (Mechanical Engineering) August 1986, Texas A&M University.
M. S. (Mechanical Engineering), April 1983, University of Houston.
AMIE (equivalent to B.S.) (Metallurgy) June 1978, Institute of Engineers, Calcutta.
Certificate, August 1974, Advanced Nuclear Engineering, Bhaba Atomic Research Center, Bombay.
B.E. (Mechanical Engineering) June 1973, University of Madras.

PROFESSIONAL LICENSES

Registered Professional Engineer, State of Florida, License no. 40075.

HONORS AND AWARDS

Distinguished Research Professor, Florida State University, April 2005.

Karamcheti Professor of Engineering, Florida State University, August 2000.

Fellow, **A**merican **S**ociety of **M**echanical **E**ngineering, 1997.

Associate Technical Editor, ASME Journal of Engineering Materials and Technology (published since 1847), 1998-2004

Editorial Board, ASTM Journal of Materials Engineering and Performance, 1998-present

Contributing Editor, Mechanics of Advanced Materials and Structures, An international journal, 2003-present

Board of Editor, CMES: Computer Modeling in Engineering and Sciences, An international journal, 2004-present

Developing Scholar Award, The first Engineering Faculty to receive the award at Florida State University, 1993.

Certificate of Appreciation, The American Metallurgical Society, 1992.

Outstanding Service to the Profession Award, The first FSU Engineering Faculty to receive the award, Florida Engineering Society, 1990.

Certificate of Appreciation, NASA, 1989, 1991.

Certificate of Appreciation, Society of Manufacturing Engineers, 1989,1990

EXPERIENCE

ACADEMIC:

Professor, FAMU-FSU College of Engineering, Florida State University, August 1995-Present.
Director, Office of Graduate Studies, FAMU-FSU College of Engineering, Florida State University, May 95-January 1998.
Associate Professor, FAMU/FSU College of Engineering, Florida State University, August 1991-July 1995.
Assistant Professor, FAMU/FSU College of Engineering, Florida State University, August 1988-July 1991.
Visiting Assistant Professor, FAMU/FSU College of Engineering, Florida State University, January 1987-July 1988.
Post-doctoral fellow, FAMU/FSU College of Engineering, Florida State University, August 1986-December 1986.
Research Fellow, ALCOA Fellowship, January 1984-July 1986.
Lecturer, Mechanical Engineering, Texas A&M University, September 1982-January 1984.
Graduate Research Assistant, Mechanical Engineering, University of Houston under a Navy contract, May 1982-April 1983.
Graduate Teaching Assistant, Mechanical Engineering, University of Houston, September 1981-April 1982.

INDUSTRIAL:

Senior Scientific Officer, Department of Atomic Energy, Madras Atomic Power Project, August 1978 -August 1981:

Design and Analysis of in--core components of 200 MW Nuclear Plant, Research and Development work of the manufacturing techniques of pressure vessels and piping with special emphasis on rolling and welding. The components are as per ASME Nuclear Codes and Specifications.

Scientific Officer, Department of Atomic Energy, August 1973-July 1978:

Manufacture, testing and quality assurance of coded pipelines and pressure vessels.

GRADUATE COMMITTEES

Ph. D. Students:
Major Professor -11 (7 graduated)

M.S. Students:
Major Professor -12 (12 graduated)

Post-Doctoral Research Associates:
Direct Supervision-7 (2 current)

BOOKS PUBLISHED

1. **Advances in Superplasticity and Superplastic Forming**, by N. Chandra, H. Garmestani and R.E. Goforth, TMS Publishers, ISBN No. 0-87339-250-7, (1993).

2. **Advances in Finite Deformation Problems in Materials Processing and Structures**, by N. Chandra and J.N. Reddy, ISBN No. 0-7918-0872-6, American Society of Mechanical Engineering Publishers, AMD- Vol. 125, 161 pages (1991).

3. **Superplasticity in Advanced Materials** by N. Chandra, Materials Science Forum, Trans Tech Publications, Switzerland, 660 pages, ISBN 0-87849-845-5, (2001).

4. **Intro to ME: Design and Analysis:** for Namas Chandra, Prentice Hall Publications, Upper Saddle River, NJ 07458, 340 pages, ISBN 0-13029-633-3, (2002).

CHAPTERS IN BOOKS/HANDBOOKS

5. Namas Chandra, Superplastic Materials and Superplastic Metal Forming ,**Handbook of Metallurgical Process Design**, ed. G. E. Totten, K. Funatani and L. Xie, Mercel Dekker Publications, ISBN 0-8247-4106-4, 46 Pages, 205-250 (2004).

REFEREED PUBLICATIONS IN JOURNALS

6. A. Srinivasan and N. Chandra, Latency tolerance through parallelization of time in scientific applications, **Parallel Computing**, **in print**, (2005).

7. M. K. Khraisheh, B.M. Darras, P. Kalu, M. Adams-Hughes, N. Chandra, Correlation between the microstructure and forces generated during friction stir processing of AA5052, **Materials Science Forum**, **475-479**, 3043-3046, (2005).

8. N. Chandra, M. K. Khraisheh and P. Kalu, Effect of State of Stress on the cavitation behavior of Al 5083 Superplastic Material, **Materials Science Forum**, **475-479**, 2931-2936, (2005).

9. S. Namilae and N. Chandra, Multiscale model to study the effect of interfaces in carbon nanotube based composites, **ASME Journal of Engineering Materials and Technology**, (accepted), 2004.

10. C. Shet, N. Chandra and S. Namilae Defect annihilations in carbon nanotubes under thermo-mechanical loadings, **Journal of Material Science**, **40**, 27-36, (2005).

11. M.J. Tan, C. L. Chen and N. Chandra, Reexamination of "missing strain" during superplastic deformation**, Materials Science and Engineering, 374, 1-2,** 369-373, (2004).

12. X. Chen, N. Chandra and A.M. Rajendran**,** Analytical Solution to the Plate Impact Problem of Layered Heterogeneous Material Systems**, International Journal of Solids and Structures**, **41**, 4635-4659, (2004).

13. X. Chen and N. Chandra, The effect of heterogeneity on plane wave propagation through layered composites**, Composites Science and Technology, 64, 10-11**, 1477-1493, (2004).

14. .S. Namilae, N. Chandra and C. Shet Mechanical Behavior of functionalized nanotubes**, Chemical Physical Letters**, **387**, **4-6**, 247-252, (2004)

15. N. Chandra, S. Namilae and C. Shet, Local Elastic Properties of carbon nanotubes in the presence of Stone-Wales defects, **Physical Review B**, **69 (9)**, 09141, (2004).

16. C. Shet, and N. Chandra, Effect of the shape of $T-\delta$ cohesive zone curves on the fracture response**, Mechanics of Advanced Materials and Structures**, **11(3),** 249-276, (2004).

17. N. Chandra and S. Namilae, Multi-scale modeling of nanocystalline materials, **Materials Science Forum**, **447-448**, 19-27, (2004).

18. N. Chandra and C. Shet, A Micromechanistic Perspective of Cohesive Zone Approach in Modeling Fracture. **CMES**, **Computer Modeling in Engineering and Sciences**, **5(1)**, 21-34, (2004)

19. H. Li and N. Chandra, Analysis of Crack Growth and Crack-tip Plasticity in Ductile Material Using Cohesive Zone Models, **International Journal of Plasticity**, 19, 849-882, (2003).

20. N. Chandra, Constitutive behavior of Superplastic materials, **International Journal for nonlinear mechanics, 37,** 461-484**,** (2002).

21. N. Chandra, H. Li, C. Shet and H. Ghonem, Some Issues in the Application of Cohesive Zone Models for Metal-ceramic Interface. **International Journal of Solids and Structures**, **39**, 2827-2855, (2002).

