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Thesis: "Creep Cavitation in Type 304 Stainless Steel" (1980)
M.S. Physics, University of Pennsylvania, Philadelphia, PA
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Ross Coffin Purdy Award, American Ceramic Society (1994)
Ranked among Most Cited Materials Scientists in 1990-1994 (24th in total
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Humboldt Research Award for Senior U.S. Scientist-Humboldtpreis (1997)
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Listed in ISI Most-Cited-Authors-in-Materials-Research since inception (2003)
Academician of World Academy of Ceramics (2004)
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I-Wei Chen is Deputy Director of Penn's Materials Research Center (LRSM) since 2009. He is best known for his work in ceramics with about 90 publications in the Journal of the American Ceramic Society. His thesis papers on stainless steel under Professor A.S. Argon are now textbook references for creep and fracture. In 1980's he reported a series of *in-situ* HREM small particle experiments on zirconia, which established the mechanisms of nucleation and growth for martensitic transformations. He then introduced high pressure testing techniques to studies of zirconia ceramics; such work has constituted much of the basic understanding of transformation plasticity in ceramics. His research ranged from processing (powders, colloids, thin films, sintering, forming), structure (EXAFS, metal insulator transition), microstructure (grain growth, alloy design), properties (fracture, fatigue, plasticity, ferroelectrics, magnetoresistance, thermoelectrics) and new material design (superplastic ceramics, α -sialons, biomedical nanoparticles.) His current research in nanotechnology emphasizes thin film devices, magnetic resonance imaging and drug delivery. His 180 some journal papers have been cited over 7,000 times with an *h*-index of 50.

Patents

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- V. P. Shastri, I-W. Chen, H. Choi and A. M. Lipski, "Functionalized Surface Coatings for Biomedical Uses," U.S. Patent application (2003).
- V. P. Shastri, I-W. Chen and William Znidarsic, "Biomimetic Hierarchies using Functionalized Nanoparticles as Building Blocks," U.S. Patent application (2004).
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Book Chapters

I-W. Chen, Book chapter, "Superplastic Ceramics," Encyclopedia of Advanced Materials. Eds. D. Bloor, R. Brook, M. Flemings, and S. Mahajan. Elsevier Science, 1993, pp. 2715-17.

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Journal Papers

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2. I-W. Chen and A.S. Argon, "Steady State Power Law Creep in Heterogeneous Alloy with Coarse Microstructures," *Acta Metall.*, **27**, 785-91 (1979).
3. M.P. Cleary, I-W. Chen and S-M. Lee, "Self-consistent Techniques for Heterogeneous Media," *J. Eng. Mech., ASCE*, **106**, 861-87 (1980).
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 27. I-W. Chen and S-Y. Liu, "Constitutive Relations for Mechanical Fatigue in Zirconia Ceramics," Fatigue of Advanced Materials, Eds. R.O. Ritchie, B.N. Cox and R.H. Dauskardt, *Materials & Component Engineering*, Publications LTD., Birmingham, UK, 153-68 (1991).
 28. I-W. Chen, "Solute Drag on Grain Boundary in Ionic Solids—The Space Charge Effect," in Design and Control of Grain Boundary in Ceramics, Eds. R. Ishizaki and K. Nihara, Elsevier Publications, 254-67 (1992).
 29. I-W. Chen and S-L. Hwang, "Superplastic SiAlON—A Bird's Eye View of Silicon Nitride Ceramics," in Silicon Nitride Ceramics, Scientific and Technological Advances, Eds. I-W. Chen, P.F. Becher, M. Mitomo, G. Petzow, and T-S. Yen, *Materials Research Society Symposium Proceeding Series*, **287**, 209-22, 1993.
 30. P.F. Becher, H.T. Lin, S-L. Hwang, M. Hoffman, and I-W. Chen, "The Influence of Microstructure on the Mechanical Behavior of Silicon Nitride Ceramics," in Silicon Nitride Ceramics, Scientific and Technological Advances, Eds. I-W. Chen, P.F. Becher, M. Mitomo, G. Petzow, and T-S. Yen, *Materials Research Society Symposium Proceeding Series*, **287**, 147-58, 1993.
 31. I-W. Chen, P. Li, and J.E. Penner-Hahn, "Atomic Structure Studies of Zirconia Solid Solutions by EXAFS," pp. 27-38 in Applications of Synchrotron Radiation Techniques to Materials Science, Vol. 307. Edited by D. Perry, N.D. Shinn, R.L. Stockbauer, K.L. D'Amico and L.J. Terminello. *Materials Research Society Symposium Proceedings Series*, 1993.
 32. S.Y. Chen, X. F. Du, and I-W. Chen, "Crystallization and Texture of Bi-Containing Layered Perovskite Thin Films," Ferroelectric Thin Films IV, Eds. S. B. Desu, R. Ramesh, B. Tuttle and T. Shiosaki, *Materials Research Society Symposium Proceedings*, Vol. 361, pp. 15-20, 1995.

33. I-W. Chen, S.Y. Liu, D.S. Jacobs, and M. Engineer, "Fracture Mechanics of Fatigue of Structural Ceramics," pp. 1-13 in Fracture Mechanics of Ceramics, Vol. 12, Eds. R.C. Bradt, D.P.H. Hasselman, D. Munz, M. Sakai, and V. Ya, Sheuchenko, 1996.
34. X-F. Du and I-W. Chen, "Ferroelectric Thin Films of Bismuth-containing Layered Perovskites," Ferroelectric Thin Films VI, Eds. R. E. Treece, R. E. Jones, C.M. Foster, S. B. Desu and I. K. Yoo, Materials Research Society Symposium Proceedings, Vol. 493, pp. 261-66, 1998.
35. X-F. Du, and I-W. Chen, "Frequency Spectra of PZT and Other Ferroelectric Thin Films," Ferroelectric Thin Films IV, Eds. Eds. R. E. Treece, R. E. Jones, C.M. Foster, S. B. Desu and I. K. Yoo, Materials Research Society Symposium Proceedings, Vol. 493, pp. 311-16, 1998.
36. E. J. Winn, I-W. Chen, "Deformation Processing and Properties of Y_2O_3 -doped ZrO_2 /Porous Al_2O_3 Composites," Key. Eng. Mat. 175-1, 163-172 (2000).
37. I-W. Chen, R. A. Shuba, M. Y. Zenotchkin, "Development of Tough α -SiAlON," Key Eng. Mat. 237, 65-78 (2003).
38. Glickson JD, Lund-Katz S, Zhou R, Choi H, Chen I-W, Li H, Corbin I, Chance B, & Zheng G (2007). Lipoprotein nanoplatform for targeted delivery of diagnostic and therapeutic agents. in Proc. International Society of Oxygen Transport in Tissues. Uppsala, Sweden. ed. Lis P. (Kluwer Academic/Plenum Pub, Amsterdam).

