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HOME ADDRESS: 13 Lake Baldwin Drive
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EDUCATION: Massachusetts Institute of Technology
SB-SM in Ceramics June, 1972
Thesis Title: "Crystallization Behavior of Glass-Forming Systems"
PhD in Materials Science in August, 1974.
Thesis Title: "Crystal Growth in Binary Silicate Glasses"
Advisor: Professor D. R. Uhlmann

RESEARCH INTERESTS:

Broad interest in materials science, including relaxation phenomena, viscous flow and sintering, thermal stress analysis, diffusion, kinetics of nucleation and crystallization, preparation of glasses and ceramics from gels, theory of drying, structure and properties of cementitious materials, mechanisms of deterioration of stone.

PROFESSIONAL EMPLOYMENT:

Princeton University, Joint appointment in *Princeton Materials Institute* and *Dept. Civil & Environmental Engineering*, 2/96-present

Job Title: William L. Knapp '47 Professor of Civil Engineering

E. I. du Pont de Nemours & Co., Central Research & Development Dept., 8/85-1/96

Job Title: Senior Research Associate

Responsibilities: Fundamental research in materials science

Achievements: Model of drying mechanics of gels, new techniques for measurement of permeability of gels, model for sintering kinetics of composites

Corning Glass Works, Research & Development Division, 10/74 - 8/85

Job Title: Research Associate

Responsibilities: Design, execute, and document original research programs contributing to project goals; direct 1-2 senior technicians.

Achievements: Viscous sintering theory for modelling optical waveguide (OWG) fabrication process; invented and patented bait coating essential to con-

temporary OWG fabrication method; theoretically demonstrated importance of stress-optical effect for OWG bandwidth; analysis of stresses in glass-to-metal seals; invented novel gel process for fabrication of glasses and ceramics.

Professional Awards:

- 1985 *G. W. Morey Award*, Glass Division of American Ceramic Society
- 1986 *Woldemar Weyl Award*, International Congress on Glass
- 1986 *Ross Coffin Purdy Award*, American Ceramic Society
- 1987 Elected Fellow of American Ceramic Society
- 1987 *W.H. Zachariassen Award*, Editorial Board, *Journal of Non-Crystalline Solids*
- 1990 *Fulrath Pacific Award*, Univ. California at Berkeley and Am. Ceram. Soc.
- 1992 *Best Paper in Drying in 1990-1991* (for *Theory of Drying*, J. Am. Ceram. Soc., 73 [1] (1990) 3-14) presented at Int. Drying Symposium
- 1994 *Robert Sosman Award*, American Ceramic Society
- 1995 *Ralph K. Iler Award*, American Chemical Society
- 1997 Elected to the *National Academy of Engineering* (Materials Division)
- 2001 *Brunauer Award* presented by Cements Division, Am. Ceram. Soc.
- 2002 *Brunauer Award* presented by Cements Division, Am. Ceram. Soc.
- 2003 *Cohen Memorial Distinguished Lectures Series*, Northwestern Univ.
- 2005 Awarded the *William L. Knapp '47 Chair Civil Engineering*
- 2006 *ISI Highly Cited Author* (A0378-2006-C)
- 2007 *Rosenquist Lecturer*, Univ. Oslo, Norway
- 2007 *Brunauer Award* presented by Cements Division, Am. Ceram. Soc.
- 2008 *Della Roy Lecture* presented by Cements Division, Am. Ceram. Soc.

Visiting Professorships:

- 1983 Visiting Professor at M.I.T., Fall term
- 1989 Invited Professor at Univ. Montpellier II, France, Spring 1989
- 1993 Visiting Scientist, Univ. Claude Bernard, Lyon, France, 4-9/93
- 2000 Visiting Professor, University of Dijon, France, Spring, 2000
- 2003 Visiting Professor, École Polytech. Fédérale Lausanne, Switzerland, 7-9/03

Teaching Awards:

Engineering Council *Award for Excellence in Teaching*, 2001 and 2003
School of Engineering & Applied Science *Distinguished Teacher Award*, 2002

