

Selected Publications:

Proceedings Edited

1. Superplasticity in Aerospace, H. C. Heikkenen and T. R. McNelley, eds., The Metallurgical Society of AIME, Warrendale, PA, 1988
2. Superplasticity in Aerospace II, T. R. McNelley and H. C. Heikkenen, eds., The Metallurgical Society of AIME, Warrendale, PA, 1990
3. Proceedings of ReX'96: Third International Conference on Recrystallization and Related Phenomena, T. R. McNelley, ed., MIAS, Monterey, California, 1997

Papers (most recent five years)

1. T. R. McNelley and M. E. McMahon, "An Investigation by Interactive EBSP Analysis of Processing and Superplasticity in an Aluminum-Magnesium Alloy", *Metallurgical and Materials Transactions A*, **27A**, 1996, pp. 2252-63
2. T. R. McNelley, M. E. McMahon and S. J. Hales, "An EBSP Investigation of Alternate Microstructures for Superplasticity in Aluminum-Magnesium Alloys", *Scripta Materialia*, **36**, 1997, pp. 369-74
3. T. R. McNelley and M. E. McMahon, "Microtexture and Grain Boundary Evolution During Microstructural Refinement Processes in Supral 2004", *Metallurgical and Materials Transactions A*, **28A**, 1997, pp. 1879 – 1887
4. R. D. Doherty, D. A. Hughes, F. J. Humphreys, J. J. Jonas, D. Juul Jensen, M. E. Kassner, W. E. King, T. R. McNelley, H. J. McQueen and A. D. Rollett, "Current Issues in Recrystallization: A Review", *Materials Science and Engineering*, **A238**, 1997, pp. 219 – 274
5. T. R. McNelley, M. E. McMahon and S. J. Hales, "Grain Boundary Development Following Processing, Annealing and Deformation of Superplastic Aluminum Alloys", in Proceedings of ReX'96: Third International Conference on Recrystallization and Related Phenomena (T. R. McNelley, ed.), MIAS, Monterey, California, 1997, p. 519 – 525
6. T. R. McNelley and M. E. McMahon, "Application of EBSP Methods to Analyze Continuous Grain Refinement Processes in Supral 2004", in Proceedings of ICSAM-97, International Conference on Superplasticity in Advanced Materials (A. H. Chokshi, ed.), Materials Science Forum, Vols. 243-245, Trans Tech Publications, Zurich, 1997, pp. 527 – 536
7. T. R. McNelley, M. A. Ballou and I. Dutta, "A Microstructural Investigation of Particle Redistribution during Thermomechanical Processing of a Cast 6061 Al - Al₂O₃ MMC", in Proceedings of the Symposium on Processing, Properties and Applications of Cast Metal Matrix Composites (P. K. Rohatgi, ed.), Warrendale, PA, 1997, pp. 143 – 153
8. M. T. Pérez-Prado, T. R. McNelley, O. A. Ruano and G. González-Doncel, "Microtexture Evolution During Annealing and Superplastic Deformation", *Metallurgical and Materials Transactions A*, **29A**, 1998, pp. 485-492
9. T. R. McNelley and M. E. McMahon, "Recrystallization and Superplasticity in Aluminum Alloys", in Superplasticity and Superplastic Forming 1998 (A. K. Ghosh and T. R. Bieler, eds.), TMS, Warrendale, PA, 1998, pp. 75-87
10. M. T. Pérez-Prado, M. E. McMahon and T. R. McNelley, "A Model for Texture-Related Grain Boundary Misorientations in a Superplastic Aluminum Alloy", in Modeling the Mechanical Response of Structural Materials (E. M. Taleff and R. K. Mahidhara, eds.), TMS, Warrendale, PA, 1998, pp. 181-190
11. I. Dutta, F. N. Quiles, T. R. McNelley and R. Nagarajan, "Optimization of the Strength-Fracture Toughness Relation in Particulate Reinforced Aluminum Composites via Control of Matrix Microstructure", *Metallurgical and Materials Transactions A*, **29A**, 1998, pp. 2433-46
12. T. R. McNelley, M. E. McMahon and M. T. Pérez-Prado, "Grain Boundary Evolution during Elevated Temperature Deformation of Two Superplastic Aluminum Alloys", in Hot Deformation of Aluminum Alloys, (T. R. Bieler, L. Lalli and S. T. MacEwen, eds.), TMS, Warrendale, PA, 1998, pp. 229-242
13. T. R. McNelley, M. E. McMahon and M. T. Pérez-Prado, "Grain Boundary Evolution and Continuous Recrystallization of a Superplastic Al-Cr-Zr Alloy", *Philosophical Transactions of the Royal Society of London*, **357**, 1999, pp. 1683-1705

