

INVITED TALKS GIVEN (1990–)

1. “Recent Applications of TEM to the Study of Interfaces,” August 1990, 12th International Congress on Electron Microscopy, Seattle, WA.
2. “Heterojunctions in Semiconductors,” 5 November 1990, Arizona State University, AZ.
3. “The Nucleation and Growth of Thin Oxide Films,” 7 November 1990, Sandia National Labs, Albuquerque, NM.
4. “New Approaches for Studying Interfaces in Oxides,” 4 December 1990, University of Minnesota, MN.
5. “The Nucleation and Growth of Thin Ceramic Films,” 8 April 1991, IBM, Almaden.
6. “Growth of $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Thin Films—Nucleation Heteroepitaxy and Interfaces Scanning Microscopy,” 6 May 1991, Scanning Microscopy, Baltimore, MD.
7. “Interfaces in Ceramic Thin Films,” 31 May 1991, Am. Ceram. Soc., Northern Ohio Section, 1991 Distinguished Speaker Award, Cleveland, OH.
8. “Interfaces in Ceramics,” November 1991, MRS Fall Meeting, Boston, MA.
9. “Interfaces Growth and Reactions in Ceramic Oxides,” November 1991, Departmental Seminar, Purdue University, Lafayette, IN.
10. “An Overview of the Study of Interfaces Using TEM,” February 1992, 3M Analytical Division, St. Paul, MN.
11. “High-Resolution Microscopy Center,” 31 March 1992, Minnesota Electron Microscopy Society, Minneapolis, MN.
12. “Thin Ceramic Films: Growth and Reactions,” March 1992, Texas Instruments, Dallas, TX.
13. “Growth of Thin Ceramic Films,” April 1992, 3M Special Symposium on Inorganic Materials, St. Paul, MN.
14. “Interfaces and the Growth of Thin Oxide Films,” 21 June 1992, International Conference on Intergranular and Interphase Boundaries, Thessaloniki, Greece.
15. “High-Resolution TEM of Ceramics,” August 1992, EMSA Symposium on High-Resolution TEM (Prof. David J. Smith, Organizer), Boston, MA.
16. “Interfaces in Ceramic Materials,” 1 May 1993, NIST Ceramics Group Seminar, Gaithersburg, MD.
17. “Interfaces in Ceramic Materials,” May 1993, Department of Materials Science, University of Wisconsin, Madison, WI.
18. “Interfaces in Ceramic Materials,” June 1993, Argonne National Labs, Argonne, IL.
19. “Structure of Grain Boundaries in Polycrystalline Semiconductors,” 8 September 1993, Int. Conf. on Polycrystalline Semiconductors, St Malo, France.
20. “High-Resolution TEM of Grain Boundaries,” 26 September 1993, 2nd Interamerica Congress on Electron Microscopy, Cancun, Mexico.
21. “Thin Ceramic Films: Growth and Reactions,” 1 November 1993, Departmental Colloquium, Department of Materials Science, University of Illinois, Urbana, IL.
22. “Interfaces in Ceramics,” 13 July 1994, Max Planck Institut for Mikrostrukturphysik, Halle, Germany.

23. "The Role of Defects During Growth and Reactions in Oxides," 27 October 1994, Lausanne, Switzerland.
25. "Thin Ceramic Films: Growth and Reactions," 30 October 1994, Jülich, Germany.
26. "Reacting NiO and Al₂O₃," 31 October 1994, Hannover, Germany.
27. "Growth and Reactions in Oxide Thin Films," 12 March 1995, University of California–Santa Barbara, Santa Barbara, CA.
28. "Reactions and Phase Transformations in Thin Oxide Films," 11 April 1995, Case Western Reserve University, Cleveland, OH.
29. "Understanding Surfaces, Interfaces, & Thin Films," 11 May 1996, Thirteenth Annual Spring Symposium of The New England Society for Electron Microscopy, Marine Biological Laboratories, Woods Hole, Massachusetts.
30. "AFM as a Complement to SEM and TEM in Materials Science," 23 May 1996, Microscopy Society of Northeastern Ohio Spring Symposium, Case Western Reserve University, Cleveland, OH.
31. "Solid State Reactions in Oxide Thin Films," 8 September 1996, Thirteenth International Symposium on the Reactivity of Solids, University of Hamburg, Hamburg, Germany.
32. "Interaction between Glass and Surfaces: As Combined AFM, SEM, TEM Study," 13 October 1996, MICROMAT '96, Fifth Brazilian Conference on Microscopy of Materials, Rio de Janeiro, Brazil.
33. "Solid-State Reactions in Oxides by AFM, SEM and TEM" 13 October 1996, MICROMAT '96, Fifth Brazilian Conference on Microscopy of Materials, Rio de Janeiro, Brazil.
34. "AFM as a Complement to SEM and TEM in Materials Science," 27 October 1996, 15th NCSEM Annual Symposium on Advances in Microscopy, Wilmington, North Carolina.
35. "TEM of Ceramics," 4 April 1997, NCEM New Building/Microscope Dedication Symposium, Lawrence Berkeley National Lab., Berkeley, CA.
36. "Oxide Thin Films: Substrates, Growth and Reactions," 18 April 1997, MS&E, North Carolina State University Department Seminar, Raleigh, NC.
37. "Phase Contrast in the TEM," 18 April 1997, MS&E, North Carolina State University Guest Lecture, Raleigh, NC..
38. "Oxide Thin Films: Substrates, Growth and Reactions," 28 April 1997, MS&E, Arizona State University Department Seminar, Tempe, AZ.
39. "The Structure of Close-Packed Surfaces," 15 May 1997, Dept. of Materials, Oxford University Department Seminar, Oxford, UK.
40. "Electron and Scanning Probe Microscopy of Glass/Ceramic Interfaces," 4 August 1997, Ceramics Gordon Research Conference on New Perspectives in Interface Science, Kimball Union, NH.
41. "Reactions and Phase Transformations in Thin Oxide Films," 23 June 1997, Department of Materials, University of Leeds, UK.
42. "Microscopy of Ceramic Surfaces" 4th Interamerican Electron Microscopy Conference, 23–26 September 1997, Guayaquil, Ecuador.
43. "Surfaces in Oxides", CMS Seminar Los Alamos National Labs, NM. 19 Nov. 1997
44. "Faceting of Oxide Surfaces and Thin-Film Growth", Fall MRS, invited talk 2 Dec 1997

