

K. LINGA MURTY -- PUBLICATIONS

North Carolina State University

Raleigh, NC 27695-7909

- 1969 1. "Vacancy Migration and Spin Lattice Relaxation in NaF," *Scripta Met.* 3, 939 (1969).
- 1970 2. "High Temperature Creep Mechanisms in α - Iron and Other Metals," *J. Appl. Phys.*, 41, 4917 (1970). [with M. Gold and A. L. Ruoff]
3. "High Pressure - High Temperature Study of Spin Lattice Relaxation in Pure and Doped LiBr Single Crystals," *Phys. Rev. B*, 1, 114 (1970). [with A. L. Ruoff]
- 1971 4. "Dislocations and Static Quadrupolar Broadening in Some Alkali Halide Single Crystals," *Acta Met.*, 19, 685 (1971).
5. "Effects of Vacancy Sinks and Sources on Serrated Yielding Due To Solute Locking," *Scripta Met.* 5, 1087 (1971). [with F. A. Mohamed and J. E. Dorn]
- 1972 6. "On the Non-Equilibrium Factor for Nucleation Rates in Phase Transformations," *J. Phys. Chem. Solids*, 33, 757 (1972). [with J. E. Dorn]
7. "On the Effect of Vacancy Sinks on Serrated Yielding," *Scripta Met.* 6, 225 (1972). [with P. G. McCormick]
8. "The Elastic Constants of Hard Tissues and Apatites," *J. Biomed Mater. Res.*, 6, 211 (1972). [with D. E. Grenoble, J. L. Katz, K. L. Dunn and R. S. Gilmore]
9. "On the Kinetics of Ordering in CuAu," *Mat. Sci. Eng.*, 9, 183 (1972). [with F. A. Mohamed and J. E. Dorn]
10. "Viscous Glide, Dislocation Climb and Newtonian Viscous Deformation Mechanisms of High Temperature Creep in Al-3Mg," *Acta Met.*, 20, 1009 (1972). [with F. A. Mohamed and J. E. Dorn]
- 1973 11. "High-Temperature Deformation Characteristics of Superplastic Zn-22Al Eutectoid," *Acta Met.*, 21, 1615 (1973). [with M. L. Vaidya and J. E. Dorn]
12. "Parametrization of Low Temperature Deformation Characteristics in Single Crystals of Molybdenum," *J. Appl. Phys.*, 44, 615 (1973) [with K. E. Amin and J. E. Dorn]
13. "Harper-Dorn Creep in Aluminum, Lead and Tin," *Met. Trans.*, 4, 935 (1973). [with F.A. Mohamed and J. W. Morris]
14. "Transitional Creep Mechanisms in Al-5Mg at High Stresses," *Scripta Met.*, 7, 899 (1973).
15. "Grain Boundary Sliding and Viscous Drag Mechanisms of High Temperature Creep in Pb-6Sn," *Scripta Met.*, 7, 1083 (1973).
- 1974 16. "Serrated Yielding in Originally Disordered and Ordered Cu₃Au," *Acta Met.*, 22, 325 (1974). [with F. A. Mohamed and T. G. Langdon]
17. "Viscous Creep in Pb-9Sn," *Mat. Sci. Eng.*, 14, 169 (1974).
- 17a "Non-equilibrium Vacancy Concentration in α -Iron," *Mat. Sci. Eng.*, 14, 217 (1974).
- 1975 18. "Harper-Dorn Creep in Metals," in 'Rate Processes in Plastic Deformation of Materials,' American Society of Metals (1975) pp. 459-478. [with F. A. Mohamed and J. E. Dorn]
- 1976 19. "Dynamic Strain Aging and Neutron Irradiation in Mild Steel," in 'Irradiation Effects on the Microstructure and Properties of Metals,' American Society for Testing and Materials STP 611, 53 (1976). [with E. O. Hall]
- 1977 20. "High Temperature Strain Behavior of Zircaloy," Discussion in 'Zirconium in the Nuclear Industry,' American Society for Testing and Materials STP 633, 64 (1977).
21. "Thermal Creep of Zircaloy-4 Cladding," in Proceedings of the 4th International Conference on STRUCTURAL MECHANICS in REACTOR TECHNOLOGY (1977) paper C3/4. [with G. S. Clevinger and T. P. Papazoglou]
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- 1978 23. "A Textural Model for SCC Susceptibility in HCP Metals (Zircaloy)," *Scripta Met.*, 12, 1151 (1978). [with B. L. Adams and D. L. Baty]
- 1979 24. "Deformation Characteristics of Superplastic Pb-Sn Eutectic at Relatively High Strain-Rates," *Acta Met.*, 22, 731 (1979). [with D. Grivas and J. W. Morris]

