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PROFESSIONAL INTERESTS:

Materials processing and manufacturing; special interests in welding and joining of metals, ceramics and electronic materials; deformation processing; alternate manufacturing processes; manufacturing management; materials systems analysis; selection and design of materials and failure analysis.

EDUCATION:

S.B. Metallurgy and Materials Science,
Massachusetts Institute of Technology, 1972
Sc.D. Metallurgy, Massachusetts Institute of Technology, 1975
--- Business Administration, Lehigh University, 1975-76
--- Program for Senior Executives, Sloan School of Management,
Massachusetts Institute of Technology, 1988

EMPLOYMENT:

Bethlehem Steel Corporation
Homer Research Laboratories
Research Engineer, 1974-1976
Massachusetts Institute of Technology
Department of Materials Science and Engineering
Assistant Professor of Materials Engineering, 1976-1980
Associate Professor of Materials Engineering, 1980-1987
US Office of Naval Research - Tokyo
Liaison Scientist, 1984-1985
Massachusetts Institute of Technology
Professor of Materials Engineering, 1987-
Professor of Engineering Systems, 2000-
Leaders for Manufacturing Professor, 1988-1993
Department Head, Materials Science and Engineering (Acting), March 1989 –August, 1989

Richard P. Simmons Professor of Materials Engineering, 1990-1993
Director, Materials Processing Center, 1991-1993
POSCO Professor of Materials Engineering, 1993-1999
Co-Director, Leaders for Manufacturing Program, 1993-1995
Department Head, Materials Science & Engineering, 1995-2000
Thomas Lord Professor of Materials Engineering and Engineering Systems, 2001-2005
Professor of Materials Engineering and Engineering Systems, 2005-2015
Professor of Materials Engineering and Engineering Management, 2015 -

HONORS AND AWARDS:

International Junior Civitan of the Year, 1968
Dennison K. Bullens Scholarship, 1969-1971
Foundry Educational Foundation Scholarship, 1970-1971
Phi Lambda Upsilon, Member 1971
Tau Beta Pi, Member, 1971; Distinguished Service Award, 1980
National Science Foundation Graduate Fellowship, 1972-1974
Metallurgy and Materials Prize, Boston Section AIME, 1972
Adams Memorial Membership Award, American Welding Society, 1979-1983
Charles H. Jennings Memorial Medal, American Welding Society, 1983, 1991, 2003
Champion H. Mathewson Gold Medal, TMS-AIME, 1987
Henry Krumb Lecturer, TMS/SME-AIME, 1987
National Science Foundation Creativity Extension Award, 1988-1990
ASM International, Fellow, 1989
Houdremont Lecturer, International Institute of Welding, 1990
Warren F. Savage Award, American Welding Society, 1990, 1996
William Spraragen Award, American Welding Society, 1990, 1993
Comfort A. Adams Lecturer, American Welding Society, 1992
Henry Marion Howe Medal, ASM International, 1992
William Irrgang Award, American Welding Society, 1993
Leaders for Manufacturing Professorship, 1988-1993
Richard P. Simmons Professorship, 1990-1993
POSCO Professorship, 1993-1999
Thomas Lord Professorship, 2001-2005
American Welding Society, Fellow, 1994, Honorary Member, 1999
Nelson W. Taylor Lecturer, Pennsylvania State University, 1995
National Academy of Engineering, 1997
General Electric Distinguished Lecture, Rensselaer Polytechnic Institute, 2001
Silver Quill Award, American Welding Society, 2002
American Association for the Advancement of Science, Fellow, 2003
College of Engineering and Technology, Lecturer, Brigham Young University, 2004
MIT Naval Construction and Engineering Graduate Program Award, 2007
Plummer Lecturer, American Welding Society, 2008

ACTIVITIES:

National Academy of Engineering, Member, Nominating Committee Member

American Welding Society, Fellow and Honorary Member; *Welding Journal*, Principal Reviewer; Professional Certification Committee
ASM International, Fellow
American Institute of Mining, Metallurgical and Petroleum Engineers, Member
Tau Beta Pi, Member, New England District Director 1977-1980, MIT Chapter Advisor, 1977- 2001, Chief Advisor, 2002 -
American Association for the Advancement of Science, Fellow; Member, Electorate Nominating Committee, 2006-2009
Society of Automotive Engineers, Member
American Society of Mechanical Engineers, Member
American Society for Testing and Materials, Member
Registered Professional Engineer, Massachusetts Certificate Number 29726
Editorial Board, *Science and Technology of Welding and Joining*