45. "Microscopy of Ceramic Surfaces", Spring Meeting of the Alabama Microscopy and Imaging Society, Feb 1998
46. "Dislocations in Ceramic Oxides" MSA Microscopy and Microanalysis Meeting, Symposium on Ceramics and Minerals 12–16 July 1998, Atlanta
47. "A New Method to Study Solid-State Reactions in Oxides", Bayerisches Geoinstitut, Universitaet Bayreuth, Department Seminar, 27 April 1998
48. "Oxide Thin Films and Surfaces" University of Karlsruhe, Laboratorium für Elektronenmikroskopie, Department Seminar, 18 May 1998
49. "Oxide Thin Films and Reactions", University of Erlangen, Department Seminar, 5 June 1998
50. "A New Method to Study Solid-State Reactions", University of Köln, Department Seminar, 1 July 1998
51. "Reactions in and on Oxides", University of Hannover, Department Seminar, 7 July 1998
52. "The Future of Transmission Electron Microscopy", Carnegie Mellon University, 25 Sept., 1998
53. "Glass Films in and on Oxides", PPG, Pittsburgh, 5 Oct. 1998
54. "The Future of Transmission Electron Microscopy", Minnesota Microscopy Society Fall meeting, 15 Oct 1998
55. "Glass Films in and on Oxides", Fall Meeting, American Ceramic Society, 22 Oct. 1998
56. "Interfaces in Ceramics", Acta Materialia Topical Conference, La Jolla, Ca., 26 Oct. 1998
57. "Glass Films in and on Oxides", Lawrence Berkeley National Lab, 14 Dec. 1998
58. "Reactions in and on Oxide Thin Films", Cambridge Univ., UK, 19 March, 1999
59. "Ceramic Surfaces", Spring Meeting, American Ceramic Society, 27 April, 1999
60. "Faceting of Oxide Surfaces and Thin-Film Growth", Clemson University, 12 April, 1999
61. "Reactions in and on Oxide Thin Films", University of Wisconsin, 11 May 1999
62. "Archie Howie Symposium: Celebrations in Pioneering Electron Microscopy", Microscopy & Microanalysis 99 (Portland, OR) vol 5, suppl 2 658–659, Interfaces Symposium, Portland Oregon 3 August 1999
63. "Glass in and on Ceramic Oxides", Department of Energy, 28 September 1999
64. "Ceramic Surfaces, Interfaces and Wetting", University of Michigan, Ann Arbor, 15 October 1999
65. "SEM of Ceramic Surfaces", CIASEM, IntraAmerica Society for Electron Microscopy, Caracas, Venezuela, 26 October 1999
66. "Some Fundamental Aspects of Liquid-phase Sintering". Presented by Dr Ravishankar, Fall Meeting, American Ceramic Society, Seattle WA, 28 October, 1999
67. "Ceramic Surfaces, Interfaces and Wetting", Georgia Tech., Ann Arbor, 16 November 1999
68. "Ceramic Surfaces, Grain Boundaries and Crystalline Interphases", AIMS Annual Spring Meeting, Tucson AZ, 10 February 2000
69. "Glass in and on Ceramic Oxides", Japan FCC Int Workshop, Nagoya, 15–17 March 2000