Professional Service:

Member of Editorial Advisory Board, *Journal of Non-Crystalline Solids*
Member of Editorial Advisory Board, *Cement & Concrete Research*
Associate Editor, *Journal of the American Ceramic Society*

Books, Papers, Patents: 2 books, 10 patents, ~230 papers

Birth Date: April 27, 1949
MARITAL STATUS: Married, No Children.
WIFE'S NAME: Martha Ann Melendy Scherer
WIFE'S OCCUPATION: Physical Therapist

Languages: English, French

G. W. Scherer - List of Publications

Books:

Relaxation in Glass and Composites

G.W. Scherer (Wiley, New York, 1986; reprinted by Krieger, Malabar, FL, 1992)
331 pp.

Sol-Gel Science

C.J. Brinker and G.W. Scherer (Academic Press, New York, 1990) 908 pp.

Patents:

1. "Carbon coating for a starting member used in producing optical waveguide", E.K. Dominick and G.W. Scherer, U.S. Pat. 4,204,850 (May 27, 1980)
2. "Carbon coating for a starting member used in producing optical waveguides", E.K. Dominick and G.W. Scherer, U.S. Pat. 4,233,052 (Nov. 11, 1980)
3. "Method for drawing high-bandwidth optical waveguides", G.W. Scherer, U.S. Pat. 4,248,614 (Feb. 3, 1981)
4. "Gradient index optical waveguide and method of making", S.T. Gulati and G.W. Scherer, U.S. Pat. 4,358,181 (Nov. 9, 1982)
5. "Method of forming a glass or ceramic product", G.W. Scherer, U.S. Pat. 4,451,855 (Sept. 17, 1985)
6. "Method for making glass or ceramic article", J.C. Luong and G.W. Scherer, U.S. Pat. 4,561,872 (Dec. 31, 1985)
7. "Method of forming glass or ceramic article", G.W. Scherer, U.S. Pat. 4,574,063 (Mar. 4, 1986)
8. "Method for making metal halide optical fiber", A. Sarhangi and G.W. Scherer, U.S. Pat. 4,610,708 (Sept. 9, 1986)
9. "Organic-inorganic polymeric composites", I.A. David, M.A. Harmer, J.S. Meth, and G.W. Scherer, U.S. Pat 5,252,654 (Oct. 12, 1993)
10. "Method of protecting concrete from freeze damage", G.W. Scherer, J. Chen, and J. Valenza, U.S. Pat 6,485,560 (Nov. 26, 2002)

Articles:

1. "A Study of Quartz Melting", G. W. Scherer, P. J. Vergano, D. R. Uhlmann, *Physics and Chemistry of Glasses* **11** [3] (1970) 53-58
2. "Crystallization Behavior and Glass Formation of Selected Lunar Compositions", G. W. Scherer, R. W. Hopper, D. R. Uhlmann, pp. 2627-2637 in *Proceedings of Third Lunar Science Conference (Supp. 3, Geochimica et Cosmochimica Acta)* Vol. 3, MIT Press 1972
3. "Crystallization Behavior of α -Phenyl o-Cresol", G.W. Scherer, *J. Crystal Growth* **15** (1972) 1-10

