

**NASR M. GHONIEM**, *Summary of Experience Record*  
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**CONTACT INFORMATION**

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**PROFESSIONAL PREPARATION**

- B.S. University of Alexandria, Egypt, Dept. of Nuclear Engineering (1971)
- M.Eng. McMaster University, Canada, Dept. of Engineering Physics (1974)
- M.S. University of Wisconsin, USA, Dept. of Nuclear Engineering (1975)
- Ph.D. University of Wisconsin, USA, Dept. of Nuclear Engineering (1977)

**APPOINTMENTS**

- **UC Distinguished Professor**, Mechanical & Aerospace Engr. Dept., UCLA (06-)
- **Vice Chair**, Mechanical & Aerospace Engr. Dept., UCLA (00-06)
- **Joint Professorship**, Materials Science & Engr. Dept., UCLA (2002-)
- **Associate Professor**, Mechanical & Aerospace Engr. Dept., UCLA (82-86)
- **Assistant Professor**, Mechanical & Aerospace Engr. Dept., UCLA (77-82)

**HONORS & AWARDS**

- Fellow of the American Society of Mechanical Engineers (ASME) (2006)
- General Chair: 2<sup>nd</sup> Int. Conf. on Multiscale Materials Modeling (MMM-2) (2004)
- Royal Society of London Visiting Professorship in Hong Kong (2000)
- Research Fellowship of Japan Society for the Promotion of Science (JSPS) (1999)
- Lifetime Outstanding Achievement Award of the American Nuclear Society (1998)
- Fellow of the American Nuclear Society (ANS) (1994)
- Who's Who in Frontier Science and Technology (1983)
- Outstanding Young Man of America Award (1978)
- First world patent on Low Activation Ferritic Steels, U.S. Patent No. 4,622,067 (1986)
- Co-founder (w/ Kubin- France) of Dislocation Dynamics for microplasticity . (1987)

**PROFESSIONAL ACTIVITIES**

- **Member:** The American Nuclear Society (ANS), the American Academy of Mechanics, the Materials Research Society (MRS); The American Society for Mechanical Engineers (ASME), and the American Physical Society (APS).
- **Associate Editor:**
  1. Defect and Diffusion Forum, Scitec Publishers.
  2. Solid State Phenomena, Scitec Publishers.
- **Editorial Boards:**
  1. Journal of Nuclear Materials (JNM)
  2. Journal of Computational Methods in Engineering Science (CMES)

3. Journal of Computational and Theoretical Nano Science (JCTNS)
4. International Journal of Materials & Mechanics in Design (Kluwer)
5. Guest Editor, Journal of Computer Aided Material Design (JCAD)
6. Guest Editor, Materials Research Society Proceedings (MRS)
7. Guest Editor, Philosophical Magazine (Phil Mag)
8. Guest Editor, Vacuum

### PUBLICATIONS

*Over 270 publications (192 refereed journal articles):*

Damage and Failure of Materials in Mechanical Design; Mechanics and Physics of Material Defects (point defects, dislocations, voids and cracks); Material Degradation in Severe Environments (e.g. Nuclear, Fusion, Rocket Engines, etc.); Plasma and Laser Processing; Materials Non-equilibrium, Pattern formation and Instability Phenomena; Radiation Interaction with Materials (neutrons, electrons, particles, laser & photons): see: <http://osiris.seas.ucla.edu/>

### BOOKS

1. Nasr M. Ghoniem and Daniel Walgraef, *Instabilities and Self-Organization in Materials, Volume I: Fundamentals of Nanoscience*, Oxford University Press, September 2007.
2. Nasr M. Ghoniem and Daniel Walgraef, *Instabilities and Self-Organization in Materials, Volume II: Applications in Materials Design and Nanotechnology*, Oxford University Press, September 2007.