Invited Talks (A Partial List)

1. "Creep Cavitation — An Overview," at National Bureau of Standards, Washington D.C., January 1981.
2. "Cavity Growth on Grain Boundaries," at Berkeley Nuclear Laboratories, Electric Generating Board, Berkeley, Gloucestershire, U.K., April 1981.
3. "Elastic and Magnetic Anisotropy of Point Defects—Their Role in Dimensional Instability of Irradiated Metals," at Kernforschungsanlage, Institut für Festkörperforschung, Jülich, Federal Republic of Germany, July 1983.
4. "Superplasticity in Two Phase Alloys," at Symposium on Large Strain Deformation, TMS-AIME, Philadelphia, PA, October 1983.
5. "Constitutive Equations of Superplastic Materials," at International Nickel Company, Sterling Forest, NY, December 1983.
6. "Martensitic Nucleation in Metal Ceramic Composites," at IBM Watson Research Center, Yorktown Heights, NY, February 1984.
7. "Martensitic Transformations in Ceramics," at Los Alamos National Laboratory, Los Alamos, NM, May 1984.
8. "Creep Deformation of Multiphase Ceramics," at Gordon Research Conference on Solid State Studies in Ceramics, New London, NH, July 1984.
9. "Mechanisms of Transformation and Transformation Plasticity in ZrO_2 ," at Zirconia Ceramics 5, Tokyo Institute of Technology, Yokohama, Japan, December 1984.
10. "Transformation Plasticity in Brittle Solids," at Division of Applied Sciences, Harvard University, MA, April 1985.
11. "Martensitic Nucleation in ZrO_2 ," Second International Workshop on Transformation Toughening, Lorne, Australia, April 1985.
12. "Quasi-static Intergranular Fracture at 0.5 T_m —Mechanisms of Stress Relief Cracking in Low Alloy Steels," at Monash University, Australia, April 1985.
13. "Superplastic Flow of Two-Phase Alloys," at International Conference on Superplasticity, Grenoble, France, September 1985.
14. "Implications of Transformation Plasticity on Fracture Control of ZrO_2 Ceramics," at Zirconia Ceramics 7, Tokyo Institute of Technology, Yokohama, Japan, November 1985.
15. "Displacive Transformation in ZrO_2 ," at Ceramic Science Symposium, Basic Science Section of The American Ceramic Society, Baltimore, MD, November 1985.
16. "Transformation, Transformation Plasticity and Transformation Toughening in ZrO_2 Containing Ceramics," at University of Pennsylvania, PA, November 1985.
17. "Transformation, Transformation Plasticity and Transformation Toughening in ZrO_2 Containing Ceramics," at Ohio State University, OH, January 1986.
18. "A Comparative Study of Transformation Plasticity and Toughening in Mg-PSZ and Ce-TZP," at Advanced Ceramics 2, Tokyo Institute of Technology, Yokohama, Japan, September 1986.

19. "Interface Effects on the Deformation and Failure of High Temperature Alloys," at TMS Southeast Regional Meeting, Oak Ridge, TN, September 1986.
20. "Ceramic Steels — The Zirconia Containing Ceramics," at Michigan Chapter of TMS, Southfield, MI, September 1986.
21. "Transformation, Transformation Plasticity and Transformation Toughening of Zirconia Containing Ceramics," at Symposium on Toughening via Stress-induced Transformation, TMS Fall Meeting, Orlando, FL, October 1986.
22. "Transformation, Transformation Plasticity and Transformation Toughening of Zirconia Containing Ceramics," at Materials Science Division, Argonne National Laboratory, Argonne, IL, November 1986.
23. "Transformation Plasticity and Transformation Toughening in PSZ and TZP," at Symposium on Advanced Structural Ceramics, Materials Research Society, Fall Meeting, Boston, MA, December 1986.
24. "Transformation Plasticity and Transformation Toughening," at Solid Mechanics Division, Brown University, Providence, RI, December 1986.
25. "A Perspective of Zirconia Research," at Michigan Section of The American Ceramic Society, Detroit, MI, December 1986.
26. "Transformation and Transformation Plasticity," at Michigan State University, East Lansing, MI, February 1987.
27. "Transformation, Transformation Plasticity and Transformation Toughening of Zirconia Ceramics," at McMaster University, Canada, March 1987.
28. "Transformation and Transformation Toughening of Zirconia Ceramics," at Allied-Signal, Morristown, NJ, April 1987.
29. "A Statistical Theory of Grain Growth," at International Symposium on Progress in Microstructure-1987, Aachen, Federal Republic of Germany, May 1987.
30. "Sintering and Grain Growth of Tetragonal and Cubic Zirconia," at Sintering '87, Tokyo, Japan, November 1987.
31. "Texture Development in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ by Hot Extrusion and Hot Pressing," at Sintering '87, Tokyo, Japan, November 1987.
32. "Phases, Microstructures and Phase Transformations in Zirconia," at Larry Van Vlack Symposium, 15th Automotive Materials Conference, Ann Arbor, MI, April 1988.
33. "Advanced Concepts in Toughening of Ceramics," at Workshop on Structural Ceramics, Weitenburg, Federal Republic of Germany, April 1988.
34. "Crystal Chemistry and Phase Stability of High T_c Superconductors," at the 89th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1988.
35. "Superplasticity of Mullite Zirconia Composites," at Materials Research Society International Symposium on Superplastic Forming, Tokyo, Japan, May-June 1988.
36. "Transformation Toughening," at Gordon Conferences on Solid State Studies of Ceramics, Meriden College, NH, August 1988.

37. "Superplastic Forming of Ceramics," at US-Japan Workshop on the Processing of Advanced Ceramics, Seattle, WA, August 1988.
38. "Ceramic Research at The University of Michigan," at Detroit Section of The American Ceramic Society, Detroit, MI, November 1988.
39. "Recent Progress in Zirconia as a Structural Ceramic," at Department of Materials Science and Engineering, Northwestern University, Evanston, IL, February 1989.
40. "Structural Ceramic Research at The University of Michigan," at SAMPE Michigan Tri-City Chapter, Midland, MI, February 1989.
41. "Recent Progress in Zirconia Research," at Department of Materials Science and Engineering, University of Utah, Salt Lake City, UT, July 1989.
42. "Superplastic Forming of Ceramics," at Gordon Conference on Solid State Studies of Ceramics, Colby Sawyer College, NH, August 1989.
43. "Superplasticity of Fine Grained Zirconia Polycrystals," at the Fourth International Conference on the Science and Technology of Zirconia, Anaheim, CA, October 1989.
44. "Transformation Toughening," at ASME Winter Meeting, San Francisco, CA, December 1989.
45. "Superplastic Forming of Fine-Grained Ceramics," at Department of Materials Science and Engineering, University of Washington, Seattle, WA, January 1990.
46. "Superplastic Forming of Fine-Grained Ceramics," at the Third International Conference on Ceramic Powder Processing Science, San Diego, CA, February 1990.
47. "Superplastic Ceramics," at Albrecht-Rabenau Symposium on Contemporary Issues in Ceramic Science, Schloss Ringberg, Tegernsee, Germany, July 1990.
48. "Superplastic Forming of Ceramic Composites," at Symposium on Composites, Orlando, FL, November 1990.
49. "Solute Drag and Grain Growth," at W.E. Heraeu's Seminar on Modeling of Sintering Processes, Bad Honnef, Germany, November 1990.
50. "Constitutive Equations of Cyclic Fatigue of Ceramics," at the Engineering Foundation Conference on Fatigue of Advanced Materials, Santa Barbara, CA, January 1991.
51. "Microstructural Design of Superplastic Ceramics," at the International Conference on Superplasticity of Advanced Materials, Osaka, Japan, June 1991.
52. "X-ray Absorption Studies of ZrO_2 and CeO_2 ," at the Atomic Structure, Bonding and Properties of Ceramics Meeting, Basic Science Division, The American Ceramic Society, Marco Island, FL, October 1991.
53. "Deformation Processing of Ceramics," at Purdue University, West Lafayette, IN, November 1991.
54. "Tailoring of Grain Boundary and Bulk Properties by Grain Boundary Alloying," at Japan Fine Ceramic Center Workshop on Materials Processing and Design Through Better Control of Grain Boundaries," Nagoya, Japan, March 1992.