70. "Glass in and on Ceramic Oxides", Virginia Tech. MSE Department Seminar, 6 April, 2000
71. "Mechanism of Glass-Crystal Boundary Migration in Ceramics" with N. Ravishankar, 2 May 2000, Annual meeting, American Ceramic Society, St Louis MI, 2000 (BS5-002-00)
72. "Discussion of the Choice of Length Scales in Grain Boundary Studies" Lead opinion at Solid State Studies in Ceramics: Gordon Research Conference, 9 August 2000
73. "Glass in and on Ceramic Oxides", Portland State University. MSE Department Seminar, 1 November, 2000
74. "Glass in and on Ceramic Oxides", Cal. Tech. MSE Department Seminar, 21 February, 2001
75. "Interfaces in Ceramics", IFW Dresden July, 2002
76. "Semiconductors", IFW Dresden July, 2002
77. "Semiconductors", U. of Jena, Germany, July 2002
78. "Surfaces and Grain Boundaries in Ceramics", At CIASEM-VI October 2001.
79. "Linking Materials Science & Chemical Engineering." Department of Materials Science, Cath. Univ., Rio de Janeiro, Oct. 2002.
80. "Diffraction Contrast in the TEM: A Series of Lectures." Department of Materials Science, Cath. Univ., Rio de Janeiro, Oct. 2002.
81. "Defects in Compound Semiconductors" Annual Meeting Brazilian Society of EM, Sao Paulo, Oct. 2001.
82. "Ceramic Interfaces" Annual Meeting Brazilian Society of EM, Sao Paulo, Oct. 2001.
83. "Model Studies of Glass in Alumina Grain Boundaries" Int. Symp. On Science & Technology of Alumina, Ringberg, Germany, March 17. 2002.
83. "Characterization of Composite Materials by Combined EM Techniques" Microscopy of Composites, Oxford, 26 March 2002
84. "Synthesis of Silicon Nanoparticles in Inductively Coupled Silane Plasmas" presented at the 2002 Gordon Conference on Plasma Processing Science (July 21-26)
85. "Interface structure and characterization and/or (de)wetting behavior" Surfaces and Interfaces Symposium at the 105th Annual American Ceramic Society Meeting April 27-30, 2003 in Nashville, TN
86. "Nanoscale Plasticity in Free Standing Spheres Less than 100 nm Diameter" to be presented at Plasticity 2003, July 7-11, 2003, Quebec City; to be published in Int. J. Plasticity
87. "Analysis of Thin Ceramic Films" to be presented at Scanning 2003
88. "Interfaces in Oxides" symposium L1 to be presented at the 204th Meeting of the Electrochemical Society, Orlando, Florida, October 12-17, 2003
89. "TEM Studies of Interfaces in III-V Compounds" symposium H1 to be presented at the 204th Meeting of the Electrochemical Society, Orlando, Florida, October 12-17, 2003
90. "Nanochemistry of Ceria Particles: Electron Energy-Loss Spectroscopic Study of the Surface of Ceria Abrasives " The 9th International Symposium on Advanced Physical Fields (APF-9): Characterization of Artificial Nanostructures and Nanomaterials, Tsukuba, Japan, March 2, 2004

- 91 “Liquids and Ceramic Interfaces” Department of Materials Science, University of Tokyo, Japan, March 5, 2004
- 92 “Nanoparticles” Materials for the Future Symposium celebrating 25 Years of the Materials Research Center, MRC, IISc, Bangalore, March 16, 2004
93. “Microscopy of Interfaces” Joint Metallurgy and Materials Research Center Dept Seminar, IISc, Bangalore, March 19, 2004
- 94 “Microscopy of Ceramics” Chalmers University of Technology, Göteborg University, Department of Experimental Physics, September 24, 2004
- 95 “The Behavior of Glass in Ceramic Materials” Brazilian MRS, Foz de Iguacu, October 11, 2004
- 96 “Some Thoughts on the Future of TEM” MPI for Biochemistry, Martinsreid, October 29, 2004
- 97 “Nanoparticles and Nanofilms”, Chalmers University of Technology, Göteborg University, Department of Mechanical Engineering, November 8, 2004
- 98 “From Physics to Ceramics” Guest Lecture, Introduction to Physics, Chalmers University of Technology, Göteborg University, Department of Experimental Physics, November 11, 2004
- 99 “Some Studies of Ceramic Nanoparticles” Department of Materials Science, University of Tokyo, Japan, January 21, 2005
- 100 “Insights into Nanoparticle Formation Mechanisms by Plasma Processing” International Symposium on Characterization of Real Materials and Real Processing TEM, U. of Nagoya, Japan, January 26, 2005
- 101 “Some Studies of Ceramic Nanoparticles and more” ICYS (International Center for Young Scientists, NIMS, Tsukuba, Japan, February 4, 2005
- 102 “Glass in and on Oxides” Electron Microscopy Group Department Seminar, University of Cambridge, UK, February 22, 2005

OTHER CONFERENCE ACTIVITIES (1990–)

1. Focused Session Organizer with Dr Paul Bristowe MIT “Computer Modeling and Experimental Study of Grain Boundaries,” Annual Meeting of the American Physical Society, Anaheim CA, March 1990.
2. Symposium Organizer and Session Chairman “Fine Structure of Defects,” ICEM 12, Seattle Washington, August 1990.
3. Symposium Organizer and Session Chairman “New Applications of HREM,” EMSA, San Jose, August 1991.
4. Session Chairman, International Conference on Intergranular and Interphase Boundaries, Thessaloniki Greece, 21–26 June 1992.
5. Symposium Organizer and Session Chairman “Microscopy of Interfaces,” 50th Annual Meeting EMSA, Boston, August 1992.
6. Organizing Committee and Session Chairman, Hirsch Symposium “Understanding Materials,” marking the retirement of Sir Peter Hirsch, September 1992.
7. Symposium Organizer “Microscopy of Ceramics,” 51st Annual Meeting MSA, Cincinnati, August 1993.

