

Studies on VIP			
no.	Title	Authors	Journal
1	Improving the extinction properties of an evacuated high temperature powder insulation	R. Caps, J. Fricke, H. Reiss	High Temp. High Press. 15, 225-232, 1983
2	Spectral transmission and reflection properties of high temperature insulation materials	R. Caps, A. Trunzer, D. Büttner, J. Fricke	Int. J. Heat Masse Transfer, 27, 1865-1872, 1984
3	Spectral transmission and reflection properties of high temperature insulation materials and their relation to radiative heat flow	R. Caps, A. Trunzer, D. Büttner, J. Fricke, H. Reiss	Thermal Conductivity 18, 403-411, 1985
6	Determination of the radiative heat transfer in transparent silica aerogel	R. Caps, J. Fricke	Int. J. Solar Energy 3, 13-18, 1984
7	Apparent thermal conductivity of evacuated SiO ₂ -aerogel tiles under variation of radiative boundary conditions	P. Scheuerpflug, R. Caps, D. Büttner, J. Fricke	Int. J. Heat Mass Transfer 28, 2299-2306, 1985
8	Radiative heat transfer in anisotropically scattering fiber insulations	R. Caps, J. Fricke	High Temp. - High Press. 17, 303-308, 1985
9	Radiative transport in CVD-coated thin fibers	G.Schmaderer, G. Wahl, J. Demny, J. Reiss, R. Caps	presentation 6th European Conference on Chemical Vapour Deposition, Jerusalem, Israel, 29 March - 3 April 1987
12	Radiative heat transfer in silica aerogel	R. Caps, J. Fricke	1. ISA, International Symposium on Aerogels, Würzburg, Germany, "Aerogels", 110-115, 1986
13	Thermal conductivity of SiO ₂ -aerogel tiles	D. Büttner, R. Caps, U. Heinemann, E. Hümmer, A. Kadur, P. Scheuerpflug, J. Fricke	1. ISA, in: "Aerogels", J. Fricke (Ed.), Springer Heidelberg, New York 104-109, 1986
16	Thermal loss coefficients of monolithic and granular aerogel systems	J. Fricke, R. Caps, D. Büttner, U. Heinemann, E. Hümmer, A. Kadur	SPIE 653, Optical Materials Technology for Energy Efficiency and Solar Energy Conversion, 64-69, 1986
17	Experimental investigation of extinction properties and thermal conductivity of metal-coated dielectric fibers in vacuum	H. Reiss, F. Schmaderer, G. Wahl, B. Ziegenbein, R. Caps	Proc. AIAA 20th Thermophys. Conf. Williamsburg, paper no. 85-100, 1985
19	Investigation of solid thermal conduction in evacuated load-bearing fibrous insulations	D. Büttner, G. Löffler, R. Caps, J. Fricke	High Temp. High Press. 18, 537-543, 1986
20	Radiative heat transfer in thermal insulations of low optical density	R. Caps, K. Baumeister, J. Fricke	High Temp. High. Press. 18, 589-597, 1986
21	Thermal loss coefficients of monolithic and granular aerogel systems	J. Fricke, R. Caps, D. Büttner, U. Heinemann, E. Hümmer, A. Kadur	Solar Energy Materials 16, 267-274, 1987
22	Thermal loss coefficients of low density aerogel tiles	D. Büttner, R. Caps, U. Heinemann, E. Hümmer, A. Kadur, J. Fricke	Solar Energy 40, 13-15, 1988
25	Optically thin fibrous insulations	J. Fricke, R. Caps, E. Hümmer, G. Döll. M.C. Arduini, F. de Ponte	in: Insulation Materials, Testing and Applications, ASTM STP 1030, pp. 575-586, 1990