22. C. Shet and N. Chandra, Analysis of Energy Balance When Using Cohesive Zone Models to Simulate Fracture Process, **ASME Journal of Engineering Materials and Technology**, 124, 440-450, (2002).

23. N. Chandra, Evaluation of Interfacial Fracture Toughness Using Cohesive Zone Models, **Composites *Part A: Applied Science and Manufacturing***, **33**, 1433-1447, (2002).

24. N. Chandra, X. Chen and A. M Rajendran, The effect of material heterogeneity on the shock response of layered systems in plate impact test**, ASTM Journal of Composites Technology and Research,** 24, 4, 232-239, (2002).

25. S. Namilae, C. Shet, N. Chandra and T.G. Nieh, Atomistic simulation of grain boundary sliding in pure and magnesium doped aluminum bicrystals**, Scripta Materialia** 46, 49-54 (2002).

26. N. Chandra and H. Ghonem, Interfacial Mechanics of push-out tests: theory and experiments, **Composites *Part A: Applied Science and Manufacturing***, **32**, 3-4, 575-584, (2001).

27. A. Deshmukh, T.Middelkoop, A. Krothapalli, W. Shields, N. Chandra and C.A. Smith, Multiagent Design Architecture for Intelligent Synthesis Environment**, Journal of Aircraft**, **38**, 2, 215-223, (2001)

28. D. Osborne, N. Chandra and, H. Ghonem, Interface Behavior of Ti Matrix Composites at elevated temperature, **Composites *Part A: Applied Science and Manufacturing,* 32**, 3-4, 545-553, (2001).

29. S. Namilae, C. Shet, N. Chandra and T.G. Nieh, Atomistic simulation of the effect of trace elements on grain boundary of aluminum, **Materials Science Forum**, **37-359,** *387-392*, (2001).

30. C. Shet, H. Li and N. Chandra, Interface Models for grain boundary sliding and migration, **Materials Science Forum, 37-359,** *577-586,* (2001).

31. J. D. Watts, X. Chen, A. Belvin, N. Chandra, and Z. Chen, Temperature effects on the localization and failure mode of Al 5083, **Materials Science Forum, 37-359,** *599-606,* (2001).

32. R. Rajagopal and N. Chandra, A Natural description for inelastic materials, **Materials Science Forum**, **37-359,** 261-272, (2001).

33. N. Chandra, S. C. Rama and Z. Chen, Process Modeling of Superplastic materials, **Materials Transactions JIM**, **40**, 8, 723-726 (1999).

34. N. Chandra and P. Dang, Atomistic Simulation of Grain Boundary Sliding and Migration, **Journal of Materials Science**, **34**, 4, 656-666 (1998).

35. N. Chandra, Mechanics of Superplastic Deformations at Atomic Scale, **Materials Science Forum**, **304**, 3, 411-419 (1998).

36. S. R. Voleti, C. R. Ananth and N. Chandra, Effect of Fiber Fracture and Matrix Yielding on Load Sharing in Continuous Fiber Metal Matrix Composites, **Journal of Composites Technology and Research**, **20**, 4, 203-209, (1998).

37. C.R. Ananth, S. R. Voleti and N. Chandra, Effect of Fiber Fracture and Interfacial Debonding on the Evolution of Damage in Metal Matrix Composites, **Composites Part A**, 29A, 1203-1211, (1998)

38. S. Mukherjee, C. R. Ananth and N. Chandra, Effect of Interface Chemistry on the Fracture Properties of Titanium Matrix Composites, **Composites Part A**, 29A, 1213-1219, (1998)

39. S. R. Voleti, C. R. Ananth and N. Chandra, Effect of Interfacial Properties on the Fiber Fragmentation Process in Polymer Matrix Composites, **Journal of Composites Technology and Research**, 20, 1, 16-26, (1998).

40. P. Dang and N. Chandra A Micromechanial Model for Dual-Phase Superplastic Materials, **Acta Materialia**, **46**, 8, 2851-1857, (1998).

41. B. Roy, U. Chandra and N. Chandra, Computer Simulation of Realistic Microstructures, **Journal of Materials science Letters**, (in print), (1997).

42. N. Chandra, Industrial Applications of Superplasticity-A vision of the Future, **Materials Science Forum**, 243-245, 643-652 (1997).

43. N. Chandra and P. Dang, Numerical Modeling of Superplastic Deformation Mechanisms, **Materials Science Forum**, 243-245, 53-59 (1997).

44. S.R. Voleti, J .R. Miller and N. Chandra, Structural Optimization of the Superconducting Outsert of a 45-T Hybrid Magnet, **Cryogenics, 37, 2**, 105-111, (1997).

45. N. Chandra, J. Rama and P. Dang, Application of Micromechanical Polycrystalline Model in the Study of Threshold Stress Effects on Superplasticity, **Materials Science and Engineering**, A231, 134-142, (1997).

46. N. Chandra and P. Dang, Application of Micromechanical Model to High Strain Rate Superplastic Materials, **Scripta Materialia**, **36**, 1327-1332 (1997).

47. S. Mukherjee, C. R. Ananth and N. Chandra, Evaluation of Fracture Toughness of MMC Interfaces Using Thin-slice Push-out Tests, **Scripta Materialia**, **36**, 1333-1338 (1997).

48. C. R. Ananth, S. Mukherjee, and N. Chandra, Effect of Time Dependent Matrix Behavior on the Evolution of Processing-Induced Residual Stresses in Metal Matrix Composites, **Journal of Composites Technology and Research 19**, 3, 134-141, (1997).

49. S. Mukherjee, C. R. Ananth and N. Chandra, Effect of Residual Stresses on the Interfacial Fracture Behavior of Metal Matrix Composites, **Composite Science and Technology, 57,** 1501-112, (1997).

50. C. R. Ananth and N. Chandra, Elevated temperature interfacial behavior of MMC: a computational study, **Composites:** Part A, 27A, 805-811 (1996).

51. S. R. Voleti, N. Chandra and J R. Miller, Global-Local Analysis of Large-scale Composite Structures Using Finite Element Methods, **Composites & Structures, 58, 3**, 453-464, (1996).

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53. Xie, Z.Y. and N. Chandra, Application of GPS Tensors to Fiber Reinforced Composites, **Journal of Composite Materials**, 29, 1448-1514, (1995).

54. S. Mukherjee, H. Garmestani and N. Chandra, Experimental Investigation of Thermally Induced Plastic Deformation of MMCs Using Backscattered Kikuchi Method, **Scripta Metallurgica et Materialia**, **33**, 1, 93-99 (1995).

55. N. Chandra and C.R. Ananth, Analysis of Interfacial Behavior in MMCs and IMCs Using Thin Slice Push-out Tests', **Composite Science and Technology, 54, 1 ,** 87-100, (1995).

56. N. Chandra and K. Murali, A Micromechanistic Model of Superplastic Behavior in Pseudo Single Phase Aluminum Alloys', *Scripta* **Metallurgica** *et* **Materialia, 32, 9** , 1429-1434, (1995).

57. C. R. Ananth and N. Chandra, Numerical Modeling of Fiber Push-Out Test in Metallic and Intermetallic Matrix Composites-Mechanics of the Failure Process', **Journal of Composite Materials, 29, 11**, 1488-1514, (1995).

58. K. Murali and N. Chandra, Micromechanical Modeling of Superplastic Deformation', *Acta* **Metallurgica et Materialia, 43, 5**, 1783-1790, (1995).

59. N. Chandra and Z. Xie, Development of Generalized Plane Strain Tensors for the Concentric Cylinder Inclusion Problem', **ASME Journal of Applied Mechanics, 117**, 1-5, (1995).