### EDITED BOOKS

3. N.M. Ghoniem, co-editor, "Patterns, Defects and Materials Instabilities," Kluwer Academic Publishers, The Netherlands, 1990, 393 pages.
4. N.M. Ghoniem, Editor, "Plastic and Fracture Instabilities in Materials," ASME Publications, AMD-200/ MD-57, 1996, 229 pages.
5. Akira Kobayashi and Nasr M. Ghoniem, co-editors, "Advances in Applied Plasma Science, Vol. I" Proc. of the 1<sup>st</sup> Int. Symp. on Appl. Plasma Science, 22-26 Sept. 1997, UCLA, Los Angeles, CA., USA, 198 pages.
6. Bulatov, T. Diaz de la Rubia, R. Phillips, E. Kaxiras, and N. M. Ghoniem, Co-editors, "Multiscale Modeling of Materials," Proc. of the 1998 MRS Soc. Symp., **538**, 1999, 591 pages.
7. Akira Kobayashi and Nasr M. Ghoniem, Co-editors, "Advances in Applied Plasma Science, Vol. II" Proc. of the 2<sup>nd</sup> Int. Symp. on Appl. Plasma Science, 20-24 Sept. 1999, Osaka Sun Palace, Osaka, Japan, 453 pages.
8. Nasr M. Ghoniem, Editor, Proc. of the 2<sup>nd</sup> Int. Conf. on Multiscale Materials Modeling (MMM-2), Los Angeles, CA., October 2004, 484 pages

### SPECIAL ISSUES OF JOURNALS

9. N.M. Ghoniem, R. Jones, E. Bloom, Eds, Fusion Materials and Design, special issue of *Nuclear Engineering and Design/Fusion*, **2:1**, 1984.
10. N.M. Ghoniem, H. Heinisch H. Huang, L. Kubin, Yu, and S. Yip, Guest Editors, Special Issue "Multiscale Materials Modeling," *J. Comp.-Aided Mater. Design*, **6**, No. **2&3** (1999) 374 pages.
11. N.M. Ghoniem and K.J. Cho, Guest Editors, Special Issue: "Mechanics of Materials from the nano- to the Meso-scale," *J. Comp. Meth. Engr. Science, CMES*, **3(2)** (2002)

12. Nasr M. Ghoniem, Hanchen Huang, and Esteban Busso, co-editors, "Special Issue on Multiscale Modeling of Materials," *Phil. Mag. A*, **83** (31-34) (2003).

#### CHAPTERS & ARTICLES IN BOOKS

13. N.M. Ghoniem, "Pressure Vessel Technology," G. Liu and R. Nichols, Pergamon Press, New York, 1989, Book Review in *Nuclear Technology*, 1990.
14. N.M. Ghoniem, R.J. Amodeo, "Computer Simulation of Dislocation Pattern Formation," in *Non-Linear Phenomena in Materials Science-I*, L. Kubin and G. Martin, Eds., pp. 377-388.
15. N. M. Ghoniem and R. J. Amodeo, "Numerical Simulation of Dislocation Patterns During Plastic Deformation," in *Patterns, Defects and Materials Instabilities*, D. Walgraef and N. M. Ghoniem, Eds., Applied Sciences, Series E, **183**, NATO ASI Series (Kluwer, The Netherlands, 1990) pp. 303-329.
16. R.J. Amodeo, N.M. Ghoniem, "Rapid Algorithms for Dislocation Dynamics in Micromechanical Calculations," *Modeling of Deformation of Crystalline Solids*, T. Lowe, T. Rollett, P. Follansbee, and G. Daehn, Eds., TMS Press, 1991, pp. 125-143.
17. N.M. Ghoniem, "Non-Linear Dynamics of Shear Crack Interaction with Dislocations," *Non-Linear Phenomena in Material Science II*, L. Kubin and G. Martin, Eds., Kluwer Academic Publishers, 1992.
18. Nasr M. Ghoniem, "Computational Methods For Mesoscopic, Inhomogeneous Plastic Deformation", *Proceedings of First Latin American Symposium on Materials Instabilities*, Valpareso, Chile, Kluwer Publication, 2000.
19. Nasr M. Ghoniem, "Radiation Damage Correlations For Fusion Conditions", *Encyclopedia of Materials: Science and Technology*, Pergamon Press, Elsevier Science Publication, 3413-3418 (2001), ISBN:0-08-0431526.
20. Nasr M. Ghoniem and Nick Kioussis, Hierarchical Models of Nanomechanics and Micromechanics," *Encyclopedia of Nanoscience and Nanotechnology*, American Scientific Publisher;,in Press, (2004).
21. Nasr M. Ghoniem, "Modeling the Dynamics of Dislocation Ensembles," *Handbook on Materials Modeling*, Kluwer-Springer,in Press (2004).
22. Nasr M. Ghoniem, "A Perspective on Dislocation Dynamics," in Handbook of Materials Modeling, S. Yip, Editor, Published by Kluwer-Springer, the Netherlands, Volume 2, 2871-2877 (2005).
23. Nasr M. Ghoniem, "The Role of Theory and Modeling in the development of Materials for Fusion Energy," in Handbook of Materials Modeling, S. Yip, Editor, Published by Kluwer-Springer, the Netherlands, Volume 2, 2269-2286 (2005).