4. "Viscous Flow and Crystallization Behavior of Selected Lunar Compositions", M. Cukierman, L. Klein, G. W. Scherer, R. W. Hopper, D. R. Uhlmann, pp. 2685-2696 in Proceedings of the Fourth Lunar Science Conference (Supp. 4, Geochimica et Cosmochimica Acta) Vol. 3 (Pergamon Press, 1973)
5. "Viscous Flow, Crystallization Behavior and Thermal History of Orange Soil Material", D. R. Uhlmann, M. Cukierman, G. W. Scherer, R. W. Hopper, American Geophysical Union **54** [6] (1973) 617-618.
6. "Crystallization Behavior of High Purity o-Terphenyl", G. W. Scherer, D. R. Uhlmann, C. E. Miller, K. A. Jackson, J. Crystal Growth **23** (1974) 323-330
7. "Crystallization Statistics, Thermal History and Glass Formation", R. W. Hopper, G. W. Scherer, D. R. Uhlmann, J. Non-Cryst. Solids **15** (1974) 45-62
8. "Crystallization Kinetics of $\text{Na}_2\text{O}-3\text{SiO}_2$ ", G. W. Scherer, D. R. Uhlmann, J. Crystal Growth **29** (1975) 12-18
9. "Crystal Nucleation in Normal Alkane Liquids", D. R. Uhlmann, G. Kritchevsky, R. Straff, G. W. Scherer, J. Chemistry and Physics **62** [12] (1975) 4896-4903
10. "Diffusion Controlled Crystal Growth of Dendrite Arrays", G. W. Scherer, D. R. Uhlmann, J. Crystal Growth **30** (1975) 304-10
11. "Effects of Phase Separation on Crystallization Behavior", G. W. Scherer, D. R. Uhlmann, J. Non-Cryst. Solids **21** (1976) 199-213
12. "Diffusion Controlled Crystal Growth in $\text{K}_2\text{O}-\text{SiO}_2$ Compositions", G. W. Scherer, D. R. Uhlmann, J. Non-Cryst. Solids **23** (1977) 59-80
13. "Sintering of Low Density Glasses: I. Theory," G. W. Scherer, "II. Experimental Study," G. W. Scherer, D. L. Bachman, "III. Effect of a Distribution of Pore Sizes", G. W. Scherer, J. Am. Ceram. Soc. **60** [5-6] (1977) 236-246
14. "Thermal Stresses in a Cylinder: Application to Optical Waveguide Blanks", G. W. Scherer, J. Non-Cryst. Solids **34** (1979) 223-238
15. "Sintering Inhomogeneous Glasses: Application to Optical Waveguides", G. W. Scherer, J. Non-Cryst. Solids **34** (1979) 239-256
16. "A Simplified Model for Glass Formation", D. R. Uhlmann, P.I.K. Onorato, G. W. Scherer, Proceedings Lunar Science Conference 10th (1979) 375-381
17. "Stress-Induced Index Profile Distortion in Optical Waveguides", G. W. Scherer, Applied Optics **19** [12] (1980) 2000-2006
18. "Thermal Stresses in Clad-Glass Fibers", G. W. Scherer and A. R. Cooper, J. Am. Ceram. Soc. **63** [5-6] (1980) 346-347
19. "Stress-Optical Effects in Optical Waveguides", G. W. Scherer, J. Non-Cryst. Solids **38-39** (1980) 201-204
20. "Stress in Optical Waveguide Fibers", G. W. Scherer and A. R. Cooper, pp. 193-203 in Advances in Ceramics, Volume II, Physics of Fiber Optics, ed. B. Bendow and S. Mitra, (Am. Ceram. Soc., Inc., Columbus, Ohio, 1981)
21. "Model of Structural Relaxation in Glass with Variable Coefficients", G. W. Scherer and S. M. Rekhson, J. Am. Ceram. Soc. **65** [6] (1982) C94-C96
22. "Viscoelastic-Elastic Composites: I, General Theory", G. W. Scherer and S. M. Rekhson, J. Am. Ceram. Soc. **65** [7] (1982) 352-360
23. "Viscoelastic-Elastic Composites: II, Sandwich Seal", G. W. Scherer and S. M. Rekhson, J. Am. Ceram. Soc. **65** [8] (1982) 399-406