14. O.A. Ruano, M. T. Pérez-Prado, G. González-Doncel and T. R. McNelley, "Texture and Deformation of Superplastic Aluminum Alloys", in Creep Behavior of Advanced Materials for the 21st Century (R. S. Mishra, A. K. Mukherjee and K. L. Murty, eds.), TMS, Warrendale, PA, 1999, pp. 333-348
15. M. T. Pérez-Prado and T. R. McNelley, "Dependence of the Grain Boundary Misorientation Distribution in Supral 2004 on the Plane of Observation", *Scripta Materialia*, **40**, no. 12, 1999, pp 1401-1406
16. S. D. Terhune, Z. Horita, M. Nemoto, Y. Li, T. G. Langdon and T. R. McNelley, "The Evolution of Microtexture and Grain Boundary Character during ECA Pressing of Pure Aluminum", in Proceedings of ReX=99, the Fourth International Conference on Recrystallization and Related Phenomena (T. Sakai and H. G. Suzuki, eds.), Japan Institute of Metals, Sendai, Japan, 1999, pp. 515-522
17. T. R. McNelley and M. T. Pérez-Prado, "Computer Simulation of Grain Boundary Character in a Superplastic Aluminum Alloy", in Proceedings of Advances in Superplasticity and Superplastic Forming (T. G. Langdon, ed.), Materials Research Society, Pittsburgh, PA, 1999
18. T.R. McNelley, "Application of EBSD Methods to Evaluate Grain Boundary Character of Fine-Grained Pure Aluminum", in Ultrafine Grained Materials (R.S. Mishra, S.L. Semiatin, C. Suryanarayana, N.N. Thadhani and T.C. Lowe, eds.), TMS, Warrendale, PA, 2000, pp. 185-194
19. T.R. McNelley, "Processing, Recrystallization and Superplasticity in Aluminum Alloys", in Deformation, Processing, and Properties of Structural Materials (E.M Taleff, C.K. Syn and D.R. Lesuer, eds.), TMS Warrendale, PA, 2000, pp. 339-352
20. M.T. Pérez-Prado, T.R. McNelley, G. González-Doncel and O.A. Ruano, "Texture, Grain Boundaries and Deformation of Superplastic Aluminum Alloys", in Proceedings of ICSAM 2000 (N. Chandra, ed.), Materials Science Forum, Trans Tech, Zurich, 2001, pp. 255-260
21. T.R. McNelley, "Chapter 22: Continuous Recrystallization and Grain Boundaries in a Superplastic Aluminum Alloy", in Electron Backscatter Diffraction, (A.J. Schwartz, et al., eds), Kluwer Academic/Plenum, New York, 2000, pp.277-290
22. M.T. Pérez-Prado, D.L. Swisher and T.R. McNelley, "Deformation Banding, Grain Boundaries and Continuous Recrystallization in a Superplastic Aluminum Alloy", in Proceedings of THERMEC 2000 (T. Chandra, K. Higashi, C. Suryanarayana and C. Tomé, eds.), Elsevier, London, 2001, Section G2.
23. M. Eddahbi, T.R. McNelley and O.A. Ruano, "The Evolution of Grain Boundary Character during Superplastic Deformation of an Al-6 Pct. Cu-0.4 Pct. Zr Alloy", *Metallurgical and Materials Transactions A*, **32A**, 2001, pp.1093-1102
24. M.T. Pérez-Prado, G. González-Doncel, O.A. Ruano and T.R. McNelley, "Texture Analysis of the Transition from Slip to Grain Boundary Sliding in a Discontinuously Recrystallized Superplastic Aluminum Alloy", *Acta Materialia*, **49**, 2001, pp. 2259-68
25. T.R. McNelley and D.L. Swisher, "Deformation Banding and Grain Boundaries in Aluminum and Aluminum Alloys", in Proceedings of Modeling the Performance of Engineering Structural Materials II (D.R. Lesuer and T.S. Srivatsan, eds.), TMS, Warrendale, PA, 2001, pp. 195-202
26. T.R. McNelley, D.L. Swisher and M.T. Pérez-Prado, "Deformation Bands and the Formation of Grain Boundaries in a Superplastic Aluminum Alloy", *Metallurgical and Materials Transactions A*, in press
27. T.R. McNelley, D.L. Swisher, Z. Horita and T.G. Langdon, "Influence of Processing Route on Microstructure and Grain Boundary Development during Equal-Channel Angular Pressing", in Proceedings of the Second International Symposium on Ultrafine Grained Materials (Y.T. Zhu, T.G. Langdon, R.S. Mishra, S.L. Semiatin, M.J. Saran and T.C. Lowe, eds.), TMS Warrendale, PA, in press