#### PAPERS IN REFEREED JOURNALS

24. N. M. Ghoniem and G. L. Kulcinski, "A Rate Theory Approach to Time Dependent Microstructural Development During Irradiation," *Radiat. Eff.*, **39**:47-56, 1978.
25. N. M. Ghoniem and G. L. Kulcinski, "Swelling of Metals During Pulsed Irradiation," *J. Nucl. Mater.*, **69&70-1&2**:816-820, 1978.
26. J. M. Griesmeyer and Ghoniem, N. M. "The Response of Fission Gas Bubbles to the Dynamic Behavior of Point Defects," *J. Nucl. Mater.*, **80**:88-101, 1979.
27. N. M. Ghoniem and G. L. Kulcinski, "The Effect of Damage Rate on Void Growth in Metals," *J. Nucl. Mater.*, **82-2**:392-402, 1979.
28. N. M. Ghoniem and D. D. Cho, "The Simultaneous Clustering of Point Defects During Irradiation," *Phys. status solidi (a)* **54**:171-178, 1979.

29. N. M. Ghoniem and G. L. Kulcinski, "The Use of the Fully Dynamic Rate Theory to Predict Void Growth in Metals," *Radiat. Eff.*, **41**:81-89, 1979.
30. N. M. Ghoniem and G. L. Kulcinski, "The Effect of Pulsed Irradiation on the Swelling of 316 Stainless Steel in Fusion Reactors," *Nucl. Eng. Des.*, **52-1**:111-125, 1979.
31. J. M. Griesmeyer, N. M. Ghoniem, and D. Okrent, "A Dynamic Intragranular Fission Gas Behavior Model," *Nucl. Eng. Des.*, **55-1**:69-95, 1979.
32. N. M. Ghoniem and G. L. Kulcinski, "Void Growth Characteristics in Laser Fusion First Walls," *J. Nucl. Mater.*, **85&86,IIA**:547-552, 1979.
33. N. M. Ghoniem, "The Early Stages of Void and Interstitial Loop Evolution in Pulsed Fusion Reactors," *J. Nucl. Mater.*, **89-2&3**:359-371, 1980.
34. N. M. Ghoniem and S. Sharafat, "A Numerical Solution to the Fokker-Planck Equation Describing the Evolution of the Interstitial Loop Microstructure During Irradiation," *J. Nucl. Mater.*, **92-1**:121-135, 1980.
35. H. Gurol and N. M. Ghoniem, "Irradiation Creep by the Climb-Controlled Glide Mechanism in Pulsed Fusion Reactors," *Radiat. Eff.*, **52**:103-126, 1980.
36. H. Gurol, N. M. Ghoniem, and L. K. Mansur, "A Correction to Irradiation Creep by the Climb-Controlled Glide Mechanism in Pulsed Fusion Reactors," *Radiat. Eff. Lett.*, **67(1-2)**:27-30, 1981.
37. N. M. Ghoniem and H. Gurol, "An Analytical Approach to Void Growth in Metals Under Intense Radiation Pulsing," *Radiat. Eff.*, **55**:209-222, 1981.
38. H. Gurol, N. M. Ghoniem, and W. G. Wolfer, "The Role of Dispersed Barriers in the Pulsed Irradiation Creep of Magnetic Fusion Reactor Materials," *J. Nucl. Mater.*, **99**:1-15, 1981.
39. M. E. Sawan, G. L. Kulcinski, and N. M. Ghoniem, "Production and Behavior of Point Defects in Pulsed Inertial Confinement Fusion Reactors," *J. Nucl. Mater.*, **103-104**:109-113, 1981.
40. H. Gurol, N. M. Ghoniem, and W. G. Wolfer, "Enhancement of Irradiation Creep in Pulsed Fusion Reactors," *J. Nucl. Mater.*, **103-104**:1251-1255, 1981.
41. J. Yaung and N. M. Ghoniem, "Modifications of the Fuel Rod Analysis Program FRAP-S3 to Account for the Effects of Fuel Initial Density," *Nucl. Tech.*, **54-1**:87-91, 1981.
42. R. Schafer and N. M. Ghoniem, "The Interaction of Helium and Displacement Damage in Inertial Confinement Fusion Reactors," *J. Nucl. Mater.*, **104**:1457-1461, 1982.
43. N. M. Ghoniem and M. L. Takata, "A Rate Theory of Swelling Induced by Helium and Displacement Damage in Fusion Reactor Structural Materials," *J. Nucl. Mater.*, **105-2-3**:276-292, 1982.
44. N. M. Ghoniem and R. W. Conn, "Report on the Second American Nuclear Society Topical Meeting on Fusion Reactor Materials," *Nucl. Fusion.*, **22**:977-984, 1982.
45. N. M. Ghoniem and G. L. Kulcinski, "A Critical Assessment of the Effects of Pulsed Irradiation on the Microstructure, Swelling, and Creep of Materials," *Nucl. Technol./Fusion.*, **2-2**:165-198, 1982.
46. R. W. Conn, V. Dhir, N. M. Ghoniem, et al., "Studies of the Physics and Engineering of Deuterium-Deuterium Barrier Tandem Mirror Reactors," *Nucl. Technol./Fusion.*, **2-4**:563-589, 1982.
47. P. S. Chou and N. M. Ghoniem, "Precipitate Dissolution Due to High Energy Collision Cascades," *J. Nucl. Mater.*, **117**:55-63, 1983.
48. N. M. Ghoniem, S. Sharafat, J. Williams, and L. K. Mansur, "The Theory of Helium Transport and Clustering in Materials Under Irradiation," *J. Nucl. Mater.*, **117**:96-105, 1983.