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26. "Analysis of Irradiation Growth and Multiaxial Deformation Behavior of Nuclear Fuel Cladding," in 'Zirconium in the Nuclear Industry,' American Society for Testing and Materials STP 681, 189 (1979). [with G. S. Clevinger and B. L. Adams]
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- 1981 28. "Tensile, Creep and Relaxation Characteristics of Zircaloy Cladding at 385C," in Proceedings of the 6th International Conference on STRUCTUREAL MECHANICS in REACTOR TECHNOLOGY (1981) paper C2/3. [with S. G. McDonald]
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- 1984 37. "Creep Modeling of Textured Zircaloy Under Biaxial Loading," in 'Mechanical Behavior of Materials,' J. Carlsson and N. G. Ohlson (eds.), Pergamon Press, Vol. 1, 165 (1984). [with B. L. Adams]
38. "Beneficial (!) Effect of Neutron Irradiation on Mechanical Properties of Mild Steel in Blue Brittle Range," *Scripta Met.*, 18, 87 (1984).
39. "Dynamic Fracture Toughness of Irradiated A533 Grade B Class1 Pressure Vessel Steel," *Nuclear Technology*, 64, 268 (1984). [with R. P. Shogan and W. H. Bamford]
40. "Is Neutron Radiation Exposure Always Detrimental to Metals (Steels)?" *Nature*, 308, 51.
41. "Interaction of Interstitial Impurities with Radiation Induced Defects Leading to Improved Elevated Temperature Mechanical Properties of Mild Steel," *Nuclear Technology*, 67, 124 (1984).
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- 1985 43. "Biaxial Creep of Textured Zircaloy: Part I - Phenomenological and Experimental Descriptions," *Mat. Sci. Eng.*, 70, 169-180 (1985). [with B. L. Adams]
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45. "Temperature and Strain-Rate Dependences of Mechanical Anisotropy of Zircaloy," in Proceedings of the 8th International Conference on STRUCTURAL MECHANICS in REACTOR TECHNOLOGY (1985), paper C1/7.
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47. "An Evaluation of Mechanical Anisotropy of Zircaloy Using Impression Testing," *Scripta Met.*, 19, 1045 (1985). [with Sherief Hussien and Youn H. Jung]
48. "Interstitial-Impurity Radiation-Defect Interactions in Ferritic Steels," *Journal of Metals*, October (1985) pp. 34-39.

- 1986 49. "An Examination of Class A to Class M Transition in Pb-9Sn and Other Alloys," *Met. Trans.* 17A, 1447 (1986). [with T. T. Fang and R. R. Kola]
50. "Biaxial Creep of Zircaloy Cladding," *Trans. IIM*, 39, 357-368 (1986).
51. "Nuclear Materials Research at North Carolina State," *Journal of Metals*, Sept 1986, p.28.
52. "Effect of Interstitial Impurities on Fracture Characteristics of A533B Class I Pressure Vessel Steel," in 'Influence of Radiation on Mechanical Properties: 13th International Symposium,' ASTM STP 956, 395 (1987) [with Youn H. Jung]
- 1987 53. "Deformation and Creep of Textured HCP Metals," in Proceedings of the 5th International Conference on Mechanical Behavior of Materials, ICM-5, Beijing, China, June (1987).
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55. "Upper and Lower Bound Crystal Plastic Modeling of Creep Loci of Zircaloy" in 'Zirconium the Nuclear Industry,' ASTM STP 939, 120 (1987). [with T. S. Mahmood and B. L. Adams]
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58. "Effect of Dynamic Strain Aging on Mechanical and Fracture Properties of Ferritic Steels," Proceedings of 9th International Conference on STRUCTURAL MECHANICS in REACTOR TECHNOLOGY (1987), paper G2/7. [with R.T.Odierno, Y.H.Jung and P.S.Godavarti]
59. "Mechanical Anisotropy and Strain Localization in Textured Zircaloy Sheet," Proceedings of 9th International Conference on STRUCTURAL MECHANICS in REACTOR TECHNOLOGY (1987), paper C3/3. [with S.T.Mahmood and J.Talia]
60. "Creep Anisotropy of Recrystallized Zircaloy-4 TREX Using Impression Tests," Proceedings of 9th International Conference on STRUCTURAL MECHANICS in REACTOR TECHNOLOGY (1987), paper C3/4. [with P.S.Godavarti]
61. "Texture-Based Computer Modeling of Environmentally Induced Cleavage in Hexagonal Close Packed Metals," in Proceedings of the 10th International Conference on Metallic Corrosion, Madras, India, Nov. 1987. pp. 1799 – 1823. [with B.L.Adams and D.L.Baty]
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- 1988 62. "A Personal Computer Based System to Evaluate J-Integral by a Single Specimen Unloading Compliance Method - Part I: Methodology," *J. Eng. Frac. Mech.*, 29, No.1, 1-18 (1988). [with Y.H.Jung, K.R.Narendrnath and P.S.Godavarti]
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66. "A Personal Computer Based System to Evaluate J-Integral By a Single Specimen Unloading Compliance Method - Part II: Results on A533B Class I Steel and Corona-5," *J. Eng. Frac. Mech.*, 30, No.3, 349-359 (1988). [with K.Narendrnath, H.Margolin, Y.H.Jung, P.S.Godavarti]
67. "Texture and Mechanical Anisotropy Gradients in Recrystallized Zircaloy TREX," 8th International Conference on Textures of Materials [ICOTOM8], J.S.Kallend and G.Gottstein [eds.], TMS (1988). [with S.A.Hussien and S.T.Mahmood]
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- 1989 69. "In-Situ NMR Study of Dislocation Jump Distance During Creep of Pure and Doped NaCl Single Crystals," Proceedings of the Symposium on 'Nondestructive Monitoring of Materials Properties,' MRS Symp Proc. 142, 189-194 [with O.Kanert]