24. "Viscoelastic-Elastic Composites: III, Bead Seal", S. M. Rekhson and G. W. Scherer, *J. Am. Ceram. Soc.* **65** [9] (1982) 419-425
25. "Dilatational Relaxation in Cylindrical Seals", G. W. Scherer, *J. Am. Ceram. Soc.* **65** [10] (1982) 491-496
26. "Thermal Stresses in Optical Fibers: Fluid Core Assumption", G. W. Scherer, *J. Non-Cryst. Solids* **51** (1982) 323-332
27. "Glass Transition as a Function of Cooling Rate", S. M. Rekhson and G. W. Scherer, *J. de Physique* **43** [12] (1982) C9-427-430
28. "Viscoelastic Analysis of Glass-to-Glass Sandwich Seals", G. W. Scherer, *J. de Physique* **43** [12] (1982) C9- 443-446
29. "Unusual Methods of Forming Glass", G. W. Scherer and P. C. Schultz in Glass Science and Technology, Vol. 1, eds. D. R. Uhlmann and N. Kreidl (Academic Press, New York 1983)
30. "Viscoelastic Analysis of Thermal Stresses in a Composite Sphere", G. W. Scherer, *J. Am. Ceram. Soc.* **66** [1] (1983) 59-65
31. "Viscoelastic Analysis of the Split Ring Seal", G. W. Scherer, *J. Am. Ceram. Soc.* **66** [2] (1983) 135-139
32. "Viscoelastic Thermal Stress Analysis", G. W. Scherer, *J. Non-Cryst. Solids* **54** (1983) 223-240
33. "Relationships Between the Sol-to-Gel and Gel-to-Glass Conversions", C. J. Brinker and G. W. Scherer, pp 43-59 in Ultrastructure Processing of Ceramics, Glasses, and Composites, (John Wiley and Sons, New York, 1984)
34. "Glasses from Colloids", G. W. Scherer and J. C. Luong, *J. Non-Cryst. Solids* **63** (1984) 163-172
35. "Use of the Adam-Gibbs Equation in the Analysis of Structural Relaxation", G. W. Scherer, *J. Am. Ceram. Soc.* **67** [7] (1984) 504-511
36. "Glasses and Ceramics from Colloids", G. W. Scherer, pp. 205-211 in Better Ceramics Through Chemistry (Elsevier Sci. Pub. Co., New York 1984)
37. "A Comparison Between the Densification Kinetics of Colloidal and Polymeric Silica Gels", C. J. Brinker, W. D. Drotning, and G. W. Scherer, pp. 25-32 in Better Ceramics Through Chemistry (Elsevier Sci. Pub. Co., New York, 1984)
38. "The Role of Water in Densification of Gels", T. A. Gallo, C. J. Brinker, L. C. Klein, and G. W. Scherer, pp. 85-90 in Better Ceramics Through Chemistry (Elsevier Sci. Pub. Co., New York, 1984)
39. "Viscous Sintering of a Bimodal Pore Size Distribution", G. W. Scherer, *J. Am. Ceram. Soc.* **67** [11] (1984) 709-715
40. "Viscous Sintering on a Rigid Substrate", G. W. Scherer and T. Garino, *J. Am. Ceram. Soc.* **68** [4] (1985) 216-220
41. "Sol-Gel-Glass: I. Gelation and Gel Structure", C. J. Brinker and G. W. Scherer, *J. Non-Cryst. Solids* **70** (1985) 301-322
42. "Sol-Gel-Glass: II. Physical and Structural Evolution During Constant Heating Rate Experiments", C. J. Brinker, G. W. Scherer, and E. P. Roth, *J. Non-Cryst. Solids* **72** (1985) 345-368
43. "Sol-Gel-Glass: III. Viscous Sintering", G. W. Scherer, C. J. Brinker, and E. P. Roth, *J. Non-Cryst. Solids* **72** (1985) 369-389
44. "Structural Evolution during the Gel-to-Glass Conversion", C. J. Brinker, E. P. Roth, G. W. Scherer, and D. R. Tallant, *J. Non-Cryst. Solids* **71** (1985) 171-185