55. "Fatigue of Tough Ceramics," in 15th Michigan Ceramic Materials Conference on Tough Ceramics, Ann Arbor, MI, March 1992.
56. "XAS: A Probe to Local Atomic and Electronic Structures of Ceramics," at the Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
57. "Deformation and Fracture of Two-Phase Ceramics at Elevated Temperatures," at the Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
58. "Transformation, Transformation Plasticity and Transformation Toughening in Ce-TZP/ Al_2O_3 Composites," at the Fifth International Conference on the Science and Technology of Zirconia, Melbourne, Australia, August 1992.
59. "Control of Grain Boundary Mobility in Ceramics," at the DOE Workshop on Grain Boundary and Interface Phenomena in the High Temperature Plasticity of Solids, Berkeley, CA, October 1992.
60. "Superplastic Forming of Ceramics," at the Winter Meeting of the American Society of Mechanical Engineers, Anaheim, CA, November 1992.
61. "Superplastic SiAlONs," at the Materials Research Society Fall Meeting, Boston, MA, November-December 1992.
62. "Cyclic Fatigue Degradation of Crack Tip Shielding in β -Silicon Nitride," at the Annual Meeting of the American Ceramic Society, Cincinnati, OH, April 1993.
63. "Sintering and Microstructural Development—Case Studies of Oxide and Nitride Ceramics," at the Annual Meeting of the American Ceramic Society, Cincinnati, OH, April 1993.
64. "Phase Transformations in Brittle Solids" at the Army Research Office Workshop on Brittle Materials under High Strain Rate of Deformation. Brown University, Providence, RI, July 1993.
65. "Superplastic Structural Ceramics via a Transient Phase Approach," at the Symposium E (Superplasticity) 3rd IUMRS International Conference on Advanced Materials. Tokyo, Japan, August 1993.
66. "Deformation of Fine-Grained SiAlON," at the Workshop on Tailoring of High-Temperature Properties of Si_3N_4 -Ceramics. Schloss Ringberg, Tegernsee, Germany, October 1993.
67. "Issues of Sinterability and Microstructure Evolution of Small Ceramic Particles," at the NSF Workshop on Small Particle Sintering. State College, PA, November 1993.
68. "Structural Origin of Pb-Containing Relaxor Perovskites," at the Office of Naval Research Workshop on Fundamentals of Ferroelectrics. Williamsburg, VA, February 1995.
69. "Fracture of Tough Ceramics - The Role of Temperature and Cyclic Load," at University of Pennsylvania. Philadelphia, PA, February 1995.
70. "Processing and Properties of Ferroelectric Oxide Thin Films," at University of Cincinnati. Cincinnati, OH, March 1995.
71. "Fracture Mechanics of Fatigue in Ceramics," at the 6th Intl. Symposium on Fracture Mechanics of Ceramics. Karlsruhe, Germany, July 1995.

72. "High Temperature Acid-Base Behavior of Ceramics," at the Gordon Research Conference on Solid State Studies of Ceramics, Colby-Sawyer College, New London, NH, July 1995.
73. "Ceramic Sinterability," at Sintering 1995, University Park, PA, September 1995.
74. "Fracture Mechanics of Fatigue in Ceramics," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
75. "Ceramic Superplasticity," at the Workshop on High-Temperature Deformation of Structural Materials, Schloss Ringberg, Tegernsee, Germany, July 1996.
76. "Sintering of Fine Oxide Powders," at the Korea-Japan Workshop on Microstructure Development in Materials, Seoul, Korea, October 1996.
77. "Perspectives on Relaxor Ferroelectrics," at the Korea Advanced Institute of Science and Technology, Seoul, Korea, October 1996.
78. "Phase Transformations of Silicon Nitride and Silicon Carbide," at the Workshop on Grain Boundary Dynamics of Precursor-Derived Covalent Ceramics, Schloss Ringberg, Tegernsee, Germany, November 1996.
79. "Laminar and Cellular Composite Ceramics via Colloidal Rolling," at the Workshop on Synergy Ceramics, Nagoya, Japan, November 1996.
80. "Pb-containing Perovskite Relaxor Ferroelectrics," at the Office of Naval Research Workshop on Fundamentals of Ferroelectrics, Williamsburg, VA, February 1997.
81. "Pb-containing Perovskite Relaxor Ferroelectrics," at the 99th Annual Meeting of the American Ceramic Society, Cincinnati, OH, May 1997.
82. "Ceramic Superplasticity," Workshop on Atomistic Simulation of Crystal Plasticity and Fracture, Argonne, IL, August 1997
83. "Innovations in Processing of Structural Ceramics with High Aspect Ratio Features," International Symposium on Novel Synthesis and Processing of Ceramics, Kurume, Japan, October 1997
84. "Paradigms of Innovations in Materials Research," Plenary Lecture, Annual Meeting of the Chinese Society for Materials Science, Tainan, Taiwan, November 1997
85. "Ferroelectric Thin Films," Department of Materials Science and Engineering, National Tsinghua University, Hsinchu, Taiwan, November 1997
86. "Ferroelectric Thin Films," Department of Materials Science and Engineering, National Chaotung University, Hsinchu, Taiwan, November 1997
87. "Local Disorder and Defects in Ferroelectric Perovskites," Department of Materials Science and Engineering, University of Illinois, Champaign-Urbana, IL, February 1998
88. "Phase Relations and Phase Stability in SiAlON Systems," Annual Meeting of the American Ceramic Society, Cincinnati, OH, May 1998
89. "On Interface Related Phenomena in Ferroelectrics and Dielectrics," Annual Meeting of the American Ceramic Society, Cincinnati, OH, May 1998

90. "Layered Microstructures vs. Cellular Microstructures," Annual Meeting of the American Ceramic Society, Cincinnati, OH, May 1998
91. "Issues and Possible Solutions for Silicon Nitride used below 1400°C," Workshop on Ultrahigh Temperature Ceramics, Boulder, CO, May 1998
92. "In-Situ Toughened Alpha SiAlON," Conference on the New Developments in High Temperature Ceramics, Istanbul, Turkey, August 1998.
93. "In-Situ Toughened Alpha SiAlON," First International Conference on Inorganic Materials, Versailles, France, September 1998.
94. "Local Structures and Defects in Ferroelectric Oxides," Drexel University, Philadelphia, PA, November 1998.
95. "Sintering of Fine Oxide Powders," Rutgers University, New Brunswick, February 1999.
96. "Two-Phase Ceramic Laminates from Wet Deformation Processing," Symposium on Micromechanics and Micromechanisms of Deformation and Fracture, TMS Annual Meeting, San Diego, March 1999.
97. "Innovations in Structural Ceramics and Composites," Brown University, Providence, April 1999.
98. "Aging of Relaxor Dielectrics," Symposium on dielectric Materials and Devices, Annual Meeting of the American Ceramic Society, Indianapolis, April 1999.
99. "Dynamics of Domain Walls in Ferroelectric Oxides," Annual Meeting of the American Ceramic Society, Indianapolis, April 1999.
100. "Laminar and Cellular Composites of Engineering Ceramics," Engineering Ceramics '99 Research Workshop, Smolenice Castle, Slovakia, May 1999.
101. "Using Silicon Nitride Based Ceramics at High Temperatures," ASME Meeting, Nashville, TN, November 1999.
102. "Polarization Switching Behavior in Ferroelectric and Antiferroelectric Thin Films," March Meeting of the American Physical Society, Minneapolis, March 2000.
103. "Antiferroelectricity – The Invisible Hand Behind Good Ferroelectrics," Symposium on Advances in Dielectric Materials and Multilayer Electronic Devices, Annual Meeting of the American Ceramic Society, St. Louis, May 2000.
104. "Ferroelectric/Antiferroelectric Thin Films and Their Composites", Electro Ceramics VII, Portoroz, Slovenia, September 2000.
105. "Near Surface Ferroelectricity of FE/AFE Thin Films," Fall Meeting of Materials Research Society, Boston, November 2000.
106. "In Search of Ceramic Steel," Department of Materials Science and Engineering, UC Berkeley, January 2001.
107. "PbZrO₃ Thin Films-Ferroelectric and Antiferroelectric Behavior," Annual Meeting of the American Ceramic Society, Indianapolis, April 2001.