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73. "Serrated Flow in Irradiated and Partially Denitrated Mild Steel," Proceedings of the 14th ASTM Symposium on 'Effects of Radiation on Materials,' ASTM STP 1046 (1990) pp. 422 - 430. [with S.T.Mahmood]
74. "Applications of Crystallographic Textures of Zirconium Alloys in Nuclear Industry," in 'Zirconium in the Nuclear Industry: Eighth Symposium,' ASTM STP 1023. pp.570-595.
75. "Impurity-Defect Interactions and Radiation Hardening and Embrittlement in BCC Metals," Proceedings of Symposium on 'Irradiation-Enhanced Materials Science and Engineering,' Met Trans. 20A, 2637-2649 [with M.S.Wechsler]
76. "Investigation of Dislocation Jump Distance During Creep of NaCl Single Crystals using NMR Pulse Techniques," Appl. Phys. Let. 55, 628-630 [with D.Begert, R.Munter and O.Kanert]
77. "Anisotropic Biaxial Creep of Zircaloy Cladding: Effects of Recrystallization and Neutron Irradiation," Proceedings of 10th International Conference on SMiRT, Aug. 1989, paper C. [with S.T. Mahmood]
78. "Contractile Strain Ratios of Textured cp-Titanium Sheet (GradeII)," J. Mat. Shaping Tech. 7, 81-90 (1989). [with L.Muruges, J.Ravi and S.T.Mahmood]
- 1990 79. "A Personal Computer Based System to Evaluate J-Integral by a Single Specimen Unloading Compliance Method - III : Software," Eng. Fract. Mech.36, 341-353 (1990) [with P.S.Godavarti, K.R.Narendrnath and Y.H.Jung]
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82. "In-situ NMR Study of Dislocation Jump Distance During Creep of Pure NaCl Single Crystals," J. Am. Cer. Soc. 73, 861-865. [with D.Begert, R.Munter and O.Kanert]
83. "Dynamic Strain Aging and Neutron Irradiation effects on Mechanical and Fracture Properties of A533B Class1 PV Steel and 2.25Cr-1Mo Steel," J. Test and Eval., 18, 332-337 (1990). [with S.T.Mahmood, K. Al-Otaibi and Y.H.Jung]
84. "Biaxial Creep Testing of Textured Ti-3Al-2.5V Tubing," Met. Trans. 21A, 3001 - 3010. [with V.Venkatesan and S.T.Mahmood]
85. "Effect of Ag⁺ and K⁺ on the Piezoelectric Properties of Pb_{0.6}Ba_{0.4}Nb₂O₆," J. Mat. Sci. Let. 10 (1991) pp.79 - 80. [with G.Padmajarani, K.V.Ramana Murthy, K.Chandramouli and A.Bhanumathi]
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90. "Mechanical Characteristics of In and PbSn Solders in a Thin Film Multichip Package," in MRS Symposium on *Electronic Packaging Materials Science*, MRS, Nov. 90 [with R.Darveaux, E.Yung and I.Turlik]
 91. "In-Situ NMR Investigation of Dynamical Behavior of Point and Line Defects During Deformation of NaCl," in MRS Symposium on *Defects in Materials*, MRS, Nov.90 [with K.Detemple, O.Kanert and J.Th.M.DeHosson]
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 98. "Effects of Niobium Additions on Textures and Mechanical Properties of Zirconium Alloys," in Proceedings of the 11th International Conference on Structural Mechanics in Reactor Technology (SMiRT-11), Tokyo, Japan, Aug.18-23. paper C03/2 [with S.T.Mahmood and J.Ravi]
 99. "Deformation and Recrystallization Textures and Anisotropic Plastic Properties of Zircaloy Sheet," in Proceedings of the 11th International Conference on Structural Mechanics in Reactor Technology (SMiRT-11), Tokyo, Japan, Aug.18-23. paper C03/4 [with S.T.Mahmood]
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 105. "Fracture Toughness in the Dynamic Strain Ageing Regime," *Scripta Met.* **25**, pp. 2585-2588 [with M.Srinivas, G.Malakondaiah and P.Rama Rao]
 - "On the origin of creep anisotropy in a Ti-3Al-2.5V alloy," *J. Mat. Sci. Let.* **10**, pp. 984-986 [with V.Venkatesan and D.S.Sarma]
 - 1992 106. "Biaxial Creep Behavior of Textured Zircaloy Tubing," *Journal of Metals*, Feb. pp.49-55.
 107. "Deformation Mechanisms in PbSn Alloys: Application to Solder Reliability in Electronic Packaging," ASME & JSME Joint Conference on Electronic Packaging, April 9-12, San Jose [with Iwona Turlik].