SERVICE ON NATIONAL AND INTERNATIONAL LEVEL

National Research Council:
SR-1256 – Project Advisory Committee for Investigation of Steels for Improved Weldability in Ship Construction, member, 1978-1983
Unit Manufacturing Process Research Committee, member, 1991-1995
Department of Energy Panel on Integrated Manufacturing, member, 1994, 1996
Panel for Materials Science and Engineering, member, 1991-1996
Panel on Structural and Multifunctional Materials, 2000-2001
National Materials Advisory Board, 1998-2002
Committee on Future Needs in Deep Submergence Science, 2003-2004
Committee on New Directions in Manufacturing, 2002-2004
Board on Manufacturing and Engineering Design, 2003-2005
Advanced Technical Institute, Project Technical Representative, 2004-2006
Committee on Air Force/Department of Defense Aerospace Propulsion, 2005-2006
Panel on Armor and Armaments, 2007 -
Panel on Manufacturing Related Programs at NIST, 2011-2012

MIT Lincoln Laboratory – Red Team – Haystack W-Band Radar Upgrade, 2005-2006

U.S. Congress:
Manufacturing R&D: How Can the Federal Government Help? – Testimony before the Subcommittee on Environment, Technology and Standards, Committee on Science, U.S. House of Representatives, 108th Congress June 5, 2003

U.S. Department of Energy:
Idaho National Engineering Laboratory, Review of Materials Research Program, 1999
Oak Ridge National Laboratory, Review Panel, Division of Metals, Ceramics and Engineering, 2002
Sandia National Laboratories, Materials Science and Technology External Advisory Panel, 2005-2007

State of Ohio: Ohio State Board of Regents, Review Panel, Capital Equipment Funding, 1999

Province of Ontario, Canada: External Examiner, Doctoral Thesis of Wen Tan, 2004
University of Porto, Portugal: Doctoral Thesis Committee of Sergio Tavares, 2009
State of Indiana, 21st Century Research and Technology Fund, Project Review 2009
Jadavpur University, Kolkata, India External Examiner of Joydeep Maity, 2009

State of Massachusetts: Technical Advisor, State Plumbing Board

TEACHING EXPERIENCE:

Undergraduate:	Graduate:	Professional:
Thermodynamics	Kinetics	Materials Selection
Chemical Metallurgy	Thermodynamics	Welding and Joining Processes
Physical Metallurgy	Deformation Processing	Failure Analysis
Materials Processing	Welding and Joining Processes	Non-destructive Testing
Solid State Chemistry	Materials Selection	
Physical Chemistry	Product Design	
Essentials of Engineering	Case Studies in Naval Ship Construction Maintenance and Repair	
Colossal Failures in Eng'g		

PUBLICATIONS:

1. "Metallurgical Considerations for Optimizing the Superconducting Properties of Nb_3Al," J.G. Kohr, T.W. Eagar, and R.M. Rose, *Metall. Trans., 3(5),* 1177, 1972.

2. "Preliminary Measurements of the Critical Current Density of $Nb_3Al_{0.8}Ge_{0.2}$ Ribbon", R. Loberg, T. W. Eagar, I. M. Puffer, R. M. Rose, in *Proc of Fourth Int. Conf. on Magnet Technology*, Brookhaven National Lab, 1972.

3. "Fabrication and Jc(H,T) Measurements on $Nb_3Al_{.75}Ge_{.25}$ Ribbon," R. Loberg, T.W. Eagar, I.M. Puffer and R.M. Rose, *Appl. Phys. L., 22(2),* 69, 1973.

4. "Resistive Measurements on an Improved NbAlGe Superconducting Ribbon," T.W. Eagar and R.M. Rose, *IEEE Nucl. S., NS-20 (3),* 742, 1973.

5. "Improved Jc in Mechanically Fabricated Nb_3Al Wires and Ribbons," T.W. Eagar and R.M. Rose, *IEEE Magnet., Mag-11(2),* 214, 1975.

6. "LNG Hull Steels with Improved High Heat Input Weldability," T.W. Eagar and J.C. Baker, ASM-ASTM-MPC Symposium on Low Temperature Properties of Ship Plate, 1976.