108. "The Development of Tough α -SIALON," Keynote Lecture, 1st International Symposium on SIALONS, Chiba, Japan, December 2001.
109. "Microstructure Development in Silicon Nitride-Issues and Plausible Resolutions," Annual Meeting of the American Ceramic Society, St. Louis, April-May 2002.
110. "PMN-PT Related Relaxors and Their Magnetic Analogs," Annual Meeting of the American Ceramic Society, St. Louis, April-May 2002.
111. "Scientific and Technological Interest in Advanced Nitride," Keynote Lecture, First International Workshop on Spinel Nitride and Related Materials, Rudersheim/Rhein, Germany, September 2002.
112. "Nanosized Oxide Particles and Ceramics for Biomedical and Electromagnetic Applications," 2002 International Nano Ceramics/Crystals Forum, Seoul, Korea, August 2002.
113. "Field Effect on Electrical Conductivity of Transition Metal Oxides," California Institute of Technology, January 2003.
114. "Recent Development in Alpha Sialon Ceramics," Annual Meeting of the American Ceramic Society, Nashville, April 2003.
115. "Size Effect on Antiferroelectricity," Annual Meeting of the American Ceramic Society," Nashville, April 2003.
116. "Alpha Sialon-Based Monolithics and Composites," Composites, Lake Louise, Canada, October 2003.
117. "Processing and Properties of Advanced Ceramics and Nanoceramics," JSPS International Workshop on Advanced Ceramics, Atami, Japan, November 2003.
118. "Multifunctional Nanoparticles and Their Hierarchies for Biomedical Applications," University of Tennessee, Knoxville, April 2004
119. "Ferroelectric-like Thin Film Memory Devices," Annual Meeting of the American Ceramic Society, Indianapolis, April 2004.
120. "Multifunctional Nanoparticles and Their Hierarchies for Biomedical Applications," Annual Meeting of the American Ceramic Society, Indianapolis, April 2004.
121. "Charge Transfer in Transition Metal Oxides in Thin Films and Electrode Interfaces," ONR Workshop on Frontiers of Epitaxial Engineering, Moab, UT, May 2004.
122. " α -SiAlON—Optimization of Properties," International Symposium on Advanced Silicon Based Ceramics--ISASC," Gyeongju, Korea, June 2004.
123. "Sintering of Nanograin Ceramics," ENCERA 04, Osaka, Japan, October 2004.
124. "Competing Interactions in Dielectric and Magnetic Structures," Workshop on Anisotropy and Anisotropic Materials, Osaka, October, 2004.
125. "Approaches to Nanograin Ceramics," Workshop on Ductilization of Ceramics, Santa Fe, NM, November, 2004.
126. "Materials Innovation in Materials Science and Engineering," Department of Materials Science and Engineering, University of Michigan, Ann Arbor, March 2005.

127. "Nanograin Barium Titanate," Annual Meeting of the American Ceramic Society, Baltimore, April 2005.
128. "Nanograin Barium Titanate," Forum on Materials Research, National Institute of Materials Science, Tsukuba, Japan, April 2005.
129. "Multifunctional Nanoparticles and Their Hierarchies for Biomedical Applications," Annual Meeting of the European Ceramic Society, Potoroz, June 2005.
130. "Modeling Electroceramics: Phase Transitions in Nanograin Barium Titanate and Magnetoresistance in Perovskite Ruthenates," Fourth Asian Meeting on Electroceramics, Hangzhou, China, June 2005.
131. "Nanograin Barium Titanate Ceramics, Processing and Properties," US-Japan Workshop on Dielectrics and Piezoelectrics, Annapolis, MD, November 2005.
132. "Sintering and Grain Growth: Nanograin Ceramics," Gordon Conference on Solid State Studies of Ceramics, August 2006
133. "Slow Grain Growth," International Workshop on Interfaces in Functional Materials, Bear Creek, PA, October 2006.
134. "A Perspective on Nanoceramics," Sosman lecture, Annual Meeting of American Ceramic Society/MS&T 2006, Cincinnati, October 2006.
135. "Understanding Nanograin BaTiO₃ Ceramics and Submicron MLSS," Annual Meeting of American Ceramic Society/MS&T 2006, Cincinnati, October 2006.
136. "Controlled Growth of SrRuO₃ Thin Films and Related Heterostructures," Annual Meeting of American Ceramic Society/MS&T 2006, Cincinnati, October 2006.
137. "Nanograin Ceramics: Two-step Sintering and Grain Growth," International Symposium on Advanced Ceramics (ISAC-III)/MP3, Singapore, December 2006.
138. "A Perspective of Nanoceramics," Institute of Biotechnology and Nanotechnology, Singapore, December 2006.
139. "A Perspective of Nanoceramics," Shanghai Institute of Ceramics, Shanghai, China, December 2006.
140. "Transition Metal Oxide Electronics," Penn-Academia Sinica Symposium, Taipei, Taiwan, January 2007.
141. "Transition Metal Oxide Electronics," Tseng-Ying Tien Memorial Symposium, Ann Arbor, MI, April 2007.
142. "Understanding Nanograin BaTiO₃ Ceramics: Sintering and Size Effect," International Symposium on Integrated Ferroelectrics (ISIF), Bordeaux, France, May 2007.
143. "Kinetic Lessons from Sialons," Keynote lecture, 2nd International Symposium on Sialons and Non-oxides, Ise-Shima, Mie, Japan, December 2007.
144. "Transition Metal Oxide Electronics," Penn-University of Puerto Rico Partnership Symposium on Nanotechnology: Material Synthesis, Characterization and Devices, Humacao, PR, May, 2008.

- 145 “Domain Wall Motion in PbTiO_3 and BaTiO_3 : A Problem of Nucleation and Growth,” Keynote lecture, International Materials Research Conference (IMRC) 2008, Chongqing, China, June 2008.
- 146 “Residual Stress and Dead Layer Effects on Fine Grain and Nanograin Barium Titanate Ceramics,” Asian Meeting on Ferroelectrics (AMF6), Taipei, Taiwan, August 2008.
- 147 “Resistance Switching Memory: Material Design and Conduction Mechanisms,” Materials Science and Technology (MS&T08), Pittsburg, October 2008.
- 148 “Residual Stress Effects on Fine Grain and Nanograin Barium Titanate Ceramics,” Materials Science and Technology (MS&T08), Pittsburg, October 2008.
- 149 “Sintering of Nanograin Ceramics,” Materials Science and Technology (MS&T08), Pittsburg, October 2008.
- 150 “Resistance Switching Memory: Material Design and Conduction Mechanisms,” ICMR-ICMA Winter School on New Carbon Materials and Functional Oxides, Bangalore, December 2008.
- 151 “Nonconventional Pressureless Sintering and Grain Growth,” 3rd International Conference on Science and Technology for Advanced Ceramics (STAC3), Yokohama, Japan, June 2009.
- 152 “Stable and Responsive Nanoparticles for Biomedical Applications,” Nano Today 2009, Singapore, August 2009.
- 153 “Nonconventional Pressureless Sintering and Grain Growth,” Plenum lecture, Chinese International Conference on High-Performance Ceramics (CICC-6), Harbin, China, August 2009.
- 154 “Nanometallic Crystalline and Amorphous Thin Films with Switchable Resistance,” 11th International Conference on Ceramic Processing, Zurich, August 2010.
- 155 “New Electric Effects of 8-Y Zirconia,” Materials Science and Technology (MS&T10), Houston, October, 2010.
- 156 “A Size-dependent Nanoscale Metal-Insulator Transition in Random Materials.” Korea Advanced Institute of Science and Technology, Daejeon, April, 2011.
- 157 “A Size-dependent Nanoscale Metal-Insulator Transition in Random Materials.” Seoul National University, Seoul, May, 2011.
- 158 “A Size-dependent Nanoscale Metal-Insulator Transition in Random Materials.” 5th International Conference on Science and Technology for Advanced Ceramics (STAC5), Yokohama, Japan, June 2011.