107. "Creep Life Prediction of Thin-Walled Zirconium Alloy Tubing," in Proceedings of the 5th International Conference on Creep of Materials, ASM, Orlando FL, 17-21 May.
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113. "Mechanical Properties and Deformation Structures of a Zirconium-Niobium-Bismuth Alloy," Metals Materials and Processes, 4, pp. 217-228 [with D.S.Sarma and K.M. Al-Otaibi]
114. "Effect of Dynamic Strain Aging and Neutron Irradiation on Fracture Characteristics of Various Steels and Iron," in Proceedings of ASM Symposium on Microstructure and Mechanical Properties of Aging Materials, Chicago, Oct. 26-29, 1992 [with JH Hong].
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119. "Mechanical Anisotropy and Crystallographic Texture in TiAlMn Alloy Sheet," in Proceedings of Asia-Pacific Symposium on Advances in Engineering Plasticity and its Applications (AEPA-92), Dec. 1992 [with R. Labrecque and J.C. Britt].
- "Impression Testing to Determine the Effects of Recrystallization and Radiation on Deformation Anisotropy of Zircaloy TREX," ASTM STP 1125 (1992) 337 - 354. [with S. T. Mahmood, S. Hussien and P.S. Godavarti]
- 1993 120. "Application of Deformation Mechanism Maps to Solder Reliability in Electronic Packaging," NEPCON West-'93 [with Iwona Turlik and Hong Yang].
121. "Deformation and Fracture Characteristics of Eutectic Al-13%Si," Proceedings of LIMAT-93 [with Rao K. Mahidhara and A.K. Mukherjee].
122. "Biaxial Creep Behavior of Cp-Ti and Ti-3Al-2.5V Alloys," Proceedings of LIMAT-93.
123. "Transitional Creep Mechanisms in a Zr-1Nb-1Sn-0.2Fe Sheet," Proceedings of SMiRT-12, paper C02/3 [with J. Ravi and Wiratmo].
124. "Deformation Mechanisms and Anisotropy in Zircaloy-4 and Nb-Modified Zirconium Alloy Sheets using Load Relaxation Technique," Proceedings of SMiRT-12, paper C02/4 [with K. Webber].
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126. "Mechanical and Creep Anisotropy and Crystallographic Texture of Nb-Modified Zircaloy Sheet," TMS Proceedings of 6th International Symposium on *Environmental Degradation of Materials in Nuclear Power Systems - Water Reactors*, pp. 483-490 [with J.C.Britt, J.Ravi and Wiratmo].

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