7. "Sources of Weld Metal Oxygen Contamination During Submerged Arc Welding," T.W. Eagar, *Welding J., 57(3),* 76s, 1978.

8. "Electromagnetically and Thermally Driven Flow Phenomena in Electroslag Welding," A.H. Dilawari, J. Szekely and T.W. Eagar, *Metall. Trans., 9B(9),* 371, 1978.

9. "An Analysis of Heat and Fluid Flow Phenomena in Electroslag Welding," A.H. Dilawari, T.W. Eagar and J. Szekely, *Welding J., 57(1),* 24s, 1978.

10. "A Mathematical Model of Heat and Fluid Flow Phenomena in Electroslag Welding," J. Szekely and T.W. Eagar, in *Proc. of IIW Coll. on Applications of Numerical Techniques in Welding*, Dublin, Ire., 1, 1978.

11. "Oxygen and Nitrogen Contamination During Arc Welding" T.W. Eagar, in *Proc. of Welding-Physical Metallurgy and Failure Phenomena*, R.J. Cristoffel, ed., General Electric, Schenectady, NY, 31, 1979.

12. "The Analysis of Magnetohydrodynamics and Plasma Dynamics in Metals Processing Operations," C.W. Chang, J. Szekely, and T.W. Eagar, in *Proc. of the Sagamore Conf. on Recent Advances in Metals Processing*, 1, 1977.

13. "On the Micromechanics of Multifilamentary Superconducting Composites," S.F. Cogan, D.S. Holmes, I.M. Puffer, T.W. Eagar, and R.M. Rose, *IEEE Magnet., Mag-15(1),* 684, 1979.

14. "Superconducting Cu-Nb_3Sn Composites Produced by Cold Extrusion of Fine Powders," R. Flukiger, S. Foner, E.J. McNiff Jr., B.B. Schwartz, J. Adams, S. Forman, T.W. Eagar, and R.M. Rose, *IEEE Magnet., Mag-15(1),* 689, 1979.

15. "The Modelling of Gas Velocity Fields in Welding Arcs," C.W. Chang, T.W. Eagar and J. Szekely, *Arc Physics and Weld Pool Behavior*, The Welding Institute, Cambridge, Eng., 381, 1980.

16. "Ductility of Stabilized Ferritic Stainless Steel Welds," G.B. Hunter and T.W. Eagar, *Metall. Trans., 11A(2),* 213, 1980.

17. "The Effect of SAW Parameters on Weld Metal Chemistry," C.S. Chai and T.W. Eagar, *Welding J., 59(3),* 93s, 1980.

18. "Heat Generation Patterns and Temperature Profiles in Electroslag Welding," T. DebRoy, J. Szekely and T.W. Eagar, *Metall. Trans., 11B(12),* 593, 1980.

19. "Temperature Profiles, the Size of the Heat Affected Zone and Dilution in Electroslag Welding," T. DebRoy, J. Szekely and T.W. Eagar, *Mat. Sci. Eng., 56(2),* 181, 1982.

20. "Oxygen and Nitrogen Contamination During Submerged Arc Welding of Titanium," T.W. Eagar, in *Proc. of the Int. Conf. on Welding Research in the 1980's*, Osaka University, Osaka, Japan, 113, 1980.

21. "Slag-metal Equilibrium During Submerged Arc Welding," C.S. Chai and T.W. Eagar, *Metall. Trans., 12B(3),* 539, 1981.

22. "Automated Welding--Research Needs," T.W. Eagar, in *Modeling of Casting and Welding Processes*, AIME, Warrendale, PA, 487, 1981.

23. "Mathematical Modeling of the Temperature Profiles and Weld Dilution in Electroslag Welding of Steel Plates," T. DebRoy, J. Szekely and T.W. Eagar, in *Modeling of Casting and Welding Processes,* AIME, Warrendale, PA, 197, 1981.

24. "Physics of Arc Welding," T.W. Eagar, in *AIP/AISI Conf. on Applications of Physics in the Steel Industry*, AIP, New York, 272, 1981.

25. "Slag-Metal Reactions in Binary CaF2-Metal Oxide Welding Fluxes," C.S. Chai and T.W. Eagar, *Welding J., 61(7),* 229s, 1982.