Other Presentations (A partial list; * for the presenting author)

1. I-W. Chen,* "Mechanisms and Mechanics of Crack Propagation at 0.5 Tm Under Intergranular Segregation", at Symposium on Crack Propagation Under Creep and Creep Fatigue, American Society for Metals, Orlando, FL, October 1986.
2. K.J. Bowman,* P.E. Reyes-Morel and I-W. Chen, "Reversible Transformation Plasticity in Uniaxial Tension Compression Cycling of Mg-PSZ," at Symposium on Advanced Structural Ceramics, Materials Research Society Fall Meeting, Boston, MA, December 1986.
3. P.E. Reyes-Morel and I-W. Chen,* "Transformation Plasticity of Zirconia Composites," at The American Ceramic Society Annual Meeting, Pittsburgh, PA, April 1987.
4. I-W. Chen,* S.J. Keating, X. Wu, J. Hsu, C. Keating and T.Y. Tien, "Structure and Property of Oxygen-rich $\text{YBa}_2\text{Cu}_3\text{O}_x$," at The American Ceramic Society Annual Meeting, Pittsburgh, PA, April 1987.
5. B.S. Li, P. Yang, P.E. Reyes-Morel, J.S. Cherng, I-W. Chen* and T.Y. Tien, "On the Ferroelastic Domain Reorientation Mechanism in Tetragonal Zirconia Polycrystals," at The American Ceramic Society Annual Meeting, Pittsburgh, PA, April 1987.
6. P.E. Reyes-Morel, J.S. Cherng* and I-W. Chen, "Shape Memory Effect in Ce-TZP," at The American Ceramic Society Annual Meeting, Pittsburgh, PA, April 1987.
7. P.E. Reyes-Morel,* K.J. Bowman and I-W. Chen, "Transformation-induced Creep and Creep-fatigue Interactions in Mg-PSZ at Low Temperatures," at The American Ceramic Society Annual Meeting, Pittsburgh, PA, April 1987.
8. K.J. Bowman,* P.E. Reyes-Morel and I-W. Chen, "Fully Reversed Cyclic Plastic Deformation of Mg-P/SZ," at The American Ceramic Society Annual Meeting, Pittsburgh, PA, April 1987.
9. Y-H. Chiao* and I-W. Chen, "Defect Structures in Tetragonal, Orthorhombic and Monoclinic Zirconia," at The American Ceramic Society Annual Meeting, Pittsburgh, PA, April 1987.
10. P.E. Reyes-Morel* and I-W. Chen, "Radiation Effects on Mechanical Properties of Zirconia Based Ceramics," at the 89th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1988.
11. J.S. Cherng* and I-W. Chen, "Strength and Toughness of Zirconia Ceramics under Triaxial Stress States," at the 89th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1988.
12. C.K. Yoon* and I-W. Chen, "Superplastic Flow in Mullite Zirconia Composites I. The Volume Fraction Effect," at the 89th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1988.
13. C.K. Yoon* and I-W. Chen, "Superplastic Flow in Mullite Zirconia Composites II. The Aspect Ratio Effect," at the 89th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1988.
14. I.G. Lee* and I-W. Chen, "Grain Growth in Tetragonal and Cubic Zirconia," at the 89th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1988.

15. K.J. Bowman* and I-W. Chen, "Deformation Texture of Transformation Toughened Zirconia," at the 89th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1988.
16. S-Y. Liu,* K.J. Bowman and I-W. Chen, "Fatigue and Cyclic Deformation of Mg-PSZ," at the 89th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1988.
17. S.J. Keating,* I-W. Chen and T.Y. Tien, "Thermal Properties and Processing of Bi-Sr-Ca-Cu-O Superconductors," at the 1988 Fall Meeting of Materials Research Society, Boston, MA, November 1988.
18. X. Wu,* P.E. Reyes-Morel and I-W. Chen, "Hot Extrusion of $\text{Bi}_2(\text{Sr,Ca})_3\text{Cu}_2\text{O}_{8+x}$ and $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ Wires," at the 1988 Fall Meeting of Materials Research Society, Boston, MA, November-December 1988.
19. X. Wu* and I-W. Chen, "Creep and Hot Extrusion of High T_c Superconductors," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
20. S.J. Keating,* I-W. Chen and T.Y. Tien, "Oxygen Stoichiometry and Phase Stability in the Sr-Nb-O System," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
21. G. Hassold,* I-W. Chen and D.J. Srolovitz, "Monte-Carlo Simulation of Sintering and Grain Growth I. Periodic Microstructure," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
22. G. Hassold, I-W. Chen* and D.J. Srolovitz, "Monte-Carlo Simulation of Sintering and Grain Growth II. Final Stage Sintering," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
23. S-Y. Liu* and I-W. Chen, "Fatigue Life Time Prediction and Fracture Statistics of Brittle Ceramics," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
24. I-W. Chen,* J. Pan, F. Li and J.S. Cherng, "A Critical Assessment of Crack Tip Plastic Zone in Transformation Toughened ZrO_2 Ceramics," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
25. S.L. Hwang,* C.M. Hwang and I-W. Chen, "Superplasticity in Y_2O_3 -stabilized Cubic ZrO_2 ," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
26. C.M. Hwang,* S.L. Hwang and I-W. Chen, "Effect of a Liquid Phase on Superplasticity of 2Y-TZP," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
27. C.K. Yoon* and I-W. Chen, "Superplasticity in Mullite- ZrO_2 Composites," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
28. X. Wu* and I-W. Chen, "Superplastic Forming of Fine Grained Ceramics," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.
29. K.J. Bowman* and I-W. Chen, "The Influence of Shear Coupling on Evaluating t to m Transformation in ZrO_2 Ceramics," at the 91st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1989.

30. S.L. Huang* and I-W. Chen, "Grain Growth Control in Zirconia Polycrystals," at the Fourth International Conference on the Science and Technology of Zirconia, Anaheim, CA, October 1989.
31. J.S. Cherng* and I-W. Chen, "Stress State Effect on Transformation Toughened Zirconia," at the Fourth International Conference on the Science and Technology of Zirconia, Anaheim, CA, October 1989.
32. K.J. Bowman* and I-W. Chen, "Transformation Textures in Zirconia," at the Fourth International Conference on the Science and Technology of Zirconia, Anaheim, CA, October 1989.
33. S-Y. Liu* and I-W. Chen, "Fatigue of 3Y-TZP," at the Fourth International Conference on the Science and Technology of Zirconia, Anaheim, CA, October 1989.
34. I-W. Chen, "An Elastic-Plastic Theory of Toughening of Brittle Solids," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
35. X. Wu* and I-W. Chen, "Superplastic Forming of Fine Grained Zirconia Ceramics and Composites," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
36. L-A. Xue* and I-W. Chen, "Superplasticity of Fine Grained Alumina," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
37. S.L. Hwang* and I-W. Chen, "Creep-Enhanced Dynamic Grain Growth of Superplastic Zirconia," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
38. I-W. Chen* and S.L. Hwang, "Grain Growth Control in Nonstoichiometric Oxides - Space Charge and Boundary Mobility," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
39. S.L. Hwang,* S. Rutter and I-W. Chen, "Grain Growth in Fluorite-Structured Oxide Solid Solutions," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
40. P. Li,* I-W. Chen, T.Y. Tien, P.G. Allen and J.E. Penner-Hahn, "X-ray Absorption Studies of Trivalent Oxide-Doped Ceria," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
41. S.J. Keating,* I-W. Chen and T.Y. Tien, "Sr-Nb-O System: Electrical and Magnetic Characterization of Metallic Conductivity and Semi-conductivity," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
42. S.J. Keating,* I-W. Chen, T.Y. Tien and Z.K. Huang, "Sr-Nb-O System: Nonstoichiometry and Phase Equilibrium," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
43. S-Y. Liu* and I-W. Chen, "Fatigue Crack Growth and Life Time Prediction of Ceramics," at the 92nd Annual Meeting of The American Ceramic Society, Dallas, TX, April 1990.
44. P. Li,* I-W. Chen, J.E. Penner-Hahn and T.Y. Tien, "X-ray Absorption Studies of ZrO₂ with Trivalent Dopants," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.