49. N. M. Ghoniem and D. H. Berwald, "Analysis of Blanket-Structure Lifetime for the Tandem Mirror Hybrid Reactor (TMHR)," *Nucl. Technol./Fusion.*, **4(2,2)**:439-444, 1983.
50. N. M. Ghoniem, member TMHR design team (TRW, LLL, Westinghouse, General Atomic, ORNL, ETEC, UCLA) "Fusion Breeder Reactor Design Studies," *Nucl. Technol./Fusion.*, **4(2,2)**:589-598, 1983.
51. R. W. Conn, N. M. Ghoniem, S. P. Grotz, F. Najmabadi, K. Taghavi, and M. Z. Youssef, "Influence of Startup, Shutdown and Staged Power Operation on Tandem Mirror Reactor Design," *Nucl. Technol./Fusion.*, **4(2,2)**:615-622, 1983.
52. N. M. Ghoniem, K. Taghavi, J. Blanchard, and S. P. Grotz, "Limits on Transient Power Variations During Startup and Shutdown of Li-Pb Cooled TMR Blankets," *Nucl. Technol./Fusion.*, **4(2,3)**:769-774, 1983.
53. N. M. Ghoniem, member MARS blanket design team (TRW, General Dynamics, ETEC, UCLA), "MARS High Temperature Blanket," *Nucl. Technol./Fusion.*, **4**:1233-1238, 1983.
54. N. M. Ghoniem and R. W. Conn, "Assessment of Ferritic Steels for Steady-State Fusion Reactors," *Fusion Reactor Design and Tech.*, II IAEA-TC-392/62 (International Atomic Energy Agency, Vienna, 1983) pp. 389-402.
55. R. J. Amodeo and N. M. Ghoniem, "Constitutive Design Equations for Thermal Creep Deformation of HT-9," *J. Nucl. Mater.*, **122&123**:91-95, 1984.
56. J. P. Blanchard and N. M. Ghoniem, "The Influence of Irradiation and Thermal Creep on Stress Redistribution in Fusion Blankets," *J. Nucl. Mater.*, **122&123**:101-105, 1984.
57. E. P. Simonen, N. M. Ghoniem, and N. H. Packan, "Pulsed Flux Effects on Radiation Damage," *J. Nucl. Mater.*, **122&123**:391-401, 1984.
58. S. Sharafat and N. M. Ghoniem, "Stability of Helium-Vacancy Clusters During Irradiation," *J. Nucl. Mater.*, **122&123**:531-536, 1984.
59. N. M. Ghoniem, "Helium Migration and Its Influence on Cavity Formation in Irradiated Materials," *Res Mechanica*, **10**:287-294, 1984.
60. K. Taghavi and N. M. Ghoniem, "Transient Thermal-Hydraulics Considerations of Tandem Mirror Li-Pb Cooled Blankets During Start-Up/Shut-Down Operations," *Nucl. Eng. Des./Fusion.*, **1,4**:369-374, 1984.
61. K. Taghavi and N. M. Ghoniem, "Primary Loop Conditioning and Design Constraints on Li-Pb Cooled Tandem Mirror Reactors During Start-Up/Shut-Down Operations," *Nucl. Eng. Des./Fusion*, **1,4**:375-386, 1984.
62. P. S. Chou and N. M. Ghoniem, "An Approximate Analytical Calculation of Precipitate Dissolution Rate Using a Slowing Down-Diffusion Theory for Charged Particles," *Nucl. Instr. and Meth.*, **B9**:209-217, 1985.
63. J. P. Blanchard and N. M. Ghoniem, "Inelastic Structural Analysis of the MARS Tandem Mirror Fusion Reactor," *Nucl. Eng. Des./Fusion.*, **2**:19-27, 1985.
64. R. S. Amodeo and N. M. Ghoniem, "Development of Design Equations for Ferritic Alloys in Fusion Reactors," *Nucl. Eng. Des./Fusion.*, **2**:97-110, 1985.
65. R. Bullough and N. M. Ghoniem, "The Effect of Void Surface Motion on the Void Sink Strength for Point Defects," *J. Nucl. Mater.*, **127**:47-55, 1985.
66. N. M. Ghoniem, J. N. Alhajji, and D. Kalleta, "The Effect of Helium Clustering on Its Transport to Grain Boundaries," *J. Nucl. Mater.*, **136**:192-206, 1985.