26. "The Effect of Electrical Resistance on Nugget Formation During Spot Welding," J.G. Kaiser, G.J. Dunn and T.W. Eagar, *Welding J., 61(6),* 167s, 1982.

27. "High Cycle Fatigue of Weld Repaired Cast Ti-6Al-4V," G.B. Hunter, F.S. Hodi and T.W. Eagar, *Metall. Trans., 13A(9),* 1589, 1982.

28. "A Parametric Study of the Electroslag Welding Process," W.S. Ricci and T.W. Eagar, *Welding J., 61(12)*, 397s, 1982.

29. "Selective Evaporation of Metals From Weld Pools," A. Block-Bolten and T.W. Eagar, *Trends in Welding Research in the United States*, S.A. David, ed., ASM International, Metals Park, OH, 53, 1982.

30. "Laser Welding of Aluminum and Aluminum Alloys," C.A. Huntington and T.W. Eagar, *Welding J., 62(4),* 105, 1983.

31. "Measurements of the Force Exerted by a Welding Arc," T.D. Burleigh and T.W. Eagar, *Metall. Trans., 14A(6),* 1223, 1983.

32. "Changes of Weld Pool Shape by Variations in the Distribution of Heat Source in Arc Welding," N.S. Tsai and T.W. Eagar, in *Modelling of Casting and Welding Processes II*, J.A. Dantzig and J.T. Berry, eds., AIME, New York, 317, 1984.

33. "Comparison of Theoretically Predicted and Experimentally Determined Submerged Arc Weld Deposit Compositions," U. Mitra, R.D. Sutton, and T.W. Eagar, *Metall. Trans., 14B(9),* 510, 1983.

34. "Slag Metal Reactions During Submerged Arc Welding of Alloy Steels," U. Mitra and T.W. Eagar, *Metall. Trans., 15A(1),* 217, 1983.

35. "Convection in Arc Weld Pools," G.M. Oreper, T.W. Eagar, and J. Szekely, *Welding J., 62(11),* 307, 1983.

36. "Temperature Fields Produced by Travelling Distributed Heat Sources," N.S. Tsai and T.W. Eagar, *Welding J., 62(12),* 346s, 1983.

37. "Influence of Surface Depression and Convection on Arc Weld Pool Geometry," M.L. Lin and T.W. Eagar, in *Transport Phenomena in Material Processing,* PED, Vol. 10/HTD, 29, M.M. Chen, J. Mazumder, and C.L. Tucker III, eds., ASME, New York, 63, 1983.

38. "Metal Vaporization From Weld Pools," A. Block-Bolten and T.W. Eagar, *Metall. Trans., 15B(3),* 461, 1984.

39. "Prediction of Weld Metal Composition During Flux Shielded Welding," C.S. Chai and T.W. Eagar, *J. Mat. Energy Sys., 5(3),* 160, 1983.

40. "Selection of Processes for Welding Steel Rails," N.S. Tsai and T.W. Eagar, *Railroad Rail Welding*, Railway Systems and Management Assoc., Northfield, NJ, 421, 1985.

41. "Metallurgical and Process Variables Affecting The Resistance Spot Weldability of Galvanized Sheet Steels," S.A. Gedeon, D. Schrock, J. LaPointe, T.W. Eagar, SAE Technical Paper 840113, Warrendale, PA, 1984.

42. "Distribution of the Heat and Current Fluxes in Gas Tungsten Arcs," N.S. Tsai and T.W. Eagar, *Metall. Trans., 16B(4),* 841, 1985.

43. "The Size of the Sensitization Zone in 304 Stainless Steel Welds," N.S. Tsai and T.W. Eagar, *J. Mat. Energy Sys., 6(1),* 33, 1984.

44. "A Method of Filming Metal Transfer in Welding," C.D. Allemand, R. Schoeder, D.E. Ries and T.W. Eagar, *Welding J., 64(1),* 45, 1985.

45. "Influence of Arc Pressure on Weld Pool Geometry," M.L. Lin and T.W. Eagar, *Welding J., 64(6),* 163s, 1985.

46. "Slag Metal Reactions During Submerged Arc Welding of Steel," U. Mitra and T.W. Eagar, in *Proc. of Int. Conf. on Quality and Reliability in Welding*, 2, Chinese Mech. Eng. Soc., Harbin, PRC, B.24.1, 1984.