8. Session Chairman “Dislocations” Session, Int. Conf on Polycrystalline Semiconductors, St Malo France, 7 September 1993.
9. Session Chairman “Boundary Migration Transformation and Kinetics II” Session, MRS Fall Meeting, (Symp Cb Defect-Interface Interactions), Boston, 1993.
10. Session Chairman “Critical Issues in Ceramic Microstructures,” Microscopy & Microanalysis, Minneapolis, 11–15 August 1996.
11. Symposium Organizer, “Interfacial Engineering for Optimized Properties,” MRS Fall Meeting, Boston, 2–6 December 1996.
12. International Advisory Board for ISRS (International Symposium on reactivity of solids), 1996–2000.
13. Symposium Organizer, International Conference on Electron Microscopy, Cancun, August 1998.
14. Symposium Organizer, Microscopy & Microanalysis '99, Ceramics Symposium, Portland, OR, August 1999.
15. Symposium Organizer, Microscopy & Microanalysis '99, The Howie Symposium, Portland, OR, August 1999.
16. Symposium Organizer, “Interfacial Engineering for Optimized Properties II,” MRS Fall Meeting, Boston, 28 Nov–3 December 1999.
17. Symposium Organizer, Microscopy & Microanalysis 2000, Scanned-Probe Microscopy Symposium, Philadelphia, PA, August 2000.
18. Program Committee, International Union of Microbeam Analysis Societies Meeting, Kona, Hawaii, June 2000.
19. Symposium Organizer, “Structure-Property Relationships of Oxide Surfaces and Interfaces,” MRS Fall Meeting, Boston, 27 Nov–1 December 2000.
20. Symposium Organizer, “Structure-Property Relationships of Oxide Surfaces and Interfaces,” MRS Fall Meeting, Boston, 2–3 December 2002.
21. Symposium Organizer, “Interfacial Engineering for Optimized Properties III,” MRS Spring Meeting, San Francisco, 13–15 April 2004.

UNPUBLISHED CONFERENCE TALKS 1995–

Papers presented at the 1995 Annual Meeting of the American Ceramic Society

- Ramamurthy, S. and Carter, C.B., “Epitactic Crystallization Of Forsterite On MgO Substrates.” Interfaces Symposium. Session Topic: Structure, Chemistry and Characterization.
- Kotula, P. G. and Carter, C.B., “Thin-Film Reactions Between NiO And α -Al₂O₃, Substrates.” Interfaces Symposium. Session Topic: Structure, Chemistry and Characterization.
- Kotula, P. G. and Carter, C.B., “Transforming Transition Aluminas.” Substrates. Interfaces Symposium. Session Topic: Structure, Chemistry and Characterization.
- Mallamaci, M. P., Ramamurthy, S. Zagrebelny, A.V., Zimmerman, C.M., Sartain K. and Carter, C.B., “Glass Layers and Grain Boundaries.” Substrates. Interfaces Symposium. Session Topic: Structure, Chemistry and Characterization.

Papers presented at the 1995 Fall Meeting of the Materials Research Society

- Heffelfinger, J. R., Kotula, P. G. and Carter, C.B., 1995, MRS 1995 Fall Meeting, Boston "Ceramic Thin-Film Reactions."
- Johnson, M.T., Kotula, P. G. and Carter, C.B., 1995, MRS 1995 Fall Meeting, Boston "Solid-State Reactions with Spinel Forming Oxides."
- Johnson, M.T. and Carter, C.B., 1995, MRS 1995 Fall Meeting, Boston "In-situ Annealing of MgO."
- Zagrebelny, A.V., Ramamurthy, S. and Carter, C.B., 1995, MRS 1995 Fall Meeting, Boston "Study on Infiltration of Calcium-Alumino-Silicate Glass in Polycrystalline Alumina Ceramics."
- J. Bentley, M.T. Johnson and C.B. Carter, "In-situ annealing of MgO", Paper presented at the 1995 Fall Meeting of the Materials Research Society, Boston, MA, November 27–December 1

Papers presented at the 1995 Fall Meeting of the American Ceramic Society

- Carter, C.B., (**Invited**) "Interface Structure and Reactions in Ceramic-Based Materials." Part of a series of invited lectures.

Paper presented at the 1995 Pacific Coast Regional Meeting of the American Ceramic Society

- Carter, C.B., (**Invited**) "Interface Structure and Reactions in Ceramic-Based Materials." Part of a series of invited lectures.

Paper presented at the 1996 TMS Annual Meeting in Anaheim, CA

- Carter, C.B., Hwang, R.Q. and Hamilton, J.C., 1996 (5 Feb.) (**Invited**) EMPMD: Structure and Morphology of Epitaxial Thin Films, "The Structure of Close-Packed Surfaces."
- Kieschke, R.R., Heffelfinger, J.R. and Carter, C.B., 1996 (5 Feb.) (**Invited**) "Performance of Barrier Coatings for Al₂O₃ Fibers in Titanium Alloys."