67. P. Chou and N. M. Ghoniem, "On the Stochastic Theory of Point Defect Diffusion During Irradiation: Cascade Size and Shape Effects," *J. Nucl. Mater.*, **137**:63-72, 1985.
68. J. P. Blanchard and N. M. Ghoniem, "The Influence of Uncertainties in Material Properties, and the Effects of Dimensional Scaling on the Prediction of Fusion Structure Lifetimes," *Nucl. Eng. Des./Fusion.*, **4**:67-74, 1986.
69. P. S. Chou and N. M. Ghoniem, "Collisional Aspects of Preferential Sputtering Using the Monte Carlo Method," *J. Nucl. Mater.*, **141-143**:216-220, 1986.
70. R. Martin and N. M. Ghoniem, "Modeling of Tritium Transport in a Fusion Reactor Pin-Type Solid Breeder Blanket Using the DIFFUSE Code," *J. Nucl. Mater.*, **141-143**:244-248, 1986.
71. J. N. Al-Hajji and N. M. Ghoniem, "Comprehensive Modeling of Creep Fracture by Grain Boundary Cavitation in Irradiated Structural Alloys," *J. Nucl. Mater.*, **141-143**:536-539, 1986.
72. N. M. Ghoniem, M. A. Firestone, and R. W. Conn, "The Influence of Reactor Operations on the Design and Performance of Tokamaks with Solid Breeder Blankets." Invited Paper Presented at Seventh Top. Mtg. on Technology of Fusion Energy (Reno, NV, June 1986) *Fusion Technol.*, **10**:1133-1145, 1986.
73. G. E. Orient and N. M. Ghoniem, "A Model for the Mechanical Interaction Between Solid Breeder and Cladding Materials," *Fusion Technol.*, **10**:1617-1622, 1986.
74. J. P. Blanchard and N. M. Ghoniem, "The Bowing of Solid Breeder Rods in a Pin-Type Fusion Reactor," *Fusion Technol.*, **10**:1623-1627, 1986.
75. P. Levin and N. M. Ghoniem, "Neutronic Optimization of a LiAlO<sub>2</sub> Solid Breeder Blanket," *Fusion Technol.*, **10**:1634-1639, 1986.
76. J. P. Blanchard, N. M. Ghoniem, and S. P. Chou, "An Approximate Solution to the Scattering Integral for General Interatomic Potentials," *J. Appl. Phys.*, **61**:3120-3123, 1987.
77. J. N. Al-Hajji and N. M. Ghoniem, "Nucleation of Grain Boundary Cavities Under the Combined Influence of Helium and Applied Stress," *Acta Metall.*, **35**:1067-1075, 1987.
78. P. Chou and N. M. Ghoniem, "Applications of the Monte Carlo Code TRIPOS to Surface and Bulk Ion Transport Problems," *Nucl. Instr. Meth. Phys. Res.*, **B28**:175-184, 1987.
79. N. M. Ghoniem, member design team, "Updated Reference Design of a Liquid-Metal-Cooled Tandem Mirror Fusion Breeder," *Fusion Technol.*, **12**:30-70, 1987.
80. R. C. Martin and N. M. Ghoniem, "Monte Carlo Simulation of Coupled Ion-Electron Transport in Semiconductors," *Phys. status solidi (a)*, **104**:743-754, 1987.
81. R. C. Martin, N. M. Ghoniem, Y. Song, and J. S. Cable, "The Size Effect of Ion Charge Tracks on Single Event Multiple Bit Upset," *IEEE Trans. Nucl. Sci.*, NS-34(6), Dec. 1987.
82. F. Issacci, N. M. Ghoniem, and I. Catton, "Magnetohydrodynamic Flow in a Curved Pipe," *Phys. Fluids*, **31**:65-71, 1988.
83. R. J. Amodeo and N. M. Ghoniem, "Dynamical Computer Simulation of the Evolution of a One-Dimensional Dislocation Pileup," *Int. J. Eng. Sci.*, **26**:653-662, 1988.
84. R. J. Amodeo and N. M. Ghoniem, "A Review of Experimental Observations and Theoretical Models of Dislocation Cells and Subgrains," *Res Mechanica*, **23**:137-160, 1988.
85. N. M. Ghoniem, "Determination of the Bias Factor by the Moments Solution to the Fokker-Planck Equation," *J. Nucl. Mater.*, **155-157**:1123-1127, 1988.