47. "An Improved Method of Multiwavelength Pyrometry," G.B. Hunter, C.D. Allemand, and T.W. Eagar, in *Thermosense VII, Proc. SPIE 520*, SPIE, Bellingham, WA, 40, 1985.

48. "Multiwavelength Pyrometry: An Improved Method," G.B. Hunter, C.D. Allemand, and T.W. Eagar, *Opt. Eng., 24(6),* 1081, 1985.

49. "Electron Beam and Laser Materials Processing in Japan," T.W. Eagar, *Welding J., 65(7),* 19, 1986.

50. "Pressures Produced by Gas Tungsten Arcs," M.L. Lin and T.W. Eagar, *Metall. Trans., 17B(9)*, 601, 1986.

51. "Resistance Spot Welding of Galvanized Steel: Part I, Materials Variations and Process Modifications," S.A. Gedeon and T.W. Eagar, *Metall. Trans., 17B(12),* 879, 1986.

52. "Resistance Spot Welding of Galvanized Steel: Part II, Mechanisms of Spot Weld Nugget Formation," S.A. Gedeon and T.W. Eagar, *Metall. Trans., 17B(12),* 887, 1986.

53. "Measurement of Dynamic Electrical and Mechanical Properties of Resistance Spot Welds," S.A. Gedeon, C.D. Sorensen, K.T. Ulrich, and T.W. Eagar, *Welding J., 66(12),* 387s, 1987.

54. "Metal Vapors in Gas Tungsten Arcs Part I: Spectroscopy and Monochromatic Photography," G.J. Dunn, C.D. Allemand, and T.W. Eagar, *Metall. Trans., 17A(10),* 1863, 1986.

55. "Metal Vapors in Gas Tungsten Arcs Part II: Theoretical Calculations of Transport Properties," G.J. Dunn and T.W. Eagar, *Metall. Trans., 17A(10),* 1871, 1986.

56. "Cinematography of Resistance Spot Welding of Galvanized Steel Sheet," C.T. Lane, C.D. Sorensen, G.B. Hunter, S.A. Gedeon, and T.W. Eagar, *Welding J., 66(9),* 260s, 1987.

57. "Prototype Device for Multiwavelength Pyrometry," G.B. Hunter, C.D. Allemand, and T.W. Eagar, *Opt. Eng., 25(11),* 1222, 1986.

58. "The Role of Transient Convection in the Melting and Solidification in Arc Weldpools," G.M. Oreper, J. Szekely and T.W. Eagar, *Metall. Trans., 17B(4),* 735, 1986.

59. "Effects of Surface Depression and Convection in GTA Welding," M.L. Lin and T.W. Eagar, *Advances in Welding Science & Technology*, S.A. David, ed., ASM International, Metals Park, OH, 47, 1986.

60. "Digital Signal Processing as a Diagnostic Tool for Gas Tungsten Arc Welding," C.D. Sorensen and T.W. Eagar, *Advances in Welding Science & Technology,* S.A. David, ed., ASM International, Metals Park, OH, 467, 1986.

61. "The Physics and Chemistry of Welding Processes," T.W. Eagar, *Advances in Welding Science & Technology*, S.A. David, ed., ASM International, Metals Park, OH, 291, 1986.

62. "Non-Uniform Current Distribution in Spot Welding," R. Bowers and T.W. Eagar, in *AWS Sheet Metal Welding Conference*, Detroit, MI, October, 1986.

63. "Visible Light Emissions During Gas Tungsten Arc Welding and its Applications to Weld Image Improvement," E. Kim, C. Allemand and T.W. Eagar, *Welding J., 66(12),* 369s, 1987.

64. "The Real Challenge in Materials Engineering," T.W. Eagar, *Technology Review*, *90* (2), 24, 1987 (also published in Japanese in Berufu, 43, 1987).

65. "Materials Science and Engineering in the US - Past, Present & Future," T.W. Eagar, *Bulletin of Japan Institute of Metals, 26(2),* 119, 1987 (Japanese).

66. "The Promise of New Materials - Real or Imaginary," T.W. Eagar, *J. of Metals*, 20, 1987.

67. "Transient Thermal Behavior in Resistance Spot Welding," E.Kim and T.W. Eagar, in *AWS Detroit Section Sheet Metal Welding Conference III*, Southfield, MI, 1988.