60. H. Garmestani, R. Vaughar, D. Markiewicz and N. Chandra, Stress Analysis of Orthotropic Work-Hardening Cylinder with Body Force', **Mechanics of Structures and Machines**, 23, 4, 521-548, (1995).

61. N. Chandra, K. Murali, and H. Garmestani, Experimental and Numerical Investigations of Superplastic Deformation Mechanisms', **Materials Science Forum, 170-172**, 47-52, (1994).

62. N. Chandra, S.C. Rama and J. Rama, Computational Modeling of 3-D Superplastic Components', **Materials Science Forum, 170-172**, 577-582, (1994).

63. N. Chandra., C.R. Ananth and H. Garmestani, Micromechanical Modeling of Process-Induced Residual Stresses in Ti-24Al-11Nb/SCS6 Composite', **Journal of Composite Technology and Research, 17**, 37-46, (1994).

64. Z. Xie and N. Chandra, Application of Equation Regulation Method to Multi-Phase Composites', **International Journal of Non-linear Mechanics, 28,** 6, 687-704, (1993).

65. R. Chella, R. Aithal and N. Chandra, Evaluation of Fracture Parameters of Composites Subjected to Thermal Shock Using the Boundary Element Method and Sensitivity Analysis Techniques', **Engineering Fracture Mechanics, 44**, 6, 949-961, (1993).

66. N. Chandra and D. Kannan, Superplastic Sheet Metal Forming of Generalized Cup, Part I: Uniform Thinning', **Journal of Material Engineering and Performance, 1**, 801-812, (1993).

67. N. Chandra and D. Kannan, Superplastic Sheet Metal Forming of Generalized Cup, Part II: Non-Uniform Thinning', **Journal of Material Engineering and Performance, 1**, 813-822, (1993).

68. W.D. Markiewicz, S.R. Voleti, N. Chandra and F. S. Murray, Transverse Stress on Nb Sn Conductors in High Field NMR Magnets', **IEEE Transactions on Applied Superconductivity 3**, n1, 258-262, (March 1993).

69. N. Chandra and S.C. Rama, Application of Finite Element Method to the Design of Superplastic Forming Process', **ASME Journal for Engineering and Industry, 114**, 4, 452-459, (1992).

70. S.C. Rama and N. Chandra, Development of a Pressure-Time Predicting Algorithm for a Superplastic Forming Process', **International Journal of Non-linear Mechanics, 26**, 5, 711-725, (1991).

71. N. Chandra and K. Chandy, Superplastic Process Modeling of Plane Strain Components with Complex Shapes', **Journal of Material Shaping Technology, 9**, 27-36, (1991).

72. N. Chandra, R. Chella and K.L. Chen, Effect of Cracks on the Mechanical Behavior of Materials- A Finite Element Approach', **Transactions of Ceramic Society, 17**, 493-501, (1990).

73. N. Chandra, Analysis of Superplastic Metal Forming by a Finite Element Method', **International Journal for Numerical Methods in Engineering, 26**, 1925-1944 (1988).

74. W.E. Haisler, N. Chandra and L. Oliver, Finite Element Analysis of Hose Couplings', **Transactions of SAE, 95**, 270-278, (1987).

75. Chandra, N., W.E. Haisler and R.E. Goforth, Finite Element Analysis of Hertz Contact Problem', **Finite Elements in Analysis and Design, 3**, 39-56, (1987).

76. N. Chandra, W.E. Haisler and R.E. Goforth, A Finite Element Solution Method for Contact Problems with Friction', **International Journal for Numerical Methods in Engineering, 24**, 477-495 (1987).

PUBLICATIONS IN BOOKS AND PROCEEDINGS (Refereed)

77. J. Kohle, U. Chandra, S. Namilae, A. Srinivasan and N. Chandra, Parallel simulation of Carbon Nanotube based composites. Proceedings of the 11 th International Conference on High Performance Computing (HiPC), Lecture Notes in Computer Science, Springer, 2004 (to appear).

78. N. Chandra and S. Namilae, Mechanics of Atomic Scale Interfaces in Carbon Nanotube Reinforced Composites,. Proceedings (CD) of the 2004 International Conference on Computational and Experimental Engineering and Sciences, Madeira, Portugal, 26-29 July '04, Advances in Computational and Experimental Engineering and Science, Ed., S. N. Atluri and AJB Tadeu, ISBN 0-9657001-6-X , pp 351-356, (2004)

79. N. Chandra and C, Shet, Modeling of CNT based composites, Numerical Issues, Proceedings (CD) of the 2004 International Conference on Computational and Experimental Engineering and Sciences, Madeira, Portugal, 26-29 July '04, Advances in Computational and Experimental Engineering and Science, Ed., S. N. Atluri and AJB Tadeu, ISBN 0-9657001-6-X, pp 1421-1426, (2004)

80. M Naveen, S Namilae, C. Shet and N. Chandra , Phase Space Distribution of Carbon Nanotubes in a Constant Temperature Molecular Dynamics Simulations, Proceedings of SECTAM XXII, Developments in Theoretical and Applied Mechanics, edited by Hassan Mahfuz and Mahesh V. Hosur, ISBN 0-615-12639-1, pp 1-11, (2004).

81. J. Kohle, U. Chandra, S. Namilae, A. Srinivasan and N. Chandra, Parallelization of Molecular Dynamics for Modeling Interface Properties of Carbon Nanotube Based Composites, Proceedings of

SECTAM XXII, Developments in Theoretical and Applied Mechanics, edited by Hassan Mahfuz and Mahesh V Hosur, ISBN 0-615-12639-1, pp 23-32, (2004).

82. S. Namilae and N. Chandra, Three Level Hierarchical Model to Incorporate Interface Effects in Carbon Nanotube Based Composites, Proceedings of SECTAM XXII, Developments in Theoretical and Applied Mechanics, edited by Hassan Mahfuz and Mahesh V Hosur, ISBN 0-615-12639-1, pp 33-41, (2004).

83. M. Adams-Hughes, M.K. Khraisheh, P.N. Kalu, N. Chandra and G. Osterholt, Effect of Processing Parameters on the Microstructure and Texture of Friction Stir Processed Al-5052 Alloys, Proceedings of SECTAM XXII, Developments in Theoretical and Applied Mechanics, edited by Hassan Mahfuz and Mahesh V Hosur, ISBN 0-615-12639-1, pp 479-488, (2004).

84. Shih, C., Chandra, N., and Hollis, P., "Learning Through Teaching – A Collaborative Learning Strategy," Session 2230, Proceedings of the 2004 ASEE Annual Conference, Salt Lake City, Utah, June 20-23, (2004)

85. N. Chandra, S. Namilae and A. Srinivasan, Linking Atomistic and Continuum Mechanics Using Multi-scale Models, Proceedings of the 8th International Conference on Numerical Methods in Industrial Forming Processes , **Numiform 2004**, AIP Conference Proceedings, Vol. 712, Issue 1, pp 1571-1576, June 13-17, Columbus, OH (2004)

86. A. Srinivasan and N. Chandra, Latency tolerance through parallelization of time in scientific application, Heterogeneous Computing Workshop, proceedings of the 18th International Parallel and Distributed Processing Symposium (IPDPS) April 2004, IEEE.

87. N. Chandra and S Namilae, Computational Methodologies to Link Atomistic and Continuum Scales in the Design of Nano Scale Systems, 9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization, Atlanta, Georgia, 5-6 September, (2002).

88. N. Chandra and C. Shet, Micromechanical Analysis of Fracture Processes in Inelastic Materials Using Cohesive Zone Approach, Fifth World Congress on Computational Mechanics, Vienna, Austria, July 7-12, (2002).