Papers presented at the 1996 Annual Meeting of the American Ceramic Society in Indianapolis

- Carter, C.B., Heffelfinger, J.R., Johnson, M.T., Kotula, P.G. and Ramamurthy, S., (**Invited**) "Field-Emission SEM and its Ceramic Applications." Advanced Electron, Photon and Ion Beam Characterization Techniques Symposium: Electron Beam Techniques I. Advanced Electron, Photon and Ion Beam Techniques for Ceramic Characterization Symposium.
- Zagrebelny, A.V., Ramamurthy, S., Lilleodden, E.T., Nelson, J.C. and Carter, C.B., "Probing Interfaces between Glass and Alumina by Contact-Mechanics Techniques." Ceramic Joining Symposium
- Johnson, M.T., Schmalzried, H. and Carter, C.B., "Electric Field Effects In Ceramic Thin-Film Reactions." Basic Science Division: General Session Topics
- Heffelfinger, J.R. and Carter, C.B., "Ceramic Surfaces as Revealed by AFM." Advanced Electron, Photon and Ion Beam Characterization Techniques Symposium
- Kotula, P.G., Carter, C.B. and Schmalzried, H., "The Kinetics of Reactions between Thin Films of NiO and α -Al₂O₃." Basic Science Division Session: General Session, Diffusion and Kinetics
- Kotula, P.G., Carter, C.B. and Schmalzried, H., "The Microstructure and Orientation Relationships of NiO/NiAl₂O₄/Al₂O₃ Thin-Film Reaction Couples." Basic Science Division Session: General Session, Interfacial Characterization and Phenomena

Ramamurthy, S., Zagrebelny, A.V., Hebert, B.C. and Carter, C.B., "Interfaces between Silicates and Single-Crystals of α -Al₂O₃ And MgO." Session: Structure, Chemistry, Characterization: Symposium: Interfaces

Johnson, M.T., Bentley, J. and Carter, C.B., "In-Situ Annealing of MgO." Advanced Electron, Photon And Ion Beam Characterization Techniques Symposium: Electron Beam Techniques I

Papers presented at the **1996** Conference on Composites, Advanced Ceramics, Materials and Structures (Cocoa Beach; American Ceramic Society)

Heffelfinger, J.R., Carter, C.B. and Kieschke, R.R., (C-69-96F) (Bull. Am. Ceram. Soc. **74**(10), 111), "A Study of Y₂O₃ Coatings used in Metal-Matrix Composites."

Papers presented at the **1996** EUREM '96, XI European Congress on Microscopy, Dublin, Ireland 26-30 August 1996

Johnson, M.T., Heffelfinger, J.R., Kotula, P.G. and Carter, C.B., "Fundamental Processes in Thin-Film Reactions."

Presented at the Reactivity of Solids Meeting, Hamburg, Germany, September 8-12, **1996**

Johnson, M.T., Schmalzried, H. and Carter, C.B., "Heterogeneous Solid-State Reactions Between MgO (001) and Iron Oxide."

Johnson, M.T., Kotula, P.G. and Carter, C.B., "Solid-State Reactions in Oxide Thin-Films."

Papers presented at the **1996** Spring Materials Research Society Symposium in San Francisco

Lilleodden, E.T., Zagrebelny, A.V., Ramamurthy, S. and Carter, C.B., "Probing Silicate/Sapphire Interfaces using AFM and Nanoindentation."

Papers presented at the **1996** Fall Materials Research Society meeting in Boston (unpublished)

Kotula, P.G., Johnson, M.T., and Carter, C.B., "Nickel Ferrite Thin-Films Formed by Solid-State Reaction." Session: Thin Films and Surfaces: Structure and Morphology.

Johnson, M.T., Strojny, A., Gerberich, W.W. and Carter, C.B., "Mechanical Properties in the System Fe₂O₃/MgFe₂O₄/MgO." Session: Interfacial Engineering for Optimized Properties.

Carter, C.B., "Interfacial Engineering: An Overview." Session: Interfacial Engineers for Optimized Properties.

Heffelfinger, J.R. and Carter, C.B., "Faceting and Thin Film Growth on Ceramic Surfaces."

Papers presented at the **1997** Spring Materials Research Society meeting in San Francisco (unpublished)

Heffelfinger, J.R., Johnson, M.T. and Carter, C.B., "The Effect of Surface Structure on the Initial Stages of Thin-Film Growth." (Paper L11.8, 2 Apr. 97)

Papers presented at the **1997** Annual Meeting of the American Ceramic Society in Cincinnati

Zagrebelny, A.V. and Carter, C.B., 1997, (SXVI-035-97), (Bull. Am. Ceram. Soc. **76**, 238, "Effect Of Silicate Glass Composition On The Mechanical Properties Of Alumina-Silicate Glass Interfaces."

Johnson, M.T., Heffelfinger, J.R. and Carter, C.B., 1997, (BP-013-97), (Bull. Am. Ceram. Soc. **76**, 248, "Surface Structure Effects on Oxide Thin Films."

Blanford, C., Carter, C.B. and Stein, A., 1997, (SXXI-004-97), (Bull. Am. Ceram. Soc. **76**, 246, "Comparative Study of MCM-41 by TEM and EDS."

Papers presented at the **1997** Fall meeting of TMS, David A. Smith Symposium, Indianapolis, IN

M.T. Johnson, P.G. Kotula and C.B. Carter, "The Effect of Interfaces in Solid-State Reaction Between Oxide."