45. "Viscoelastic Analysis of Stresses in Composites", G. W. Scherer and S. M. Rekhson, pp. 245-318 in Treatise on Materials Science and Technology: Glass IV (Academic Press, New York, 1985)
46. "Stress in Leached Phase-Separated Glass", G. W. Scherer and M. G. Drexhage, *J. Am. Ceram. Soc.* **68** [8] (1985) 419-426
47. "Glasses and Ceramics from Colloids", G. W. Scherer, *J. Non-Cryst. Solids* **73** (1985) 661-667
48. "Comment on 'Dehydration of Gels and Glasses in the Systems B₂O₃-SiO₂ and ZrO₂-SiO₂ Prepared by the Sol-Gel Process from Metal Alkoxides'", C. Jeffrey Brinker and George W. Scherer, *J. Am. Cer. Soc.* **69** [1] (1986) C12-C14
49. "Structural Relaxation in Gel-Derived Glasses", G. W. Scherer, C. J. Brinker, and E. P. Roth, *J. Non-Cryst. Solids* **82** (1986) 191-197
50. "Relationships Between the Sol to Gel and Gel to Glass Conversions: Structure of Gels During Densification", C. J. Brinker, E. P. Roth, D. R. Tallant, and G. W. Scherer, pp. 37-51 in Science of Ceramic Chemical Processing (John Wiley and Sons, New York, 1986)
51. "Volume Relaxation Far from Equilibrium", G. W. Scherer, *J. Am. Ceram. Soc.* **69** [5] (1986) 374-381
52. "Dilatation of Porous Glass", G. W. Scherer, *J. Am. Ceram. Soc.* **69** [6] (1986) 473-480
53. "Viscous Sintering under a Uniaxial Load", G.W. Scherer, *J. Am. Ceram. Soc.* **69** [9] (1986) C206-C207
54. "Drying Mechanics of Gels", G.W. Scherer, pp. 225-230 in Better Ceramics Through Chemistry II, eds. C.J. Brinker, D.E. Clark, D.R. Ulrich (Mat. Res. Soc., Pittsburgh, PA, 1986)
55. "Drying Gels: I. General Theory", G.W. Scherer, *J. Non-Cryst. Solids* **87** (1986) 199-225 ; "Correction of 'Drying Gels: I. General Theory'", *J. Non-Cryst. Solids* **92** (1987) 375-382
56. "Drying Gels: II. Film and Flat Plate", G.W. Scherer, *J. Non-Cryst. Solids* **89** (1987) 217-238
57. "Structural Evolution of Sol-Gel Glasses", G.W. Scherer, *Yogyo Kyokai-shi* (J. Japanese Ceramic Society) **95** [1] (1987) 21-44
58. "Drying Gels: III. Warping Plate", G.W. Scherer, *J. Non-Cryst. Solids* **91** (1987) 83-100
59. "Drying Gels: IV. Cylinder and Sphere", G.W. Scherer, *J. Non-Cryst. Solids* **91** (1987) 101-121
60. "Drying Gels: V. Rigid Gels", G.W. Scherer, *J. Non-Cryst. Solids* **92** (1987) 122-144.
61. "Viscous Sintering of Inorganic Gels", G.W. Scherer, pp. 265-300 in Surface and Colloid Science, Vol. 14, ed. E. Matijevic (Plenum Publ. Corp., New York, 1987)
62. "Use of a Bimaterial Strip to Predict Expansion Compatibility", G.W. Scherer, *J. Dental Research* **66** (1987) 1340
63. "Sintering with Rigid Inclusions", G.W. Scherer, *J. Am. Ceram. Soc.* **70** [10] (1987) 719-725
64. "Creep and Densification During Sintering of Glass Powder Compacts", M.N. Rahaman, L.C. DeJonghe, G.W. Scherer, R.J. Brook, *J. Am. Ceram. Soc.* **70** [10] (1987) 766-774