89. N. Chandra and A.M. Rajendran, Effect of Material Heterogeneity on the Shock Wave Profile of Composites in Plate Impact Tests, International Workshop on New Models and Hydrocodes for Shock Waves Processes in Condensed Matter, Edinburgh, Scotland, 19-24 May (2002).

90. C. Shet and N. Chandra, Homogenization Techniques to Include Plasticity Effects in Materials, **Fourteenth U.S. National Congress of Theoretical and Applied Mechanics** *(USNCTAM14)*, June 23-28, Blacksburg, Virginia USA, (2002).

91. H. Li and N. Chandra, Modeling of Interfacial mechanical behavior Using Cohesive Zone Model. **Fourteenth U.S. National Congress of Theoretical and Applied Mechanics** *(USNCTAM14)*, June 23-28, Blacksburg, Virginia USA, (2002).

92. P. Jha and N. Chandra, A new finite element method integrating extrinsic and intrinsic cohesive zone models, **Fourteenth U.S. National Congress of Theoretical and Applied Mechanics** *(USNCTAM14)*, June 23-28, Blacksburg, Virginia USA, (2002).

93. S. Namilae and N. Chandra, Application of asymptotic expansion homogenization to atomic scale, **Fourteenth U.S. National Congress of Theoretical and Applied Mechanics** *(USNCTAM14)*, June 23-28, Blacksburg, Virginia USA, (2002).

94. X. Chen and N. Chandra, The effect of material heterogeneity on high amplitude wave propagation in layered material system. **Fourteenth U.S. National Congress of Theoretical and Applied Mechanics** *(USNCTAM14)*, June 23-28, Blacksburg, Virginia USA, (2002).

95. L. Van Dommelen, N. Chandra and Y. Haik, FAMU-FSU MSME online program, Proceedings of ASEE 2000 conference, St. Louis, July, 11 pages, (2000)

96. N. Chandra, The Micromechanics of Inelastic Processes in Superplastic Materials, ASME Winter Annual Meeting on Recent Advances in Mechanics of Structured Continua, AMD-Vol. 244, Orlando, November, pages 5-9, (2000).

97. N. Chandra and Z. Chen, Cavity nucleation in Al5083 alloy (invited), Superplasticity-Current Status and Future Potentials, Proceedings of MRS symposium, Boston, MA, November, 12 pages, 235-247, (1999).

98. N. Chandra, Effect of Processing on the Evolution of Interfaces in Metal Matrix Composites, Proceedings of AFOSR Mechanics of Composites Materials, Dayton, Ohio, October 14-16, pages 159-165, (1998).

99. J. Shih, U. Chandra and N. Chandra, Integrated Design Environment for the Manufacture of SPF components, Proceedings of Superplasticity and Superplastic Forming, ed. M. A. Khaleel, Pullman, Washington, pages 20-22, (1998).

100. N. Chandra and A.M. Rajendran, Micromechanics Based Constitutive Modeling of Damage in Composites Under High Impact-A Review, **SUSI 98,** 24-26 June, Greece, (1998).

101. N. Chandra and H. Ghonem, Evaluation of Crack Behavior in Bimaterial Interfaces Using Experimental and Computational Methods, **8th U.S.-Japan Conference on Composite Materials**, ed. G. Newaz and R. Gibson, Technomic Publications, (1998).

102. N. Chandra and J Watts, Effect of Elevated Temperature Exposure on the Interfacial Properties of SCS-6/Timetal 21S Composites, **8th U.S.-Japan Conference on Composite Materials**, ed. G. Newaz and R. Gibson, Technomic Publications, (1998).

103. P. Dang and N. Chandra, Atomic and Grain Level Modeling of Polycrystal Deformation, **Modeling the Mechanical Response of Structural Materials**, ed. E.M. Taleff and K.M. Rao, TMS Publications, ISBN 0-87339-329-9, 53-63, (1998).

104. Z. Chen, Z. Li, P. Dang and N. Chandra, Behavior of Titanium Alloy Under Uniaxial and Biaxial Superplastic Conditions, **Modeling the Mechanical Response of Structural Materials**, ed. E.M. Taleff and K.M. Rao, TMS Publications, ISBN 0-87339-329-9, 53-63, (1998).

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106. A. Deshmukh, T. Middlekoop, A. Krothapalli, W. Shields, C. Zhang, N. Chandra and M. Challa, Multi Agent Design Architecture for Integrated Design Systems AIAA 98-0914, 36th AIAA Aerospace Science Meeting, January 12-15, (1998).

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109. N. Chandra, Integrated Design Environment for the Manufacture of SPF Components, **IMSP 97'**, ed., T. Aizawa, K. Higashi and M. Tokuda, Mie University Press, Japan, pages 263-271, (1997).

110. N. Chandra and P. Dang, Atomistic and Continuum Modeling of High Temperature Deformation Mechanism, **ICES 97'**, Costa Rica, pages1147-1152, (1997).

111. S.R. Voleti, C.R. Ananth and N. Chandra, Evolution of Micro-Damage in a Metal Matrix Composite, **ICES 97'**, Costa Rica, pages 1214-1219, (1997).

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113. S.R. Voleti, C.R. Ananth, N. Chandra and B.S. Majumdar, Effect of Matrix and Interfacial Behavior on Load Sharing in Metal Matrix Composites, **Proceedings of the American Society for Composites - 11th Technical Conference**, ed. W.S. Johnson, 340-348, (1996).

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117. C.R. Ananth, N. Chandra, K. Murali and H. Garmestani, Effect of Interfacial Properties on the Transverse Mechanical Properties of Metallic/Intermetallic Matrix Composites-A Computational Study, 12 pages, **Mechanics and Mechanisms of Metal Matrix Composites**, ed. R.B. Bagath, S.G. Fishman and R. Arsenault, ASM International Publishers, 151-160, (1993).

118. N. Chandra and Z.Y. Xie, Application of Superposition Method to the Thermal Stress Problem in Composites', **Advanced Composites '93**, ed. T. Chandra and A.K. Dhingra., 323-327, (1993).

119. C.R. Ananth, N. Chandra, K. Murali and H. Garmestani, Effect of Inelastic Material Behavior on Residual Stresses in Metal Matrix Composites', **Advanced Composites '93**, ed. T. Chandra and A. K. Dhingra, 1317-1324, (1993).

120. H. Garmestani, G.S. Sohi, S. Mukerjee and N. Chandra, Investigation of Deformation Mechanisms of Superplastic Materials Using Diffraction Patterns', **Superplasticity and Superplastic Forming of Advanced Materials**, ed. N. Chandra et. al., TMS Publishers, ISBN no. 0-87339-250-7, 109-120, (1993).

121. S.C. Rama, N. Chandra and R. E. Goforth, Numerical Modeling of Superplastic Sheet Forming Processes for 3-D Configurations', **Superplasticity and Superplastic Forming of Advanced Materials**, ed. N. Chandra et. al., TMS Publishers, ISBN no. 0-873 39-250-7, 133-155, (1993).

122. W.D. Markiewicz, S.R. Voleti, N. Chandra and F. S. Murray, Transverse Stress on Nb-Sn Conductors in High Field NMR Magnets', Proceedings of 1992 Applied Superconductivity Conference, Chicago, 6 Pages, (1992).

123. H. Garmestani, M. Ebrahimi, and N. Chandra, Microstructural Studies in Metal Matrix Composites Using the Backscattered Kikuchi Diffraction Technique', Proceedings of the Fourth International Conference on Structural Failure, Product Liability and Technical Assurance, Vienna, Austria, 7 Pages, (1992).

124. S.C Rama, N. Chandra and R. E. Goforth, Computational Process Modeling of Dynamically Recrystallizing Superplastic Materials', **Numiform 92**, Ed. Chenot, et. al., Balkema Publishers, 867-875, (1992).