45. P-L. Chen* and I-W. Chen, "Alumina-Aluminate Platelet Composite Materials," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
46. J. Pan* and I-W. Chen, "Crack-Tip Fields for Transformation Toughened Materials," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April-May, 1991.
47. L.A. Xue* and I-W. Chen, "Solute Effect on the Grain Growth of CeO_2 ," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
48. L.A. Xue, K. Meyer,* and I-W. Chen, "Control of Grain Boundary Pinning in $\text{Al}_2\text{O}_3/\text{ZrO}_2$ Composites with $\text{Ce}^{3+}/\text{Ce}^{4+}$ Doping," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
49. S-L. Hwang* and I-W. Chen, "Shear-Thickening Creep in Glass Containing Silicon Nitrides," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
50. S-L. Hwang* and I-W. Chen, "Transient-Liquid Aided Superplastic Forming of Silicon Nitrides," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
51. X. Wu* and I-W. Chen, "Formability of Superplastic Si_3N_4 in Uniaxial and Biaxial Deformation," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
52. L.A. Xue* and I-W. Chen, "Superplastic Mullite Via Transient Phase Processing," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
53. L.J. Malczewski* and I-W. Chen, "Uniaxial Tension-Compression Cyclic Fatigue of Alumina," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
54. S-Y. Liu* and I-W. Chen, "Cyclic Fatigue of Yttria-Stabilized Zirconia and Magnesia-Stabilized Zirconia," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
55. S-Y. Liu* and I-W. Chen, "The Role of R-Curve and K-a Curve on the Fatigue Fractography of Monolithic Ceramics," at the 93rd Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1991.
56. P.L. Chen* and I-W. Chen, "Reactive CeO_2 Powders by the Homogeneous Precipitation Method," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
57. P.L. Chen* and I-W. Chen, "Solute Effect on Grain Growth in Y_2O_3 and CeO_2 Systems," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
58. L.A. Xue* and I-W. Chen, "A New SiC_w Reinforced Lithium Aluminosilicate Composite," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
59. L.A. Xue* and I-W. Chen, "Superplastic Alumina at Temperature Below 1300°C ," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
60. P. Li,* S.Y. Chen and I-W. Chen, "X-Ray Absorption Studies of PMN-PZN Relaxors," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.

61. J.S. Cherng* and I-W. Chen, "The Effects of Alumina Content on the Transformation Plasticity and R-Curve Behaviors of Ce-TZP/ Al_2O_3 Composites," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
62. S.L. Hwang and I-W. Chen, "Reactive Sintering Characteristics of Si_3N_4 with Liquid Trapping Inclusions," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
63. S.L. Hwang* and I-W. Chen, "Microstructures of Superplastic Silicon Nitrides," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
64. S.Y. Liu* and I-W. Chen, "Plasticity Induced Fatigue Damage in Ce-TZP," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
65. D. Jacobs* and I-W. Chen, "Environmental and Mechanical Contributions to Cyclic and Static Fatigue in Si_3N_4 and Al_2O_3 ," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
66. X. Wu,* T-S. Sheu, T.Y. Tien and I-W. Chen, "Crack Propagation of a High Strength Si_3N_4 at 1400°C Under Creep and Fatigue Conditions," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
67. P. Li,* J.E. Penner-Hahn, T.Y. Tien and I-W. Chen, "Crystal Chemistry Studies of ZrO_2 Solid Solutions by EXAFS," at the 94th Annual Meeting of The American Ceramic Society, Minneapolis, MN, April 1992.
68. S.Y. Liu,* D. Jacobs and I-W. Chen, "Fatigue of Structural Ceramics," at the TMS Annual Meeting, Denver, CO, February 1993.
69. P. Li*, I-W. Chen and J.E. Penner-Hahn, "Solid State Chemistry Studies Using EXAFS and XANES Techniques I. Local Atomic Structure and Dopant Size Effect," at the Materials Research Society Spring Meeting, San Francisco, CA, April 1993.
70. P. Li*, I-W. Chen and J.E. Penner-Hahn, "Solid State Chemistry Studies Using EXAFS and XANES Techniques II. Cation Ordering and Static/Dynamic Distortion," at the Materials Research Society Spring Meeting, San Francisco, CA, April 1993.
71. P. Li* and I-W. Chen, "Dopant Effects in Zirconia Solid Solutions — An EXAFS/XANES Study," at the 95th Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1993.
72. S-Y. Liu,* I-W. Chen, and J. Calomeni-Michels, "High Temperature Fatigue of Structural Ceramics," at the 95th Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1993.
73. S-Y. Chen* and I-W. Chen, "Cracking Mechanisms During Pyrolysis of Barium Titanate Thin Films," at the 95th Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1993.
74. P.L. Chen* and I-W. Chen, "Sintering Behavior of Highly Reactive CeO_2 Powders," at the 95th Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1993.
75. P.L. Chen* and I-W. Chen, "Solute Effect on Grain Growth in CeO_2 System," at the 95th Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1993.

76. S.Y. Chen* and I-W. Chen, "Texture Control of PZT Thin Films," at the 95th Annual Meeting of The American Ceramic Society, Cincinnati, OH, April 1993.
77. S.Y. Liu,* Z.K. Huang, and I-W. Chen, "High Temperature Mechanical Properties of Pressureless-Sintered Si_3N_4 Composites," at the 96th Annual Meeting of the National Institute of Ceramic Engineers, Indianapolis, IN, April 1994.
78. S.Y. Liu,* and I-W. Chen, "High Temperature Fatigue Properties of a SiC Whisker Reinforced Li-Aluminosilicate," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
79. Y. Wang,* P. Li, and I-W. Chen, "Aging Characteristics of PZN-PT System," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
80. P. Li,* Y. Wang, and I-W. Chen, "Local Atomic Structure Study of Pb-Based Relaxor," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
81. P. Li* and I-W. Chen, "X-ray Absorption Study of N-Stabilized ZrO_2 ," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
82. S.Y. Liu* and I-W. Chen, "Fatigue of Si_3N_4 at Elevated Temperatures: Short-Crack Behavior and Ductile-Brittle Transition," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
83. D.S. Jacobs* and I-W. Chen, "Cyclic Fatigue in Al_2O_3 : A Balance between Degradation and Accumulation of Crack Wake Shielding," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
84. S.Y. Liu* and I-W. Chen, "Temperature Dependence of Strength and Toughness of Monolithic Ceramics," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
85. S-Y. Chen* and I-W. Chen, "Texture Evolution of Oriented PZT Films Using Wet Chemical Processes," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
86. P.L. Chen and I-W. Chen*, "Solute Effect on Grain Boundary Mobility in Y_2O_3 System," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
87. M. Menon* and I-W. Chen, "Reaction Hot Pressing in M-Si-Al-O-N System," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
88. Z.K. Huang* and I-W. Chen, "Phase Relationships in Part of Sm, Si, Al/N, O System and Their Implications for Sm-SiAlON Fabrication," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
89. S-Y. Chen* and I-W. Chen, "Electrical Properties of Oriented PZT Films," at the 96th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1994.
90. S-Y. Chen, X. F. Du, and I-W. Chen*, "Crystallization and Texture of Bi-containing Layered Perovskite Thin Films," at the Materials Research Society Fall Meeting, Boston, MA, November 1994.
91. P. Li,* Y. Wang, and I-W. Chen, "Local Atomic Structures of PZT Near the Morphotropic Phase Boundary," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.