Paper presented at the **1997** Fall Materials Research Society meeting in Boston (unpublished)

Kotula, P.G. and Carter, C.B., 1998, Mater. Res. Soc. Proc. (Fall '97 meeting; Phase Transformations and Systems Driven Far from Equilibrium). "Interfacial-Reaction Control of Kinetics in Oxides."

Carter, C.B. and Heffelfinger, J.R., 1998, Mater. Res. Soc. Proc. (Fall '97 meeting; Evolution of Surface Morphology and Thin-Film Microstructure). "Faceting of Oxide Surfaces and Thin-Film Growth."

Papers presented at the **1998** Spring Materials Research Society meeting in San Francisco (unpublished)

Cohen, D., Farrer, J., Tanaka, M., Palmstrøm, C.J., and Carter, C.B., 1998 Mater. Res. Soc. Proc. (Spring '98 meeting). "Characterization of the Mn Surfactant Assisted Growth of GaAs on ErAs/GaAs"

Papers presented at the **1998** Annual ACerS, Cincinnati

Kotula, P.G. and Carter, C.B., 1998 (100th Annual Meeting & Exposition, Cincinnati, May 3–6, 1998) "Interfacial-Reaction Control of the Kinetics of Spinel Formation"

Carter, C.B. and Yanina, S.V., 1998 (100th Annual Meeting & Exposition, Cincinnati, May 3–6, 1998) "Surfaces of Spinels" (invited paper).

Papers presented at **1998** Fall Meeting ACerS, Irvine

Carter, C.B., Yanina, S.V. and Heffelfinger, J.R., 1999 (Pacific Coast Regional Meeting ACerS, Oct 21–24, 1998) "Faceting of Oxide Surfaces and its Influence on Thin Oxide Films"

Papers presented at the **1998** Fall Materials Research Society meeting in Boston (unpublished)

Cohen, D., Medlin, D.L. and Carter, C.B., 1999, Mater. Res. Soc. Proc. C (Fall '98 meeting, Boston, Surface and Interface Structure and Dynamics) "Internal Interfaces in Compound Semiconductor Thin Films"

Papers presented at the **1999** Annual ACerS, Indianapolis

Carter, C.B. 1999 "Ceramic Surfaces", Spring Meeting, American Ceramic Society, 27 April, 1999

Papers presented at **1999** Fall Meeting ACerS, Pacific Coast Regional Meeting Washington State

Yanina, S.V. and Carter, C.B., "Evaporation from Dislocation Sites on Spinel Surfaces".

Carter, C.B. and Ravishankar, N., "Some Fundamental Aspects of Liquid-Phase Sintering" (invited).

Papers presented at the **2000** Spring Materials Research Society meeting in San Francisco

Yanina, S.V. and Carter, C.B., Symp. M., "Interaction of Moving Steps and Crystal Defects on Spinel Surfaces".

Ravishankar, N. and Carter, C.B., Symp. M2.8., "Crystal–Liquid Boundaries in Liquid-Phase Sintered Ceramics"

Papers presented at the **2000** Annual meeting ACerS, St Louis

Carter, C.B. and Ravishankar, N., "Mechanism of Glass–Crystal Boundary Migration in Ceramics". (Invited)

Papers presented at the **2000** Fall Materials Research Society meeting in Boston

Blanford, C. F., Yan, H., Schroden, R. C, Al-Daous, M., Stein, A. and Carter, C.B., “Grain Growth in Three-Dimensionally Ordered Macroporous (3DOM) Materials as Observed in the TEM.”

Papers presented at the **2001** Annual meeting ACerS, Indianapolis

Farrer, J.K., Ravishankar, N., Michael, J. R. and Carter, C.B., “The Study of Solid State Reactions using EBSD”

Farrer, J.K., Ravishankar, N., Michael, J. R. and Carter, C.B., “Study of Interface Migration by EBSD”

Gilliss, S.R., Carter, C.B. and Schwabel, M.G., “Cerium Oxide Thin Films on Fused Silica Glass”

Papers presented at the **2001** Spring Materials Research Society meeting in San Francisco

Farrer, J.K., Ravishankar, N., Michael, J.R. and Carter, C.B., Symp. FF, “Study of Interface Migration in Ceramic Materials by EBSD”.

Papers presented at the **2001** Fall Materials Research Society meeting in Boston

Ravishankar, N. and Carter, C.B., 2001, Symp. P5.29 “Motion of Sapphire Surface Steps”

Ravishankar, N., Gilliss, S.R. and Carter, C.B., “Dewetting of Liquids on Reconstructed Ceramic Surfaces”

Perrey, C.R., Ravishankar, N. and Carter, C.B., “TEM Study of Grain Boundary Migration in Ceramic Bicrystals”

Perrey, C.R., Gilliss, S.R. and Carter, C.B., “TEM Investigation of Nanoparticles”

Munoz, N., Gilliss, S.R., Ravishankar, N. and Carter, C.B., “Grooving at Migrating Grain Boundaries in Alumina”

Papers presented at the **2002** Annual meeting ACerS, St Louis, MO

Munoz, N., Gilliss, S.R., Ravishankar, N. and Carter, C.B., “Investigation of Grain Boundary Grooving using AFM” (2002 Best Undergraduate Poster Award)