125. C.R. Ananth, N. Chandra and H. Garmestani, Process Induced Residual Stresses in Metallic/Intermetallic Matrix Composites', **Computational Plasticity: Fundamentals and Applications**, Ed. D.R.J. Owen, et. al., Pineridge Press, 2205-2216, (1992).

126. S.C. Rama, and N. Chandra, Finite Element Analysis of Superplastic Forming Processes Using Continuum and Thin Shell Formulations', **Advances in Finite Deformation Problems in Materials Processing** , Ed. N. Chandra and J.N. Reddy, AMD-Vol. 125 , 1 31-145, (1991)

127. N. Chandra, S.C. Rama and R.E. Goforth, Variable Optimum Strain-rate for Dynamically Recrystallizing Aluminum-Lithium Alloys', **Superplasticity in Advanced Materials**, Ed. S. Hori, M. Tokizane and N. Furushiro, 765-770, (1991).

128. N. Chandra, S.C. Rama and R.E. Goforth, Process Modeling of Superplastic Forming Processes Using Four Different Computational Methods', **Superplasticity in Advanced Materials**, Ed. S. Hori, M. Tokizane and N. Furushiro, 837-844, (1991).

129. R. E. Goforth, M. Srinivasan and N. Chandra, A Comparative Study of the Superplastic Behavior of Two Dynamically Recrystallizing Aluminum-Lithium Alloys', **Superplasticity in Advanced Materials**, Ed. S. Hori, M. Tokizane and N. Furushiro, 145-150, (1991).

130. N. Chandra, D. Kannan, R. E. Goforth, and L. Phillips, Mechanical Characterization of Superplastic Materials Using Modified Cone Test', **Superplasticity in Aerospace II**, Ed. T.R. McNelley and H. C. Heikkenen, TMS Publishers, 67-86, (1990).

131. N. Chandra, K. Chandy, and S.C. Rama, Computational Model for Superplastic Pans of Complex Geometry with Friction', **Superplasticity in Aerospace II**, Ed. T.R. McNelley and H. C. Heikkenen, TMS Publishers, 87-102, (1990).

132. R. E. Goforth, M. Srinivasan, and N. Chandra, ` Superplastic Flow Characteristic and Microstructural Analysis of ALCOA 2090-0E16 Alloy', **Superplasticity in Aerospace II**, Ed. T.R. McNelley and H. C. Heikkenen, TMS Publishers, 285-302, (1990).

133. N. Chandra, and S.C. Rama, Effect of Material and Process Parameters on the Process Modeling of Superplastic Components', **Light Weight Alloys for Aerospace Applications II**, Ed. E.W. Lee and N J. Kim, TMS Publishers, 487-498, (1989).

134. N. Chandra, Physical Modeling of Superplastic Forming', **Light Weight Alloys for Aerospace Applications** , Ed. E.W. Lee, E.H. Chia, N. J. Kim, TMS Publishers, 433-442, (1989).

135. D. Kannan, and N. Chandra, Non-intrusive Strain Measurement Systems', *Proceedings of the 22nd Southeastern symposium on system theory*, ISBN 0-8186-2038-2, 120-126, (1989).

136. K. Chandy and N. Chandra, Computer Simulation and Experimental Verification of a Metal Forming Process', *Proceedings of the 22nd Southeastern symposium on system theory*, ISBN 0-8186-2038-2, 24-29, (1989).

137. N. Chandra and P. Hollis, A Futuristic Design Methodology', *Proceedings of the 1989 ASEE Annual Conference*, Lincoln, Nebraska, 2, 585-587, 1989.

138. N. Chandra Process Modeling of SPF Processes', ASME Technical Paper No. MR89-473, 1989.

139. N. Chandra and P. Schwindt, Non-planar Surface Profile Measurement Systems', *Proceedings of the 21st Southeastern symposium on system theory*, ISBN 0094-2898, 533-535, (1989).

140. B. Roy and N. Chandra, Computational Modeling of Superplastic Sheet Metal Forming Processes', *Proceedings of the 21st Southeastern symposium on system theory*, ISSN 0094-2898, 209-214, (1989).

141. N. Chandra, and B. Roy, Membrane Element Analysis for axisymmetric and non-axisymmetric superplastic sheet metal forming processes', **Superplasticity and Superplastic Forming**, Ed. C.H. Hamilton, N. E. Paton, TMS Publishers, 283-289, (1988).

142. R. E. Goforth, N. Chandra and D. George Analysis of the cone test to evaluate superplastic forming characteristics of sheet metal', **Superplasticity in Aerospace**, Ed. H. Heikkenen and T.R. McNelly, TMS Publishers, 149-166, (1988).

143. K.N. Shah, J.M. Story and N. Chandra, Modeling of Superplastic Forming Under Plane Strain and Axisymmetric Conditions', **Superplasticity in Aerospace**, Ed. H. Heikkenen and T.R. McNelly, TMS Publishers, 135-148, (1988).

144. N. Chandra and R. E. Goforth, An Analytical Model of Axisymmetric Superplastic Metal Forming Process', *Proceedings of the Symposium on Advances in Modeling of Fabrication Processes*, Cincinnati, Ohio, October 1987, Paper No. TMS-A87-11, (1987).

145. N. Chandra, D. H. Allen, W.E. Haisler and R. E. Goforth, Application of the Finite Element Method to Large Deformation in Superplastic Metal Forming Processes', **Constitutive Laws for Engineering Materials: Theory and Application, Volume II**, Ed. C.S. Desai et. al., Elsevier Publishers, 951-958, (1987).

146. W.E. Haisler, N. Chandra and L. Oliver, Finite Element Analysis of Hose Couplings', SAE Paper No. 860818 *Proceedings of the SAE Sixth International Conference on* **Vehicle Structural Mechanics**, pp. 169-178, Detroit, April (1986).

147. N. Chandra, W.E. Haisler and R. E. Goforth., Finite Element Formulation of Superplastic Metal Forming Processes', *Proceedings of the 1985 ASM Metals Congress* , Toronto, Canada, October (1985).

148. N. Chandra, Y.H. Wu and K. Salama., Determination of Stress Generated by Shrink Fit', *Proceedings of the 1983 IEEE Symposium* , July (1983).

149. K. Salama, G.C. Barber and N. Chandra., Non-destructive Stress Measurements in Aluminum', *Proceedings of the 13th International Symposium on NDE* , San Antonio, April (1983).

150. N. Chandra, and Salama, K., Relationship Between Stress and Temperature Dependence of Ultrasonic Shear Velocity, *Proceedings of Ultrasonic Symposium on NDE, IEEE*, Philadelphia, March (1983).

151. K. Salama, G.C. Barber and N. Chandra., Measurement of Residual Stress Using the Temperature Dependence of Ultrasonic Velocity', *Proceedings of 1982 the Ultrasonic Symposium, IEEE*, San Diego, October 1982.

152. N. Chandra, B. Thangavel and K. V. Vannan., Design and Fabrication Aspects of Stainless Steel Pressure Vessels - Part 1: Design Factors', *Proceedings of the National Workshop on Nuclear Power Plants*, Kalpakkam, (1981).

153. N. Chandra, B. Thangavel and K. V. Vannan., Design and Fabrication Aspects of Stainless Steel Pressure Vessels - Part 2: Fabrication Techniques', *Proceedings of the National Workshop on Nuclear Power Plants*, Kalpakkam, (1981).

154. B. Thangavel and N. Chandra, Failure Case Histories of Austenitic Stainless Steel Components in Madras Atomic Power Plant', *Proceedings of the National Workshop on Nuclear Power Plants*, Kalpakkam, (1981).

155. B. Thangavel and N. Chandra, Leak Testing - A Powerful Tool in Industrial Field', *Proceedings of the National Symposium on Advances in NDE*, Bombay, (1980).