92. I-W. Chen* and S-Y. Chen, "Cracking Mechanisms During Pyrolysis of Ferroelectric Thin Films," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
93. Z.K. Huang,* M. Engineer, and I-W. Chen, " β - α' Sialon Composites without Al_2O_3 Additives," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
94. P.L. Chen,* J-H. Han, and I-W. Chen, "Preparation and Sintering Characteristics of Y_2O_3 Powders," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
95. M. Menon* and I-W. Chen, "Rolling Characteristics of Highly-Loaded Ceramic Slips at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
96. A. Rosenflanz* and I-W. Chen, "Optimization of the Superplastic Formability of Sialon Ceramics," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
97. X. Du,* S-Y. Chen, and I-W. Chen, "Structures and Properties of Bismuth-Containing Layered Ferroelectric Thin Films," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
98. D.S. Jacobs* and I-W. Chen, "Mechanisms and Effects of Microstructure in Ceramic Fatigue," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
99. M. Engineer* and I-W. Chen, "A Fatigue Crack Growth Model for Ceramics," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
100. J-H Han,* P-L. Chen, and I-W. Chen, "Effect of Dopants on Superplasticity of Y_2O_3 Ceramics," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
101. Y. Wang* and I-W. Chen, "Dielectric Anomaly of PZN-PT Solid Solution Near MPB," at the 97th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1995.
102. M. Menon* and I-W. Chen, "Mechanical Characterization of Layered and Cellular Composites Fabricated by Rolling of Highly Loaded Ceramic Suspensions," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
103. M. Menon* and I-W. Chen, "Microstructure Evolution During Rolling of High Density Suspensions for Composite Fabrications," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
104. M. Engineer* and I-W. Chen, "Micromechanical Model of Fatigue Crack Growth in Ceramics," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
105. Z-K. Huang* and I-W. Chen, "Pressureless Sintering Si_3N_4 Ceramics by Using AlN and Rare-Earth Oxides," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
106. A. Rosenflanz* and I-W. Chen, "Transient Evolutions in SiAlON Ceramics Prepared from α and β - Si_3N_4 Powders," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.

107. P.L. Chen* and I-W. Chen, "Sintering of Fine Oxide Powders: Dopant Effects," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
108. S. Gong* and I-W. Chen, "Processing and Properties of SiC-TiB₂ Composites," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
109. Y. Wang* and I-W. Chen, "A Kink Model for Relaxor Ferroelectrics," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
110. Y. Wang* and I-W. Chen, "Relaxation Spectra of Relaxor Ferroelectrics," at the 98th Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1996.
111. I-W. Chen*, "Laminar and Cellular Composites from Colloidal Rolling," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
112. I-W. Chen* and A. Rosenflanz, "In-situ Toughened α' -SiAlON and Its Composites," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
113. I-W. Chen*, "Pb-Containing Perovskite Relaxors," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
114. X. Du* and I-W. Chen, "Fatigue-Free Lead Zirconate Titanate Thin Films on c-Oriented Bismuth Titanate Template," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
115. X. Du* and I-W. Chen, "Ferroelectric Thin Films of Bismuth Containing Layered Perovskites," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
116. X. Du* and I-W. Chen, "The Lorentz Consideration in Aurivillius Compounds," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
117. X. Du* and I-W. Chen, "Ferroelectric and Dielectric Characteristics of Ferroelectric/Semiconductor Heterostructures," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
118. M. Engineer* and I-W. Chen, "Simulation Study of High Temperature Fatigue Crack Growth Under Static and Cyclic Loading," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
119. Z-K. Huang,* A. Rosenflanz, and I-W. Chen, "Gas-Pressure-Sintering of Si₃N₄ Ceramic Using AlN and Rare Earth Oxides," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
120. Y. Wang* and I-W. Chen, "Polarization and Depolarization in Relaxor Ferroelectrics," at the 99th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1997.
121. I-W. Chen* and Y. Wang, "Dielectric Anomaly of Pb(Zn_{1/3}Nb_{2/3})O₃-PbTiO₃ Single Crystals," at the 100th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1998.
122. X-F. Du* and I-W. Chen, "Electrode Effects on Ferroelectric Thin Films," at the 100th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1998.

123. F. Hu*, X-F. Du and I-W. Chen, "Frequency Spectra of Polarization and Polarization Fatigue in PZT and PLZT Ferroelectric Thin Films," at the 100th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1998.
124. X-F. Du* and I-W. Chen, "Relaxation Behavior of Ferroelectric/Semiconductor Heterostructures," at the 100th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1998.
125. A. Rosenflanz* and I-W. Chen, "Microstructure Control and Mechanical Performance of In-Situ Toughened α' -SiAlON Ceramics," at the 100th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1998.
126. A. Rosenflanz* and I-W. Chen, "Effect of Rare-Earth Cations Size on the Kinetics of Phase Transformations in In-Situ Toughened Silicon Nitrides," at the 100th Annual Meeting of The American Ceramic Society, Cincinnati, OH, May 1998.
127. A.I. Mamchik* and I-W. Chen, "A Method of Microstructural Characterization of SiAlON Ceramics," at the 101st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1999.
128. A.I. Mamchik* J.S. Kim and I-W. Chen, "A New Method for Etching Silicon Nitride Ceramics," at the 101st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1999.
129. E.J. Winn* and I-W. Chen, "Laminar and Cellular Oxide Composites via a Rolling Technique," at the 101st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1999.
130. X-H. Wang* and I-W. Chen, "Sintering Characteristics of Nanocrystalline Yttrium Oxide Powders Prepared by Polymerized Organic-Inorganic Synthesis," at the 101st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1999.
131. D-M. Liu* and I-W. Chen, "Low Temperature Synthesis of Organic Inorganic Composites for Biotechnology Applications," at the 101st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1999.
132. J-S. Kim* and I-W. Chen, "Microstructure Development and its Effects on Mechanical Properties of α -SiAlON Ceramics," at the 101st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1999.
133. Y. Wang* and I-W. Chen, "The Frequency Spectra of Coercive Field of PLZT Thin Films," at the 101st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1999.
134. Y. Wang*, Z.L. Gui, L.T. Li, and I-W. Chen, "Aging Rate vs. Temperature for Doped PMN-PZN-PT Ceramics under a Strong Field," at the 101st Annual Meeting of The American Ceramic Society, Indianapolis, IN, April 1999.
135. J.-S. Kim* and I-Wei Chen, "Microstructure Design of Alpha-Sialon Ceramics," at Sintering 99, State College, PA, November 1999.
136. X-H. Wang and I-Wei Chen*, "Full Density Sintering without Concurrent Grain Growth," at Sintering 99, State College, PA, November 1999.
137. L-L. Wang, T-Y. Tien and I-W. Chen, "Morphology of Silicon Nitride Grains Grown from a Liquid," at Sintering 99, State College, PA, November 1999.