68. "Brazing Alloy Design for Metal/Ceramic Joints," R.R. Kapoor and T.W. Eagar, *Ceramic Engineering Science Proceedings, 10 (11-12)*, 1613, American Ceramic Society, Westerville, OH, 1989.

69. "Parametric Analysis of Resistance Spot Welding Lobe Curve," E.W. Kim and T. W. Eagar, *SAE 1988 Transactions, J. of Materials, 97(2)*, 1989, SAE paper 880278.

70. "Ceramic-Metal Bonding Research in Japan," T.W. Eagar, *Welding J., 66(11),* 35, 1987.

71. "Slag-Metal Reactions During Welding - Part I: Evaluation and Reassessment of Existing Theories," U. Mitra and T.W. Eagar, *Metall. Trans., 22B(2),* 65, 1991.

72. "Slag-Metal Reactions During Welding - Part II: Theory," U. Mitra and T.W. Eagar, *Metall. Trans., 22B(2),* 73, 1991.

73. "Slag-Metal Reactions During Welding - Part III: Experimental Verification of the Theory," U. Mitra and T.W. Eagar, *Metall. Trans., 22B(2),* 83, 1991.

74. "Modelling of Oscillations in Partially Penetrated Weld Pools," C.D. Sorensen and T.W. Eagar, *J. Dynamic Systems and Control, 112(9),* 469, 1990.

75. "Measurement of Oscillations in Partially Penetrated Weld Pools Through Spectral Analysis," C.D. Sorensen and T.W. Eagar, *J. Dynamic Systems and Control, 112(9),* 463, 1990.

76. Electrode Geometry in Resistance Spot Welding," R.J. Bowers, C.D. Sorensen and T.W. Eagar, *Welding J., 69(2),* 45s, 1990.

77. "Assessing Hydrogen Assisted Cracking Fracture Modes in High Strength Steel Weldments," S.A. Gedeon and T.W. Eagar, *Welding J., 69(6),* 213s, 1990.

78. "Wettability of Silver Based Reactive Metal Brazing Alloys on Alumina," R.R. Kapoor, E.S. Podszus and T.W. Eagar, *Scripta Metallurgica, 22*, 1277, August 1988.

79. "Oxidation Behavior of Silver and Copper Based Brazing Filler Metals for Silicon Nitride/Metal Joints," R.R. Kapoor and T.W. Eagar, *J. of the American Ceramic Society, 72(3)*, 448, 1989.

80. "Thermochemical Analysis of Hydrogen Absorption in Welding," S.A. Gedeon and T.W. Eagar, *Welding J., 69(7)*, 264-s, 1990.

81. "Analyses of Electrode Heat Transfer in Gas Metal Arc Welding," Y-S. Kim, D. McEligot, T.W. Eagar, *Welding J., 70(1)*, 20s, 1991.

82. "Enhancement of the Weldability in Resistance Welding," C.M. Calva and T.W. Eagar, in *AWS Detroit Section Sheet Metal Welding Conference IV*, Southfield, MI, 1990.

83. "Modelling of Metal Transfer in Gas Metal Arc Welding," Y-S. Kim and T.W. Eagar, in *Edison Welding Institute Annual North American Welding Research Seminar*, Columbus, OH, 1988.

84. "Modeling of Welding Distortion in Complex Structures," A. Moshaiov and T.W. Eagar, *Automation in the Design and Manufacture of Large Marine Systems*, C. Chryssostomidis, ed., Hemisphere Publishing Corporation, New York, 235, 1990.

85. "Measuring the Residual Ferrite Content of Rapidly Solidified Stainless Steel Alloys," J.W. Elmer and T.W. Eagar, *Welding J., 69(4)*, 141s, 1990.

86. "Measurement of Transient Temperature Response During Resistance Spot Welding," E.W. Kim and T.W. Eagar, *Welding J., 60(8)*, 303s, 1989.

87. "Microstructural Development During Solidification of Stainless Steel Alloys," J.W. Elmer, S.M. Allen and T.W. Eagar, *Metall. Trans., 20A(10)*, 2117, 1989.

88. "Technology Transfer and Cooperative Research in Japan," T.W. Eagar, *Welding J.*, 39, 1989.

89. "Fundamental Aspects of Electroslag Welding of Titanium Alloys," T.W. Eagar, J.H. Devletian, S.J. Chen, W.E. Wood and I.L. Caplan, *Recent Trends in Welding Science and Technology*, S.A. David and J. M. Vitek, eds., ASM International, Materials Park, OH, 419, 1990.