156. P.D.P. Rao and N. Chandra, Selection and Performance of Process System Valves', *Proceedings of the Conference on Nuclear Power Reactors*, Bombay, (1977).

TECHNICAL PRESENTATIONS (with published abstracts)

1. A. Srivniasan and N Chandra, Computational Techniques for Efficient Carbon Nanotube Simulation, SIAM Conference on Computational Science and Engineering, San Diego, CA, Feb 2000.

2. Z. Li, Z. Chen, P. Dang and N Chandra, Cavitation Behavior of Superplastic Materials Under Biaxial Loading Conditions, TMS Annual Meeting, San Antonio, February 1998

3. N. Chandra, Integrated Design Environment for the Manufacture of SPF Components, IPMM ’97, Brisbane, Australia, July 1997

4. N. Chandra, Computational Materials Science, ICASE, NASA Langley, Williamsburg, VA, October 7-9, 1996.

5. N. Chandra, Residual Stresses-Origin and Effects in MMCs, Wright Patterson Air Force Base, Dayton, OH, August 10, 1995.

6. C. R. Ananth, S. Mukherjee, and N. Chandra, Computational Analysis of Interfacial Fracture Process in a Push-out Test, Third U. S. National Congress on Computational Mechanics, Dallas, June 12-14, 1995.

7. S. Mukherjee, C. R. Ananth, and N. Chandra, Numerical Modeling of Inelastic Effects in the Evolution of Residual Stresses in Metal Matrix Composites', Third U. S. National Congress on Computational Mechanics, Dallas, June 12-14, 1995.

8. B. Roy, U. Chandra, R. Palmer, and N. Chandra, Monte-Carlo Simulation of the Deformation Process in Superplastic Materials', Third U. S. National Congress on Computational Mechanics, Dallas, June 12-14, 1995.

9. S. R. Voleti, and N. Chandra, Analysis of Large Scale Structures Using Global-Local Finite Element Method', Third U. S. National Congress on Computational Mechanics, Dallas, June 12-14, 1995.

10. J. Rama, and N. Chandra, Isothermal Shaping of Superplastic Materials', Third U. S. National Congress on Computational Mechanics, Dallas, June 12-14, 1995.

11. K. Townsley, H. Garmestani and N. Chandra and C. Sabinash, Residual Stresses Development in Gamma-Titanium Aluminide based Composites, ICCE/2, New Orleans, 1995.

12. S.R. Voleti, N. Chandra and J. Miller, Structural Optimization of a Large Superconducting Solenoid Using Global-Local Finite Element Techniques', Applied Superconductivity Conference, Boston, October 16-21, 1994.

13. H. Garmestani, and N. Chandra, Modeling and Microtexture Studies in Superplastic Materials', Superplasticity: 60 Years after Pearson, Manchester, UK, December 7-8, 1994.

14. C. R. Ananth, N. Chandra, K. Murali and H. Garmestani, Influence of Matrix Inelasticity on Processing Induced Residual Stresses in Fiber-reinforced Metal Matrix Composites', ASCE/SES/ASME Summer meeting, Charlottesville, VA, June 6-9, 1993.

15. J. King, N. Chandra, R. Jai, K. Murali, H. Garmestani, Effect of Moisture and Temperature on the Compressive Response of Woven Composite Laminate', The Metallurgical Society '93 Annual Meeting, Pittsburgh, 18 October 1993.

16. H. Garmestani, S. Mukerjee, M. Ebrahimi, N. Chandra, Micro Characterization of Aluminum Based Fiber Reinforced Composites', The Metallurgical Society '93 Annual Meeting, Pittsburgh, 18 October 1993.

17. N. Chandra, H. Garmestani, V.S. Rao and M. Shahawy, Elastic-Plastic Fatigue Analysis of A Structural Joint Using Experimental and Computational Methods', Society of Engineering Sciences 28th Annual Technical Meeting, Gainesville, Florida, 8 November 1991.

18. C.R. Ananth, N. Chandra and H. Garmestani, Finite Element Approach to Evaluation of Residual Stress in Metal Matrix Composites, Society of Engineering Sciences 28th Annual Technical Meeting, Gainesville, Florida, 8 November 1991.

19. H. Garmestani, M. Ebrahimi and N. Chandra, Measurement of Local Inelastic Strain at Metal Matrix Composite Interface Using Back Scattered Kikuchi Diffraction Technique', Annual Meeting of The Metallurgical Society, New Orleans, 18 February, 1991.

20. N. Chandra, Superplastic Forming', ASME Manufacturing International '90, Invited Panelist on Improved Machining Processes/ Advanced Processing, Atlanta, Georgia, 26 March 1990.

21. S.C. Rama and N. Chandra, Determination of Interpolation Functions Using Mathematica, 1990 International Conference on Mathematica, Redwood City, California, January 13, 1989.

22. N. Chandra, Process Modeling of Superplastic Metal Forming Processes, Invited talk Westec 89, Los Angeles, California, March 20-23, 1989

INVITED LECTURES

1. *Nanoscale interface effects in materials*—Brown University, Rhode Island, USA, February 13, 2005.

2. *Modeling and Simulation in Nanotechnological Applications*—Department of Chemical Engineering, FAMU-FSU College of Engineering, Tallahassee, Florida, USA, January 21, 2005.

3. *Role of Nanoscale Interfaces in the Mechanical Behavior of CNT Based Composites*—Department of Mechanical Engineering, Ohio University, Athens, Ohio, USA, December 4, 2004.

4. *Role of Nanoscale Interfaces in the Mechanical Behavior of CNT Based Composite*—Materials Directorate, Wright Patterson Air Force Base, Dayton, Ohio, USA, December 3, 2004.

5. *Multi-scale modeling in materials*—Tsinghua University, Beijing, China, November 5, 2004.

6. *Multi-scale modeling in materials*—Xian University, Xian, China, November 3, 2004.

7. *Role of mechanics in computational nanotechnology*—Oakridge National Laboratory, Oakridge, Tennessee, October 29, 2003.

8. *Mechanics of atomic Scale Interfaces in CNT composites*—Tuskegee University, Tuskegee, Alabama, December 5, 2003.

9. *Hierarchical Modeling of Materials*—Texas A&M University, College Station, Texas, December 3, 2000

10. *Hierarchical Modeling of Materials*—Indian Institute of Technology, Kanpur, India, December 23, 2000.

11. *Hierarchical Modeling of Materials*—Department of Mechanical Engineering, Ohio State University, Columbus, Ohio, September 28, 2000

12. *Constitutive Modeling of Superplastic Materials*—Beijing Research Institute of Materials and Technology, Beijing, China, January 20, 1999.

13. *Modeling of superplastic materials*—Harbin Institute of Technology, Harbin, China, January 22, 1999.

14. *Advances of superplasticity and superplastic forming* – Beijing Aeronautical and Astronautical Institute, Beijing, China, January 24, 1999.

15. *Application of Computers in the Design of SPF Components* -- (i) Honda Motor Company, Tokyo, August 5, 97 (ii) Sumitomo Light Metals Company, Nagoya, August 6, 97, (iii) Osaka University, Osaka August 11, 97, (iv) Hajime Institute of Technology, Hajime, August 12, 97

16. *Atomistic Simulation of Superplastic Materials*--University of Tokyo, Tokyo, August 4, 1997.

17. *Hierarchical Modeling of Materials*, U.S. Army Aberdeen Proving Grounds, Aberdeen, MD, December 1996.

18. *Hierarchical Modeling of Materials and Structures*, Georgia Institute of Technology, Atlanta, GA, February 10, 1997.

19. *Application of MMCs to structures--Issues*, Allied Signals Aerospace Corporation, Phoenix, AZ, November 1996.