86. N. M. Ghoniem and S. P. Chou, "Binary Collision Monte Carlo Simulations of Cascades in Polyatomic Ceramics," *J. Nucl. Mater.*, **155-157**:1263-1267, 1988.
87. N. M. Ghoniem and R. Amodeo, "Computer Simulation of Dislocation Pattern Formation," *Solid State Phenomena*, **3&4**:377-388, 1988.
88. D. Walgraef and N. M. Ghoniem, "Spatial Instabilities and Dislocation Loop Ordering in Irradiated Materials," *Phys. Rev.* **B39**:8867-8872, 1989.
89. S. P. Chou and N. M. Ghoniem, "On Precipitate Dissolution Using the Cascade Slowing-Down Theory," *Nucl. Instr. Meth. Phys. Res.* **B42**:145-148, 1989.
90. N. M. Ghoniem, "Stochastic Theory of Diffusional Planar Atomic Clustering and Its Application to Dislocation Loops," *Phys. Rev.* **B39**:11810-11819, 1989.
91. S. Sharafat, N. M. Ghoniem, and P. I. H. Cooke, "Material Selection for the TITAN Reversed-Field-Pinch Reactor," *Fusion Eng. and Design*, **8**:305-310, 1989.
92. S. P. Grotz and N. M. Ghoniem, "Overview of the TITAN-I Fusion-Power Core," *Fusion Eng. and Design*, **9**:367-373, 1989.
93. M. Z. Hasan, J. P. Blanchard, and N. M. Ghoniem, "Thermal-Hydraulic and Structural Design for the Lithium-Cooled TITAN-I Reversed-Field-Pinch Reactor," *Fusion Eng. and Design*, **9**:431-436, 1989.
94. C. A. Stone and N. M. Ghoniem, "Modeling the Early Stages of Thin Film Formation by Energetic Atom Deposition," *Metall. Trans.*, **20A**:2609-2617, 1989.
95. J. P. Blanchard and N. M. Ghoniem, "Relaxation of Thermal Stress Singularities in Bonded Viscoelastic Quarter Planes," *J. Appl. Mechanics*, **56**:756-762, 1989.
96. J. P. Blanchard and N. M. Ghoniem, "An Eigenfunction Approach to Singular Thermal Stresses in Bonded Strips," *J. Thermal Stresses*, **12**:501-527, 1989.
97. F. Issacci, I. Catton, A. Heiss, and N. M. Ghoniem, "Analysis of Heat Pipe Vapor Dynamics," *Chem. Eng. Comm.*, **85**:85-94, 1989.
98. N. M. Ghoniem and J. B. Whitley, "Fusion Neutron Test Facility Requirements for Interactive Effects in Structural and High-Heat-Flux Components," *J. Fusion Energy*, **8**:157-167, 1989.
99. N. M. Ghoniem, J. R. Matthews, and R. J. Amodeo, "A Dislocation Model for Creep in Engineering Materials," *Res Mechanica*, **29**:197-219, 1990.
100. R. J. Amodeo and N. M. Ghoniem, "Dislocation Dynamics: Part I-A Proposed Methodology for Deformation Micromechanics," *Phys. Rev.*, **B41**:6958-6967, 1990.
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103. C. A. Stone and N. M. Ghoniem, "The Effects of Cluster Size-Dependent Aggregation on Thin Film Formation," *Vacuum*, **41**:1111-1113, 1990.
104. J. P. Blanchard and N. M. Ghoniem, "Analysis of Singular Stress Fields in Duplex Fusion Components," *J. Nucl. Mater.*, **174**:54-70, 1990.
105. N. M. Ghoniem, "Nucleation and Growth Theory of Cavity Evolution Under Conditions of Cascade Damage and High Helium Generation," *J. Nucl. Mater.*, **174**:168-177, 1990