Perrey, C.R., Carter, C.B., Kotula, P.G. and Michael J.R., “TEM Investigation of Nanoparticles”

Perrey, C.R., Ravishankar, N. and Carter, C.B., “TEM Study of Grain Boundary Migration in Ceramic Bicrystals”

Gilliss, S.R. Ravishankar, N. and Carter, C.B., “Dewetting on Ceramic Surfaces” (2002 Snow Award)

Papers presented at the **55th** Ann. Gaseous Electronics Conf, Minneapolis, MN Oct. 2002

Gidwani, A., Girshick, S., Heberlein, J., McMurry, P., Gerberich, W.W., Carter, C.B., Nelson, B., Mukherjee, R., Renault, T., Mook, W., Perrey, C.R. and Wang, T., 2002, Bull. Am. Phys. Soc., **47**(7), 60, “Hypersonic Plasma Particle Deposition of Nanostructured Films and Patterns”.

Papers presented at the **2002** Fall Materials Research Society meeting in Boston

Perrey, C.R., Mook, W.M., Carter, C.B. and Gerberich, W.W. “**Characterization of Mechanical Deformation of Nanoscale Volumes**”

Perrey, C.R., Thompson, R., Carter, C.B., Gidwani, A., Mukherjee, R., Renault, T., McMurry, P.H., Heberlein, J.V.R. and Girshick, S.L., “**Characterization of nanoparticle films and structures produced by hypersonic plasma particle deposition**”

Bapat, A., Kortshagen, U., Campbell, S.A., Perry, C.R. and Carter, C.B., "Synthesis of Crystalline Silicon Nanoparticles in Low-Pressure Inductive Plasmas"

Papers presented at the **2003** Annual meeting ACerS, Nashville TN

Gilliss, S.R. and Carter, C.B., Characterization of Grain Boundary Migration in the Presence of a Glassy Phase for Ceramic Bicrystals

Carter, C.B., The Past and the Future of Ceramic Interface Studies (Invited)

Carter, C.B., Structures and Interfaces: Characterization of Interface Structure and Properties (Invited)

Munoz, N., Gilliss, S.R. and Carter, C.B., Analysis of the Geometry and Evolution of Surface Grooves at Migrating Boundaries in Alumina

Perrey, C.R. and Carter, C.B., Analysis of Nanoparticle Structure and Surfaces

Papers presented at the **2003** Spring Materials Research Society meeting in San Francisco

Thompson, S, Belich, T.J., Perrey, C.R, Kortshagen, U., Carter, C.B. and Kakalios, J., "Experimental Studies of Medium Range Order in Nanostructured Hydrogenated Silicon Thin Films."

Invited papers presented at the **2003** Spring TMS meeting in San Diego: The Terry Mitchell Symp.

Perrey, C.R. and Carter, C.B., "Nanoparticles and Nanofilms." TMS Mitchell Symposium

Papers presented at the **2003** NanoFIB meeting in Cambridge UK. April 4, 2003.

Perrey, C.R., Carter, C.B., Michael, J., Kotula, P., Stach, E. and Radmilovic, V., "Using the FIB to characterize nanoparticle materials."

Invited paper presented at the **2003** IUMRS meeting in Singapore (meeting cancelled: SARS)

Gilliss, S.R. Ravishankar, and Carter, C.B., "Interfaces between glasses and Crystalline Oxides."

Invited paper presented at the **2003** Spring Scanning meeting in San Diego

Gilliss, S.R. Ravishankar, and Carter, C.B., "Analysis Of Thin Ceramic Films."

Papers presented at the **2003** conference of the American Association for Aerosol Research (AAAR)

Wang, X., Renault, T., Perrey, C.R., Mukherjee, R., Hafiz, J., Gidwani, A., Carter, C.B., Heberlein, J., Girshick, S. and McMurry, P.H., "In-situ Nanoparticle Diagnostics in a Thermal Plasma Process".

Papers presented at the **16th** International Symposium on Plasma Chemistry Taormina, Italy. June29-July4, **2003**

Hafiz, J., Wang, X., Mukherjee, R., Gidwani, A., Renault, T., Perrey, C.R., Mook, W., McMurry, P., Heberlein, J., Carter, C.B., Gerberich, W.W. and Girshick, S., "Thermal Plasma Synthesis and Characterization of Si/Ti/N Nanoparticle Films".

Bapat, A., Kortshagen, U., Campbell, S., Perrey, C.R. and Carter, C.B., "Low-Temperature Plasma Synthesis of Single-Crystal Silicon Nanoparticles".

Thompson, S., Perrey, C.R., Belich, T.J., Kortshagen, U., Carter, C.B., and Kakalios, J., "Hydrogenated Silicon Thin Films with Nanocrystalline Inclusions Deposited in Low-Pressure SiH₄:He:H₂-Plasmas".