20. *Superplastic Isothermal Forging-Prospects and Issues* , ANTARES User Group Meeting, Orlando, FL, January 1995.

21. *Micromechanical Modeling of High Strain Rate Superplasticity*, Lawrence Livermore National Laboratory, Livermore, CA, March 1994.

22. *Process Modeling of Superplastic Forming Processes*, Stanford University, Palo Alto, California, August 1993.

23. *Finite Element Simulation of Superplastic Forming Processes*, University of Florida, Gainesville, February 1993.

24. *Effect of Inelasticity in the origin of Residual Stresses in Metal Matrix Composites*, CEMEF, Center for Metal Forming, Nice, France, April 1992.

25. *State-of-the-Art in Sheet Metal Forming Processes*, University of Leige, Belgium, April 1992.

26. *Origin of Residual Stresses in Composites*, Texas A&M University, College Station, Texas, March 1992.

27. *Finite Element Analysis of Superplastic Forming*, Rockwell Science Center, CA, March 1989.

28. *Physical Modeling of Sheet Metal Forming Processes*, Rockwell Science Center, CA, March 1989.

29. *Computer Aided Manufacturing in Process Industries*, Reactor Research Center, Kalpakkam, India, January 1988.

30. *Design and Analysis of Superplastic Metal Forming Processes*, General Dynamics, Fortworth Division, March 1988.

31. *Finite Element Analysis of Superplastic Metal Forming Processes*, New Mexico State University, March 1986.

32. *Superplastic Metal Forming -- A Finite Element Approach*, Texas A\&M University, September 1985.

WORKSHOPS OFFERED

1. Five days workshop on *Composites Testing and Training* to Lockheed Aerospace Engineers; held at FAMU-FSU College of Engineering, 1993 , Attendees: 5.

2. Two days workshop on *Superplasticity and Superplastic Forming*, with Dr. C.G. Bampton, Taipei Institute of Technology, Taipei, Taiwan, February 24-25, 1994 , Attendees: 80.

3. One day Workshop on *Superplasticity* , I.I.T., Madras with Professor K. A. Padmanabhan, January 17, 1989, Attendees: 60.

4. Two days SME workshop on *Effective Applications of Superplastic Forming and Diffusion Bonding for Engineering Specialist*, June 15-16, 1989, Los Angeles, California, Attendees: 100, Workshop Fee: 650.

5. Two days SME workshop on *Effective Applications of Superplastic Forming and Diffusion Bonding for Engineering Specialist*, June 23-24, 1990, Los Angeles, California, Attendees: 75, Workshop Fee: 750.

RESEARCH CONTRACTS AND GRANTS

1. Cohesive Zone Approach to Multistage Modeling of Nanotube Reinforced Composites, **Air Force Office of Scientific Research**, PI: N. Chandra**, $99,141.00**, 1/4/2004 to 31/12/2004

2. NER: Scalable Technique for massively parallel nanomaterials simulation for long-time behavior, **National Science Foundation**, PI: A. Srinivasan, co-PI: N. Chandra, **$100,000**, 6/1/2004 to 5/31/2005

3. Carbon Nanotube Based Chemical, Bio, Radioactive Explosive Sensor: A Computational Simulation, **National Secuities Agencies**, PI: N. Chandra, co-PI: U. Chandra, $294, 000, 8/1/2004 to 7/30/2007

4. US-France Cooperative Research: CNT Reinforced Metal Matrix Composites-Experimental and Computational Approaches, **$22, 500, National Science Foundation,** OISE-0436642, PI: N. Chandra, September 15, 2004 to August 31, 2007.

5. Application of cohesive zone models to simulate delamination and failure in heterogeneous materials, Army Research Office, **$256, 604**, September 1, 2002 to August 31, 2005, PI; Prof. N. Chandra

6. Center for computational Mechanics, **$125,000**, FSU Foundation, March 1, 2002 to December 31, 2003, PI: Prof. N. Chandra

7. Impact of Next Generation Computing and Evolving Interdisciplinary Approaches on Computational and Information Sciences, U.S. Army Research Laboratory, **$185, 412**, DAAD19-01-2-0019, September 1, 2001 to August 30, 2004, PI: Prof. N. Chandra

8. Computational and Mechanical Issues in the Multi-scale Modeling of Materials, **$246,430**, U.S. Army Research Laboratory, DAAD17-01-C-0121, September 1, 2001 to August 30, 2004, PI: Prof. N. Chandra

9. ARO Workshop on Mechanics and Materials Science Aspects of Micro-macro interfaces, TC 01139, Battele Inc. (Army Research Office), **$27, 286**, September 28, 01 to May 31, 2002

10. Experimental Characterization and Modeling of Damage in Composites Under Ballistic Impact, **$308, 097**, U.S. Army Research Office, April 1, 1999 to March 31, 2002, PI: Prof. N. Chandra

11. Modeling of Interfacial Fracture Mechanisms in Bimaterial Systems at Elevated Temperatures Using Experimental and Computational Methods, **$214, 363**, Air Force Office of Scientific Research (University of Rhode Island), April 1, 1999 to July 30, 2000, PI: Prof. N. Chandra

12. Atomistic and Mesoscopic Simulation of Grain Boundary Sliding in Bicrystals, **$34, 958**, Lawrence Livermore National Laboratory, May 1, 1999 to July 1, 2000, PI: Prof. N. Chandra

13. Superplasticity of Gamma Titanium Aluminides, $39, 750, Pratt & Whitney Corporation, September 1, 1997 to March 1, 1998, PI: Prof. N. Chandra

14. Effect of Processing on the Evolution of Interfaces in Metal Matrix Composites, **$138, 801**, AFOSR, June 15, 1996 to June 14,1998, PI: Prof. N. Chandra

15. Micromechanical Modeling of Superplastic Materials', **$267, 807**, Army Research Office, June 1,1996 to May 30, 1999, PI: Prof. N. Chandra

16. 'Design, Analysis and Optimization of Ceramic Dies for Superplastic Forming', **$99,971**, Boeing Aerospace Corporation, October 1, 1994 to November 30, 95, PI: Prof. N. Chandra

17. `Monte-Carlo Simulation of Superplastic Deformation Mechanisms', Florida State University, **$6,000**, July 1, 94 to December 31, 1994, PI: Prof. N. Chandra

18. `Shear testing of LTM-23 adhesives', McDonnell Douglas Corporation**,$23,800** , January 1, 1993 to July 30, 93 PI: Prof. N. Chandra

19. `Composites Testing and Training', Lockheed Corporation, **$45,000** , August 1, 1993 to December 1993, PI: Prof. N. Chandra

20. `Mechanical Characterization of LTM-45 Composites', McDonnell Douglas Corporation, **$45,000**, January 1, 1993 to July 30, 1993 PI: Prof. N. Chandra

21. `Residual Stress Measurements in Metal Matrix Composites', McDonnell Douglas Corporation, **$40,000** , April 1, 1992 to December 31, 1992, PI: Prof. H. Garmestani, Co-PI: Prof. N. Chandra

22. `Center for Nonlinear and Non-equilibrium Aeroscience', NASA, Group leader for Nonlinear Phenomena in Aerospace Materials, **$1,092,434**, January 1, 92 to December 31, 96, Principal Investigator: Prof. N. Chandra, Co-PI: Prof. H. Garmestani

23. `Micromechanical Characterization of Metal Matrix Composites', National Science Foundation, **$285,630**, September 1, 1991 to August 31, 1993, Principal Investigator: Prof. N. Chandra, Co-PI: Prof. H. Garmestani and R. Chella

24. `Deformation and Yielding Mechanisms in Rubber-Modified PVC Blends Using Speckle and Moire Interferometry', National Science Foundation**, $99,946**, August 1, 1990 to July 31, 1991, Principal Investigator: Prof. R. Chella, Co-P.I. Prof N. Chandra