65. "Drying Gels: VI. Viscoelastic Plate", G.W. Scherer, *J. Non-Cryst. Solids* **99** (1988) 324-358
66. "Aging and Drying of Gels", G.W. Scherer, *J. Non-Cryst. Solids* **100** (1988) 77-92
67. "On Constrained Sintering: I. Constitutive Model for a Sintering Body", R.K. Bordia and G.W. Scherer, *Acta Metallurgica* **36** [9] (1988) 2393-2397.
68. "On Constrained Sintering: II. Comparison of Constitutive Models", R.K. Bordia and G.W. Scherer, *Acta Metallurgica* **36** [9] (1988) 2399-2409.
69. "On Constrained Sintering: III. Rigid Inclusions", R.K. Bordia and G.W. Scherer, *Acta Metallurgica* **36** [9] (1988) 2411-2416
70. "Syneresis in Silica Gel", G.W. Scherer, pp. 179-186 in Better Ceramics Through Chemistry III, eds. C.J. Brinker, D.E. Clark, D.R. Ulrich (Mat. Res. Soc., Pittsburgh, PA, 1988)
71. "Viscous Sintering with a Pore Size Distribution and Rigid Inclusions", G.W. Scherer, *J. Am. Ceram. Soc.* **71** [10] (1988) C447-C448
72. "Viscoelasticity in Silica Gel", G.W. Scherer, S.A. Pardenek, and R.M. Swiatek, *J. Non-Cryst. Solids* **107** [1] (1988) 14-22
73. "Sintering of Composites: Critique of the Available Analyses", R.K. Bordia and G.W. Scherer, pp. 872-876 in Ceramic Powder Science B, Ceramic Transactions, Vol. 1, eds. G.L. Messing, E.R. Fuller, Jr., H. Hausner (Am. Ceram. Soc., Westerville, OH, 1988)
74. "Drying Gels: VII. Diffusion During Drying", G.W. Scherer, *J. Non-Cryst. Solids* **107** (1989) 135-148
75. "Mechanics of Syneresis: I. Theory", G.W. Scherer, *J. Non-Cryst. Solids* **108** (1989) 18-27
76. "Mechanics of Syneresis: II. Experimental Study", G.W. Scherer, *J. Non-Cryst. Solids* **108** (1989) 28-36
77. "Drying Gels: VIII. Revision and Review", G.W. Scherer, *J. Non-Cryst. Solids* **109** (1989) 171-182
78. "Effect of Shrinkage on Modulus of Silica Gel", G.W. Scherer, *J. Non-Cryst. Solids* **109** (1989) 183-190
79. "The Glass Transition", G.W. Scherer, pp. 254-278 in Glass '89: Survey Papers of XVth Int. Cong. Glass, Leningrad, 1989
80. "Aging of Gels", G.W. Scherer, pp. 153-180 in Sol-Gel Science and Technology, eds. M.A. Aegerter, M. Jafellicci Jr., D.F. Souza, and E.D. Zanotto (World Scientific, New Jersey, 1990)
81. "Drying of Gels", G.W. Scherer, pp. 181-220 in Sol-Gel Science and Technology, eds. M.A. Aegerter, M. Jafellicci Jr., D.F. Souza, and E.D. Zanotto (World Scientific, New Jersey, 1990)
82. "Sintering of Gels", G.W. Scherer, pp. 221-256 in Sol-Gel Science and Technology, eds. M.A. Aegerter, M. Jafellicci Jr., D.F. Souza, and E.D. Zanotto (World Scientific, New Jersey, 1990)
83. "Study of Structural Evolution of Silica Gel Using ^1H and ^{29}Si NMR", A.J. Vega and G.W. Scherer, *J. Non-Cryst. Solids* **111** [2-3] (1989) 153-166
84. "Theory of Drying", G.W. Scherer, *J. Am. Ceram. Soc.* **73** [1] (1990) 3-14
85. "Measurement of Permeability: I. Theory", G.W. Scherer, *J. Non-Cryst. Solids* **113** [2-3] (1990) 107-118
86. "Measurement of Permeability: II. Silica Gel", G.W. Scherer and R.M. Swiatek, *J. Non-Cryst. Solids* **113** [2-3] (1990) 119-129