26	Solid conductivity of loaded fibrous insulations	J. Fricke, D. Büttner, R. Caps, J. Gross, O. Nilsson	ASTM STP 1030, Insulation Materials, Testing and Applications, 66-78, 1990
27	Structural, elasto-mechanical and thermal properties of silica aerogels	J. Fricke, R. Caps, D. Büttner, U. Heinemann, E. Hümmer, G. Reichenauer	in: Characterization of Porous Solids, K.K. Unger et al. (Editors) Elsevier Science, Publishers 1988, 629-634
29	Silica aerogel - a light transmitting thermal superinsulator	J. Fricke, R. Caps, D. Büttner, U. Heinemann, E. Hümmer	J. Non-Cryst. Solids 95&96, 1167-1174, 1987
30	Aerogels - a fascinating class of porous solids	J. Fricke, R. Caps	1987
33	Optimization of transparently covered fibrous insulations	R. Caps, J. Fricke	presentation 2nd Int. Workshop, Freiburg, Germany, 1988
34	Heat transfer in thermal insulation - recent progress in analysis	J. Fricke, R. Caps	Int. J Thermophysics, 9, 885-895, 1988
35	Fibrous Insulations with transparent cover for passive use of solar energy	R. Caps, J. Fricke	Int. J. Thermophysics, 10, 493-504, 1989
37	Thermal transport in monolithic silica aerogel	R. Caps, G. Döll, J. Fricke, U. Heinemann, J. Hetfleisch	Revue de Physique Appliquée, C4, Supplement au no 4, Tome 24, avril 1989, C4 113 -118
38	Heat transfer in load-bearing diatomite powder insulation	K.-G. Degen, E. Hümmer, R. Caps, J. Fricke	High Temp. High Press. 20, 593-598, 1988
39	Scattering of visible light from silica aerogels	A. Beck, R. Caps, J. Fricke	J. Pjys. D: Appl. Phys. 22 730-734, 1989
40	Load-bearing evacuated fibrous superinsulations - improvements with peg-support and metal-coated fibers	J. Fricke, D. Büttner, R. Caps, D. Döll, E. Hümmer, A. Kreh, H. Reiss	Thermal Conductivity 20, 3-11, 1989
41	Silica aerogel - a light transmitting thermal superinsulator	U. Heinemann, E. Hümmer, D. Büttner, R. Caps, J. Fricke	High Temp. High Press, 18, 517-526, 1986
42	Infrared radiative heat transfer in highly transparent silica aerogel	R. Caps, J. Fricke	Solar Energy 36, 361-364, 1986
44	Thermal conductivity of evacuated transparent silica aerogel tiles	D. Büttner, R. Caps, J. Fricke	High Temp. High Press. 17, 375-380, 1985
49	Optimierung von Kälteschutzkleidung	R. Caps	Physik in unserer Zeit, 55-60, Nr. 2-1990
50	Optimierung der Wärmeisolation von Polyester-Vliesstoffen	R. Caps, K.-H. Umbach	Melliand Textilberichte 71, 440-445, 1990
53	Infrared-radiation screens with very thin metallised glass fibres	H.-P. Ebert, M.-C. Arduini-Schuster, J. Fricke, R. Caps, H. Reiss	High Temp. - High Press. 23, 143-148, 1991
54	Infrared-optical properties of feathers and downs	M.-C. Arduini-Schuster, H.-P. Ebert, J. Fricke, R. Caps	High Temp. - High Press. 23, 135-142, 1991
55	Improved thermal radiation extinction in metal coated polypropylen microfibers	R. Caps, M.-C. Arduini-Schuster, H.-P. Ebert, J. Fricke	Int. J. Heat Mass Transfer 36, 2789-2794, 1993

56	Untersuchungen an hochwirksamen Wärmedämmungen für Warmwasserspeicher, Heizkessel und Kühlzellen	T. Rettelbach, R. Caps, J. Fricke	Statusbericht Thermische Energiespeicherung, BMFT-Statusseminar 25.-26. Mai 1993, 205-209
57	Evacuated multilayer foil insulations - minimization of heat transfer	K.-G. Degen, S. Rossetto, R. Caps, J. Fricke	Thermal Conductivity 22, 401-410, 1994
58	Optimization of inorganic and organic fibers for maximal thermal radiation extinction	R. Caps, H.-P. Ebert, M.-C. Arduini-Schuster, J. Fricke	Thermal Conductivity 22, 725-735, 1994
59	Infrared-optical transmission and reflection measurements on loose powders	J. Kuhn, S. Korder, M.-C. Arduini-Schuster, R. Caps, J. Fricke	Rev. Sci. Instrum. 64, 2523-2530, 1993
60	Nanostructured engineering of organic aerogels	R.W. Pekala, C.T. Alviso, X.Lu, R. Caps, J. Fricke	Presentation American Chemical Society Meeting, Chicago, Il, Aug. 20-25 1995, UCRL-JC-120282 preprint
61	Radiation-conduction interaction: an investigation on silica aerogels	U. Heinemann, R. Caps	Int. J. Heat Mass Transfer 39, 2115-2130, 1996
62	Correlation between structure and thermal conductivity of organic aerogels	X. Lu, R. Caps, J.Fricke, C.T. Alviso, R.W. Pekala	J. Non-Cryst. Solids 188, 226-234, 1995
63	Evacuatable guarded hot plate for thermal conductivity measurements between -200 °C and 800 °C	U. Heinemann, J. Hetfleisch, R. Caps, J. Kuhn, J. Fricke	Advances in Thermal Insulation, Proc. of Eurtotherm Seminar no. 44 18-20 October 1995, Espinho, Portugal, 155-164
65	Thermal Conductivity of Spun Glass Fibers as Filler Material for Vacuum Insulations	R. Caps, J. Hetfleisch, Th. Rettelbach, J.Fricke	Thermal Conductivity 23, 373-381, 1996
66	Thermal conductivity of polyimide foams	R. Caps, U. Heinemann, J. Fricke, K. Keller	Int. J. Heat Mass Transfer 40, 269-280, 1997
67	ZAE Glassfacade System	A. Beck, R. Caps, G. Gertner, J. Fricke	4th Europ. Conf. Solar Energy in Architecture and Urban Planing, 26-29 March 1996, Berlin
68	Low density insulations for thermal control in planetary environments at moderate gas pressures	W.P. Fischer, K. Eckert, R. Caps, K. Keller	ICES 1996
69	Aerogels- open-pored nanostructured insulation materials	H.-P. Ebert, R. Caps, U. Heinemann, J. Fricke	Int. Symp. on molecular and microscale heat transfer, 545-555, Begell House, Inc. New York 1997
70	Development of vacuum super insulations with glass cover and powder filling	R. Caps, Th. Rettelbach, M. Ehrmantraut, S. Korder, J. Fricke	Insulation Materials: Testing and Applications, Third Volume, STP 1320, 270-282, 1997
71	Quantitative determination of the scattering and absorption coefficients from diffuse reflection and transmittance measurements: application to pharmaceutical powders	T. Burger, J. Kuhn, R. Caps, J. Fricke	Applied Spectroscopy 51, 309-317, 1997