106. S. P. Chou and N. M. Ghoniem, "The Effects of Many-Body Interactions on Point-Defect Generation," *J. Nucl. Mater.*, **176**:909-912, 1991.
107. N. M. Ghoniem, "Theory of Microstructure Evolution Under Fusion Neutron Irradiation," *J. Nucl. Mater.*, **179**:99-104, 1991.
108. N. M. Ghoniem, "Prospects for Development of Low-Activation Materials," *J. Fusion Energy*, **10**(1):53-56, 1991.
109. P. Chou and N. M. Ghoniem, "Molecular Dynamics of Collision Cascades with Composite Pair/Many-Body Potentials," *Phys. Rev. B*, **43**(4):2490-2495, 1991.
110. R. C. Martin and N. M. Ghoniem, "A Hybrid Finite-Element/Particle-Simulation Method for the Analysis of Semiconductor Transients," *Solid-State Electronics*, **36**(6):573-581, 1991.
111. F. Issacci, I. Catton, and N.M. Ghoniem, "Vapor Dynamics of Heat Pipe Startup," *J. Heat Transfer*, **113**:985-994, 1991.
112. C.A. Stone and N.M. Ghoniem, "The Influence of Low-Energy Particle-Surface Interactions on the Initial Stages of Thin Film Formation," *J. Vac. Sci. Technol.*, **A9**(3):759-767, 1991.
113. F.J. Perez and N.M. Ghoniem, "Chemical Compatibility of SiC Composite Structures with Fusion Reactor Helium Coolant at High-Temperatures," *Fusion Engineering & Design*, **22**, 1993, pp. 415-426.
114. N.M. Ghoniem, "High-Temperature Mechanical and Material Design for SiC Composites," *J. Nucl. Mater.*, **191-194**:551-519, 1992.
115. H. Huang, N.M. Ghoniem, "Linear Stability Analysis of Helium-Filled Cavities in SiC," *J. Nucl. Mater.*, **191-194**:607-610, 1992.
116. A. El-Azab and N.M. Ghoniem, "Molecular Dynamics Study of the Displacement Threshold Surfaces and the Stability of Frenkel Pairs in Beta-SiC," *J. Nucl. Mater.*, **191-194**:1110-1114, 1992.
117. M. Vicanck and N.M. Ghoniem, "The Effects of Mobility Coalescence on the Evolution of Surface Atomic Clusters," *Thin Solid Films*, 207, 1992, pp. 90-97.
118. M. Vicanck and N.M. Ghoniem, "Two-Group Approach to the Kinetics of Particle Cluster Aggregation," *J. Computational Phys.*, **100**, 1992, pp. 1-10.
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