87. "Stress and Fracture During Drying of Gels", G.W. Scherer, *J. Non-Cryst. Solids* **121** (1990) 104-109
88. "Effect of Aging and pH on the Modulus of Aerogels", H. Hdach, T. Woignier, J. Phalippou, and G.W. Scherer, *J. Non-Cryst. Solids* **121** (1990) 202-205
89. "Theories of Relaxation", G.W. Scherer, *J. Non-Cryst. Solids* **123** (1990) 75-89
90. "Physics of Drying", G.W. Scherer, pp. 561-572 in Ceramic Powder Science III, Ceramic Transactions, Vol. 12 (Am. Ceram. Soc., Westerville, OH, 1990)
91. "Effect of Inclusions on Shrinkage", G.W. Scherer, pp. 503-514 in Better Ceramics Through Chemistry IV, eds. B.J.J. Zelinski, C.J. Brinker, D.E. Clark, and D.R. Ulrich (Mat. Res. Soc., Pittsburgh, PA, 1990)
92. "Mechanical Properties of Silica Alcolgels and Aerogels", T. Woignier, J. Phalippou, H. Hdach, and G.W. Scherer, pp. 1087-1099 in Better Ceramics Through Chemistry IV, eds. B.J.J. Zelinski, C.J. Brinker, D.E. Clark, and D.R. Ulrich (Mat. Res. Soc., Pittsburgh, PA, 1990)
93. "Constitutive Behavior of Sintering Materials", K.R. Mikeska, G.W. Scherer, and R.K. Bordia, *Ceram. Trans.*, **7** (1990) 200-214
94. "Viscous Sintering of Particle-Filled Composites", G.W. Scherer, *Ceramic Bull.*, **70** [6] (1991) 1059-1063
95. "Autoclave Treatment Effect on Silica Alcolgel Structure", M. Pauthe, J.F. Quinson, H. Hdach, T. Woignier, J. Phalippou, and G.W. Scherer, *J. Non-Cryst. Solids*, **130** (1991) 1-7
96. "Cell Models for Viscous Sintering", G.W. Scherer, *J. Am. Ceram. Soc.*, **74** [7] (1991) 1523-1531
97. "Thermal Expansion of Gels: A Novel Method for Measuring Permeability", G.W. Scherer, H. Hdach, and J. Phalippou, *J. Non-Cryst. Solids*, **130** (1991) 157-170
98. "Effect of Inclusions on Viscous Sintering", G.W. Scherer and A. Jagota, pp. 99-109 in Advanced Composite Materials, Ceramic Transactions Vol. **19** (Am. Ceram. Soc., Columbus, OH, 1991)
99. "Glass Formation and Relaxation", G.W. Scherer, pp. 119-173 in Materials Science and Technology, Vol. 9: Glasses and Amorphous Materials, ed. J. Zarzycki (VCH, Weinheim, Germany, 1991)
100. "Bending of Gel Beams: method of characterizing mechanical properties and permeability", G.W. Scherer, *J. Non-Cryst. Solids*, **142** [1-2] (1992) 18-35
101. "Drying of Ceramics Made by Sol-Gel Processing", G.W. Scherer, pp. 92-113 in Drying '92 Part A, ed. A.S. Mujumdar (Elsevier, Amsterdam, 1992)
102. "Crack-tip stress in gels", G.W. Scherer, *J. Non-Cryst. Solids* **144** (1992) 210-216
103. "Stress Development During Supercritical Drying", G.W. Scherer, *J. Non-Cryst. Solids* **145** (1992) 33-40
104. "Mechanics of Gels", G.W. Scherer, pp. 527-533 in Better Ceramics Through Chemistry V, eds. M.J. Hampden-Smith, W.G. Klemperer, and C.J. Brinker (Mat. Res. Soc., Pittsburgh, PA, 1992)
105. "Recent Progress in Drying of Gels", G.W. Scherer, *J. Non-Cryst. Solids* **147&148** (1992) 363-374

106. "Evolution of Mechanical Properties during the Alcolgel-Aerogel-Glass Process", T. Woignier, J. Phalippou, G. Larnac, F. Pernot, G.W. Scherer, J. Non-Cryst. Solids **147&148** (1992) 672-680
107. "Constitutive Models for Viscous Sintering", G.W. Scherer, pp. 1-18 in Mechanics of Granular Materials and Powder Systems, ed. M.M. Mehrabadi (ASME, New York, 1992)
108. "Physics of Drying", pp. 179-199 in Ultrastructure Processing of Advanced Materials, eds. D.R. Uhlmann and D.R. Ulrich (Wiley, New York, 1992)
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