138. X-H. Wang and I-Wei Chen*, "Pressureless Sintering of Nanocrystalline Oxides," at the Fall Meeting of The Materials Research Society Meeting, Boston, November 1999.
139. I-Wei Chen* and Y. Wang, "Activation Field and Fatigue of (Pb,La)(Zr,Ti)O₃ Ferroelectric Thin Films," at the Fall Meeting of The Materials Research Society, Boston, November 1999.
140. I-Wei Chen*, D-S. Yoon and D-M. Liu, "Biofunctionality of Encapsulated Biopolymers in Inorganic Matrices," at the Spring Meeting of The Materials Research Society, St. Francisco, April 2000.
141. A.I. Mamchik* and I-Wei Chen, "Application of Mechanochemical Treatment for Disordering Ordered Ceramic Compounds," at the 102nd Annual Meeting of The American Ceramic Society, St. Louis, MO, May 2000.
142. M.Y. Zenotchkine*, J.S. Kim, R.A. Shuba and I-Wei Chen, " α -SiAlON Seed Crystals Grown from Liquid," at the 102nd Annual Meeting of The American Ceramic Society, St. Louis, MO, May 2000.
143. E.J. Winn and I-Wei Chen*, "Structure-Property Relations in Wavy and Cellular Composites," at the 102nd Annual Meeting of The American Ceramic Society, St. Louis, MO, May 2000.
144. X-P. Li*, A.I. Mamchik and I-Wei Chen, "Modeling Near Surface Ferroelectricity in Ceramics," at the 102nd Annual Meeting of The American Ceramic Society, St. Louis, MO, May 2000.
145. R.A. Shuba* and I-Wei Chen, "In-situ Toughened Ca α -SiAlON Ceramics: Mechanical Properties and Microstructure Observations," at the 102nd Annual Meeting of The American Ceramic Society, St. Louis, MO, May 2000.
146. J.S. Kim* and I-Wei Chen, "Microstructure Development and Mechanical Properties of Seeded α -SiAlON," at the 102nd Annual Meeting of The American Ceramic Society, St. Louis, MO, May 2000.
147. D-S. Yoon* and I-Wei Chen, "Immobilization of Protein Molecules in Hydrophilic and Hydrophobic Silica," at the 102nd Annual Meeting of The American Ceramic Society, St. Louis, MO, May 2000.
148. X-P. Li* and I-Wei Chen, "Antiferroelectric PbZrO₃ and Pb(Zr,Ti)O₃/PbZrO₃ Multilayered Thin Films Prepared by R.F. Magnetron Sputtering," at the 102nd Annual Meeting of The American Ceramic Society, St. Louis, MO, May 2000.
149. A. I. Mamchik* and I-Wei Chen, "Electrical and Magnetic Properties of BiMO₃ Perovskites," at the 103rd Annual Meeting of the American Ceramic Society, Indianapolis, IN, April 2001.
150. A.I. Mamchik* and I-Wei Chen, "Conductivity Measurements of Bi³⁺/La³⁺-Doped Barium Titanate," at the 103rd Annual Meeting of the American Ceramic Society, Indianapolis, IN, April 2001.
151. Y. Wang* and I-Wei Chen, "Study of Surface-Modified AlN Ceramics and PVDF Film," at the 103rd Annual Meeting of the American Ceramic Society, Indianapolis, IN, April 2001.

152. M. Zenotchkine*, R. Shuba and I-Wei Chen, "Preparation of α -Sialon Seed Crystals with Various Sizes and Compositions," at the 103rd Annual Meeting of the American Ceramic Society, Indianapolis, IN, April 2001.
153. R. Shuba*, M. Zenotchkine and I-Wei Chen, "Structure-Property Relationships in In-Situ Toughened Alpha-SiAlONs," at the 103rd Annual Meeting of the American Ceramic Society, Indianapolis, IN, April 2001.
154. R. Myers*, A. Mamchik and I-Wei Chen, "Electric and Magnetic Properties of $\text{Pr}_{1-x}\text{Ca}_x\text{MnO}_3$ Thin Films: Thickness and Substrate Effects," at the 103rd Annual Meeting of the American Ceramic Society, Indianapolis, IN, April 2001.
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168. Prasad Shastri*, A.M. Lipski, J.C. Sy, W. Znidarsic, H. Choi, and I-W. Chen, "Nano-scale Engineering of Surfaces," NATO-ASI Nanoengineered Nanofibrous Materials Conference, Turkey, September, 2003.
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170. S.A. McGill*, O.N. Torrens, J.M. Kikkawa, A. Mamchik and I-W. Chen, "Measuring Magnetic Dynamics in the Manganites with Kerr Spectroscopy," the March Meeting of the American Physical Society, Montreal, March 2004.
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173. J. C. Sy*, I-W. Chen, V. P. Shasti, "Emulsion-based Control of Electrospun Fiber Morphology," 227th American Chemical Society National Meeting, 2004, Anaheim, CA, March-April 2004.
174. J. Yu*, H. Du, R. Shuba and I-W. Chen, "Effects of Excess AlN on Oxidation Behavior of Y- and Yb-Doped Alpha-SiAlON Ceramics," the 106th Annual Meeting of the American Ceramic Society, Indianapolis, IN, April 2004.
175. W. J. Znidarsic*, Hoon Choi, I-Wei Chen, V. Prasad Shastri, "Injectable Biomimetic Collagen/Hydroxyapatite Nanocomposites for Osseous Tissue Regeneration," Materials Research Society Spring Meeting, San Francisco, April 2004.
176. R. Zhou*, H. Choi, I. Corbin, S. Choi, H. Li, B. Gray, J.D. Glickson, I-W. Chen, H. Kung, "MR Imaging of Low Density Lipoprotein and Folate Receptors," 12th annual meeting of International Society of Magnetic Resonance in Medicine (ISMRM), Kyoto, Japan, May 2004.
177. I-Wei Chen*, Hoon Choi, Anna Lipski, William Znidarsic, P.V. Shastri, H. Kung, R. Zhou, and Y. Zhang, "Multifunctional Nanoparticles and Their Hierarchies for Biomedical Applications," Materials Research Society Fall meeting, Boston, December 2004.
178. H. Choi, W. Dmowski, F. Huang and I-W. Chen*, "Characterization of Superparamagnetic Iron Oxide Particles for Biomedical Applications," Materials Research Society Fall meeting, Boston, December 2004.

179. F. Q. Huang, I-W. Chen*, “Charge Transfer in Mixed Transition Metal Oxides,” Materials Research Society Fall meeting, Boston, December 2004.
180. F. Q. Huang, W. Dmowski,* I-W. Chen, “Anomalous Effect of Chromium on Enhancing Ferromagnetism of SrRuO₃,” March meeting of the American Physical Society, Los Angeles, March 2005.
181. F. Q. Huang*, I-W. Chen, “Magnetoresistance Caused by Spin-polarized Variable Range Hopping—Perovskite Ruthenates,” March meeting of the American Physical Society, Los Angeles, March 2005.
182. Yudi Wang*, W. Dmowski, I-W. Chen, “Dielectric Properties and Structures of Nanograin Barium Titanate,” March meeting of the American Physical Society, Los Angeles, March 2005.
183. Yudi Wang*, I-W. Chen, “Resistance Switching Oxide Thin Film Devices,” Workshop on Oxide Electronics, Chatham, MA, October, 2005.
184. Yudi Wang*, S. G. Kim, I-W. Chen, “Atomically Flat SrRuO₃ Conductive Thin Films on SrTiO₃ (001) by Pulsed Laser,” March Meeting of the American Physical Society, Baltimore, March 2006.
185. S. G. Kim*, Yudi Wang, I-W. Chen, “Strain Relaxation in Buried SrRuO₃ Thin Film under a Biaxial Compression, CaZrO₃/SrRuO₃/SrTiO₃ System,” March Meeting of the American Physical Society, Baltimore, March 2006.
186. X-H. Wang, T-Y. Sun, Yudi Wang, I-W. Chen*, “The Effect of Grain Boundary Charge on Ferroelectric Transitions in Nanograin BaTiO₃,” March Meeting of the American Physical Society, Baltimore, March 2006.
187. Yudi Wang, Soogil Kim, I-W. Chen*, “Voltage-induced Metal-Insulator Transitions in Perovskite Oxide Thin Films Doped with Strongly Correlated Electrons,” March Meeting of the American Physical Society, Denver, March 2007.
188. I-Wei Chen*, Yudi Wang, Tieyu Sun and Xiaohui Wang, “Size Effect on Ferroelectric Transitions in Nanograin Barium Titanate Polycrystals,” March Meeting of the American Physical Society, Denver, March 2007.
189. Young-Han Shin, Ilya Grinberg, I-Wei Chen and Andrew M. Rappe*, “Nucleation and Growth Mechanism of Ferroelectric Domain-Wall Motion,” March Meeting of the American Physical Society, Denver, March 2007.
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