25. `Design of Tube-Plate Joints,' Florida Department of Transportation, **$74,056**, July 1, 1990 to June 30, 1991, Principal Investigator: Prof. N. Chandra

26. `Design of A Lunar Transportation System,' NASA/USRA University Advanced Design Program, Grant No. 39-1906-062**, $105,000**, August 15, 1989 to June 30, 1992, Principal Investigator: Prof. N. Chandra, Co-P.I.: Prof. P. Hollis

27. Superplastic Process Modeling and Material Characterization Study of Selected Metal Alloys,' `Design of A Lunar Transportation System,' NASA/USRA University Advanced Design Program, Grant no. 39-1906-062, **$55,000**, January 1, 1988 to December 31, 1990, Principal Investigator: Prof. N. Chandra

28. Finite Element Membrane Analysis for Non-Axisymmetric Superplastic Metal Forming,' ALCOA Laboratories, Grant no. 6150-505-42, **$52,000**, May 1, 1987, Principal Investigator: Prof. N. Chandra

29. National Science Foundation, **$182,000**, February 1, 1989 to January 31, 1991, Co-P.I.: Profs. N. Chandra and R.E. Goforth

30. `Process Modeling of Superplastic Sheet Metal Forming Processes,' General Dynamics, Fort Worth Division, Grant no. 6150-508-42, **$147,403**, July 1, 1988 to December 31, 1990, Principal Investigator: Prof. N. Chandra

31. `Manufacture and Characterization of Superconducting Materials,' DARPA, **$100,000**, July 1, 1988 to September 30, 1989, Co-P.I.: Prof. N. Chandra

32. `Mechanical Characterization of High Temperature Composites,' DARPA, **$25,000**, July 1, 1988 to September 30, 1989, Co-Principal Investigators: Profs. N. Chandra, R. Chella, and P. Gielisse

SIGNIFICANT REPORTS

1. Rama and N. Chandra, Development of a Pressure-Time Predicting Algorithm for a Superplastic Forming Process', March 1990, Mechanics and Materials Research Laboratory, MMRL-89-4.2.

2. Aithal, N. Chandra and R. Chella, Characterization of mechanical properties of fiber-matrix composites subjected to thermal shock', March 1990, MMRL-89-3.1.

3. Chandra, R. Chella and K.L. Chen, Effect of cracks on the mechanical behavior of brittle materials - A finite element approach', November 1989, MMRL-89-1.1.

4. Anwar, N. Chandra, and R. Chella, Analysis of disk compression test', MMRL-89-2.1, December 1989.

5. Chandra, N. Design of A Lunar Transportation System,' NASA/USRA University Advanced Design Program, Second Annual Report, June 1989.

6. Chandra, N. Design of A Lunar Transportation System,' NASA/USRA University Advanced Design Program, Annual Report, June 1988.

7. Chandra, N. Membrane Element Analysis of Axisymmetric Superplastic Sheet Metal Forming Processes,' Interim Technical Report, ALCOA Center, October 1987.

8. Chandra, N., W.E. Haisler and R.E. Goforth., Finite Element Analysis of Superplastic Metal Forming Processes,' Interim Technical Report, ALCOA Center, Pennsylvania, September 1985.

9. Chandra, N., W.E. Haisler and R.E. Goforth., A Survey of Finite Element Methods with Incompressibility Constraints,' Mechanics and Materials Center Report No. MM-DAYCO-85-1, July 1985.

ACADEMIC ACTIVITIES

Director, College of Engineering Graduate Studies, College of Engineering, 1995-1998

Member, Council of Research and Creativity, Florida State University, 1995-2004

Member of University Fellowship Committee, Florida State University, 1993-1996, 2001-2004

Member of FSU Dissertation Research Grants Committee, 1999-2001

Member of Lucent Fellowship Committee, 2001-2002

Member of FSU- University Tenure and Promotion Committee-1995, 1997

Member, Faculty Senate Professional Relations and Welfare Committee, 2000-2003

Chairperson, Graduate Admissions and Awards Committee, Mechanical Engineering Department, FAMU/FSU College of Engineering, January 1987-June 1985.

Chairperson, College Graduate Committee, FAMU/FSU College of Engineering, Fall 1992-1996.

Member of Graduate Council, Florida A&M University, 1993-1998.

PROFESSIONAL ACTIVITIES

Fellow, American Society of Mechanical Engineers

Faculty Associate of Supercomputer Computational Research Institute, Computational and Information Sciences, Florida State University.

Elected Member of The American Academy of Mechanics.

Elected Member of the Forming and Shaping Committee of The Metallurgical Society/The American Institute of Manufacturing Engineers.

Elected Member of Committee for Computational Mechanics of ASME.

International Symposium Organizer and editor of Material Science Forum volume, International Conference on Superplasticity, (170 from 22 countries), Orlando, Florida, August 2000.

Symposium Organizer and editor, Session Chairperson, Advances in Finite Deformation Problems in Materials Processing and Structures, ASME, Atlanta, 1991.

Symposium Organizer and editor, Session Chairperson, Superplasticity and Superplastic Forming of Advanced Materials, TMS, Chicago, 1992.

Session Chairperson, International Symposium on Superplasticity in Advanced Materials, Moscow, Russia, June 1994.

Session Chairperson, Superplasticity-Present and Future, Boston, MA, December 1999.

Session Chairperson, International Symposium on Superplasticity in Advanced Materials, Osaka, Japan, June 1991.

Session Chairperson, International Symposium on Superplasticity in Aerospace, Anaheim, California, March 1989.

ASME, Tallahassee Group, Secretary, 1987-1988.

Vice--Chairperson, Symposium on Advances in Inelastic Analysis-- Application in Industrial Forming Processes, ASME Winter Annual Meeting, Boston, 1987.

Organizing Committee Member of the 21st South Eastern Symposium on System Theory.

Finite Element Code SPASM listed in the International Data Base MAKEBASE.

ALCOA Fellowship

REVIEWER:

National Science Foundation
International Journal of Solids and Structures
Journal of Composite Materials
Composites
Journal of Composite Technology and Research
ASME Journal of Engineering Materials and Structures
Journal of Strain Analysis
The International Journal for Numerical Methods in Engineering
AIAA Journal
Metallurgical Transactions
Computational Mechanics
International Journal for Non-linear Mechanics
ASME Journal for Engineering and Industry
SAE Journal of Lubrication

PROFESSIONAL MEMBERSHIP:

ASME, *ASM*, Metallurgical Society of *AIME*, American Academy of Mechanics, American Society of Engineering Education

CONSULTING WORKS

DAYCO Corporation.
Ben Johnson Associates.
Outback Shelter Inc.
Advanced Materials and Structures Inc. (President)

COURSES TAUGHT

Undergraduate:

Statics and Dynamics
Mechanics of Materials
Mechanics and Materials Laboratory (developed)
Introduction to Design (developed)

Senior Design Project (developed)
Introduction to Aerospace Structural Analysis (developed)
Design of Machine Elements
Design using Finite Element Methods

Graduate:

Continuum Mechanics
Theory of Elasticity
Advanced Mechanics of Solid
Finite Element Methods (developed)
Non-linear Finite Element Methods (developed)
Fracture Mechanics
Computational Materials Science
Advanced Mechanics of Composite Materials(developed)
Advanced Concepts in Finite Element Methods(developed)

Courses developed/delivered on the world wide web

Continuum Mechanics-Graduate level- (Fall 1999, Fall 2000)-entire archived lectures can be accessed from http://www.eng.fsu.edu/me
Mechanics of Solid-Graduate level- (Spring 2000, Spring 2001)- entire archived lectures can be accessed from http://www.eng.fsu.edu/me