90. "The Influence of Cooling Rate on the Ferrite Content of Stainless Steel Alloys," J.W. Elmer, S.M. Allen and T.W. Eagar, *Recent Trends in Welding Science and Technology*, S.A. David and J. M. Vitek, eds., ASM International, Materials Park, OH, 165, 1990.

91. "Non-Contact True Temperature Measurements for Process Diagnostics," M.A. Khan, C.D. Allemand and T.W. Eagar, in *Proc. of Materials Research Society Symposium on Process Diagnostics: Materials, Combustion, Fusion, 117*, 119, 1988.

92. "Parametric Study of Heat Flow During Resistance Spot Welding," E.W. Kim and T.W. Eagar, *Modeling and Control of Casting and Welding Processes IV*, A.F. Giamei and G.J. Abbaschian, eds., TMS, Warrendale, PA, 1988.

93. "An Iconoclast's View of the Physics of Welding - Rethinking Old Ideas," T.W. Eagar, *Recent Trends in Welding Science and Technology*, S.A. David and J. M. Vitek, eds., ASM International, Materials Park, OH, 341, 1990.

94. "Temperature Distribution and Energy Balance in the Electrode During GMAW," Y-S. Kim and T.W. Eagar, *Recent Trends in Welding Science and Technology,* S.A. David and J.M. Vitek, eds., ASM International, Materials Park, OH, 13, 1990.

95. "The Transition from Shallow to Deep Penetration During Electron Beam Welding," J.Elmer, W.H. Giedt and T.W. Eagar, *Welding J., 69(5),* 167s, 1990.

96. "Characterization of Spatter in Low Current GMAW of Titanium Plate," S.T. Eickhoff and T.W. Eagar, *Welding J., 69(10),* 382s, 1990.

97. "Metal Transfer in Pulsed Current Gas Metal Arc Welding," Y-S. Kim and T.W. Eagar, *Welding J.,72 (7),* 279-s, 1993.

98. "Improving the Calculation of Interdiffusion Coefficients," R.R. Kapoor and T.W. Eagar, *Metall. Trans., 21A(12),* 3039, 1990.

99. "Effect of Second Phase Particles on Direct Brazing of Alumina Dispersion Hardened Copper," A.A. McFayden, R.R. Kapoor and T.W. Eagar, *Welding J., 69(11),* 399s, 1990.

100. "Tin-Based Reactive Solders for Ceramic/Metal Joints," R.R. Kapoor and T.W. Eagar, *Metall. Trans., 20B(12),* 919, 1989.

101. Applications and Trends of Electroslag Technology in Japan," T.W. Eagar. Welding Research Abroad 32(2):27 - 34, 1986.

102. "Non-Contact True Temperature Measurements in ihe Microgravity Environment" M. A. Khan, C. Allemand, and T. W. Eagar. Proceedings of the Second Noncontact Temperature Measurement Workshop, NASA Publication 89-16, R.R. Hale ed., NASA Jet Propulsion Laboratory, 98 - 109, 1989.

103. "The Physics of Welding Processes," T. W. Eagar. Proceedings of 5th JWS International Symposium on Advanced Technology in Welding, Materials Processing and Evaluation, Tokyo, 17 - 19 Apr. 1990. S. Machida, ed. Japan Welding Society, Tokyo, 11 - 16. 1990.

104. "Joining Technology," T. W. Eagar. Advanced Materials & Processes 137 (1): 65, 1990.

105. "The Steel Market Today and Tomorrow," T.W. Eagar, Modern Steel Construction, Oct, 40 - 41, 1991.

106. "Modeling Second-Phase Formation During Rapid Resolidification of Stainless Steel Alloys," J. W. Elmer, T. W. Eagar, and S. M. Allen. Stainless Steels '91, Chiba, Japan, 10 - 13 June 1991, Vol. 1, 669 - 676. 1991.

107. "Thermochemistry of Joining," T.W. Eagar, in Elliott Symposium on Chemical Process Metallurgy; Cambridge, Massachusetts; USA; 10 - 13 June 1990, P.J. Koros and G.R. St. Pierre, eds., Iron and Steel Society, Warrendale, PA, 197 - 208, 1991.

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