73	Thermal conductivity of opacified powder filler materials for vacuum insulations	R. Caps, J. Fricke	Int. J. Thermophysics, 21, 445-452, 2000
74	Optimization of the thermal radiation extinction of silicon carbide in a silica powder matrix	V. Napp, R. Caps, H.-P. Ebert, J. Fricke	J. Thermal Analysis and Calorimetry 56, 77-85, 1999
76	Switchable Thermal Insulation for Solar Heating	M. Meister, R. Horn, J. Hetfleisch, R. Caps, J. Fricke	Thermal Conductivity 24, 417-426, 1999
78	Vakuumdämmung und Schaltbare Wärmedämmung für die Fassade: Erste Erfahrungsberichte	R. Caps, R. Neusinger, J. Fricke	10. Bauklimatische Symposium Dresden, 27.9.-29.9. 1999, 559-567
79	Evacuatable guarded hot plate for thermal conductivity measurements between -200 °C and 800 °C	U. Heinemann, J. Hetfleisch, R. Caps, J. Fricke	presentation 15. ECTP,
81	Characterization of the pore structure of alumina ceramics by diffuse radiation propagation in the near infrared	J. Manara, R. Caps, F. Raether, J. Fricke	Optics Communications 168, 237-250, 1999
82	In situ measurement of light scattering in porous ceramics during sintering	R. Springer, F. Raether, R. Caps, J. Manara	High Temp. High Press. 32, 385-390, 2000
83	Evacuated insulation panels filled with pyrogenic silica powders: properties and applications	R. Caps, U. Heinemann, M. Ehrmanntraut, J. Fricke	High Temp. High Press. 151-156, 2001
84	Konzepte für den Einsatz von evakuierten Dämmungen bei Passivhäusern	R. Caps, J. Fricke	presentation 4. Passivhaus-Tagung, Kassel, 10./11. März 2000
85	Schaltbare Wärmedämmung zur Sonnenenergienutzung - Prototypen im Langzeitversuch	R. Horn, R. Neusinger, M. Meister, J. Hetfleisch, R. Caps, J. Fricke	presentation 12. Internationales DGS-Sonnenforum, Freiburg, Juli 2000
86	Switchable thermal insulation: results of computer simulations for optimisation in building applications	R. Horn, R. Neusinger, M. Meister, J. Hetfleisch, R. Caps, J. Fricke	High Temp. High Press. 32, 669-675 2000
87	Vakuumdämmung in der Anwendung	R. Caps, H. Schwab, J. Fricke	presentation 5. Passivhaustagung, Böblingen, 16.-18.2. 2001
90	Characterization of the pore structure of ceramics via propagation of light and infrared radiation	J. Manara, R. Caps, J. Fricke	Int. J. Thermophysics, 26, 531-542, 2005
91	Vacuum insulation panels for buildings and technical applications	R. Caps	presentation EPIC conference Lyon 20. 11. 2006
92	Monitoring gas pressure in vacuum insulation panels	R. Caps	presentation 7th Intern. Vacuum Insulation Symposium 2005,
93	Hot box investigations and theoretical assessments of miscellaneous vacuum insulation panel configurations in building envelopes	S. Grynning, B. Jelle, S. Ucslokk, A. Gustavson, R. Baetens, R. Caps, V. Meloesund	J. Building Physics, 2010
94	Quality control of vacuum insulation panels: methods for measuring gas	R. Caps, H. Beyrichen, D. Kraus, S. Weismann	Vacuum 82, 691-699, 2008

95	Vacuum insulation panels in wood frame wall constructions - hot box measurements and numerical simulations	T. Haavi, B. Jelle, A. Gustavsen, S. Grynning, S. Uvslokk, R. Baetens, R. Caps	presentation Material Performance WB11-3
96	Bemessungswerte der Wärmeleitfähigkeit von Vakuumisolationspaneelen	R. Caps	EnEV aktuell - Energieeffizienz Heft II, 2013, 18-20
97	Development of transparent and opaque vacuum insulation panels for energy efficient buildings	E. Kucukpinar, O. Miesbauer, Y. Carmi, M. Fricke, L. Gullberg, Can Erkey, R. Caps, M. Rochefort, A.G. Moreno, C. Delgado, M Kooehl, P. Holdsworth, K. Noller	Energy Procedia 78, 412-417, 2015