Papers presented at the **204th** Meeting of the Electrochemical Society, Orlando, Florida, Oct. 12–17 **2003**

Carter, C.B., “Interfaces in Oxides” Symp. L1

Carter, C.B., “TEM Studies of Interfaces in III-V Compounds” Symp. H1

Papers presented at the **56th** Ann. Gaseous Electronics Conf., San Francisco Oct. 21–24 **2003**

X. Wang, J. Hafiz, R. Mukherjee, A. Gidwani, T. Renault, J. Heberlein, P., McMurry, S. Girshick, C. Perrey, W. Mook, C. B. Carter and W. Gerberich, “Nanoparticle Film Deposition Using a Hypersonically Expanded Plasma,”

Papers presented at ULIS 2004 (ULTimate Integration of Silicon), March 11-12, **2004** Leuven, Belgium

Dong, Y., Bapat, A., Shen, Z., Perrey, C. R., Carter, C. B., Kortshagen, U. and Campbell, S. A. “Single Crystal Nanoparticles for 3D Integrated Systems”

Papers presented at the **2004** Spring Materials Research Society meeting April 12–16, **2004** in San Francisco

Shetty, S., Shenoy, V.B, Carter, C, B and Ravishankar, N., 2004, “Nanopatterning on Reconstructed Ceramic Surfaces” Symp N

Riesterer, J.L., Gilliss, S.R. Ravishankar, N. and Carter, C.B., 2004, “Boundary Migration in Alumina Bicrystals” Symp N

Perrey, C.R. Thompson, S.,S. Lentzen, M., Kortshagen, U. and Carter, C.B., 2004, “Understanding the Structure of Si Nanoclusters in a/nc-Si:H Films using Spherical Aberration-Corrected Transmission Electron Microscopy”. Symp A

Perrey, C.R. Deneen, J.M. and Carter, C.B., 2004, “The Effects of Processing on the Morphology of Nanoparticles”. Symp M

Bapat, A., Perrey, C.R. Kortshagen, U., Carter, C.B., and Campbell, S.A. 2004, “Silicon Nanoparticle Synthesis using Constricted Mode Capacitive Silane Plasma”.

Gilliss, S.R., Ravishankar, N. and Carter, C.B., 2004, “Dewetting on the Surface of Rutile” Symp. N: Interfacial Engineering for Optimized Properties III

Gilliss, S.R., Bentley, J. and Carter, C.B., 2004, “Nanochemistry of Ceria Abrasive Particles” Symp. M: Nanoparticles and Nanowire Building Blocks—Synthesis, Processing, Characterization, and Theory/

Deb, B., Altay, A., Gilliss, S. R. and Carter, C.B., 2004 “A Systematic Study of Monitoring the Changes on the Surfaces and Interfaces in α -Alumina after Chemical and Thermal Treatments” Symp.

Papers presented at the **106th** Annual meeting ACerS, April 18–21, **2004** Indianapolis, IN

Altay, A., Gülgün, M.A. and Carter, C.B., “Thin-Film Reactions of CaAl_4O_7 and $\text{CaAl}_{12}\text{O}_{19}$ with $\alpha\text{-Al}_2\text{O}_3$ ”.

Altay, A., Deb, B., Gilliss, S.R., and Carter, C.B., “Selective Dissolution of Surfaces in α -Alumina”

Papers presented at the IGERT-SFB poster show, June 24–25, **2004** in Duisburg, Germany

Thompson, S.S., Perrey, C.R., Deneen, J.M., Carter, C.B. and Kortshagen, U.R., “Plasma-Synthesis of Mixed-Phase Si Films: Nanocrystalline Si Inclusions in an Amorphous Si Matrix”

Paper presented at the **107th** Annual meeting ACerS, April 10–13, **2005** Baltimore, MD

Altay, A., Deb, B. Gilliss, S. R. and Carter, C.B. 2004, "Selective Dissolution of Surfaces in Alpha-Alumina".

Papers to be presented at the Spring meeting APS, April 16–19, 2005 Tampa, FL

Leighton, C., Wu, J., Lynn, J., Glinka, C., Burley, J., Zheng, H., Mitchell, J., Moulton, W., Hoch, M., Kuhns, P., Reyes, A., Perrey, C.R., Munoz, N.E., Thompson, R. and Carter, C.B., "Doped Cobaltites: Phase Separation, Intergranular Giant Magnetoresistance, and Glassy Transport Phenomena"

Papers to be presented at the AVS 52nd International Symposium, October 30–November 4, 2005, Boston MA

Bartelt, N.C., Ling, W.L., McCarty, K.F. and Carter, C.B., 2005, "Twin Boundaries can be Moved by Step Edges During Film Growth".

McCarty, K.F., Bartelt, N.C., Pierce, J.P. and Carter, C.B., 2005, "Thermodynamic Stability of Alumina Films on NiAl(110) and the Dynamics of their Extended Defects".

Papers to be presented at the 2005 Fall Materials Research Society meeting in Boston

Carter, C.B., Gilliss, S.R. and Riesterer, J.L., 2005, "Glass in Crystalline Ceramics" MRS Fall meeting, Boston Symposium:KK: Solid-Solid Interfaces from Observation to Modeling ID:177930

Papers to be presented at the 2006 Spring TMS Meeting in San Antonio

Carter, C.B., Riesterer, J.L., Altay, A., Farrer, J.K. and Ravishankar, N., 2005, "Thin Films in Ceramic Grain Boundaries" submitted to TMS Brandon Symposium March 12–16 2006, San Antonio, TX, USA