

Physikalisch-Technische Bundesanstalt (PTB)

Thermometry Publications

Cryogenic Thermometry

B. Fellmuth: Temperature fixed-points using high-purity superconductors, *Temperature, Its Measurement and Control in Science and Industry*, Vol. 6, J. F. Schooley (ed.), New York, Am. Inst. of Phys., 1992, pp. 233-238

B. Fellmuth, G. Schuster: Thermodynamic Inconsistency of the ITS-90 Below 1,5 K, *Metrologia* 29 (1993) 415-423

G. Schuster, D. Hechtfisher, B. Fellmuth: Thermometry below 1 K, *Rep. Prog. Phys.* 57 (1994) 187-230

H. Luther, K. Grohmann, B. Fellmuth: Determination of thermodynamic temperature and ^4He virial coefficients between 4,2 K and 27,0 K by dielectric constant gas thermometry, *Metrologia* 33 (1996) 341-352

K. Grohmann, H. Luther, B. Fellmuth: Interpolating Dielectric-Constant Gas Thermometry, *BIPM Com. Cons. Thermométrie* 19, 1996, Document CCT/96-24

B. Fellmuth, P. Seifert, H. Rudloff: Realisation of low-temperature fixed-points, *Proceedings of TEMPMEKO '96, 6th International Symposium on Temperature and Thermal Measurements in Industry and Science*, P. Marcarino (ed.), Torino, Levrotto & Bella, 1997, pp. 93-98

B.W. Mangum, P. Bloembergen, M.V. Chattle, B. Fellmuth, P. Marcarino, A.I. Pokhodun: On the International Temperature Scale of 1990 (ITS-90). Part I: Some Definitions, *Metrologia* 34 (1997) 427-429

B.W. Mangum, P. Bloembergen, B. Fellmuth, P. Marcarino, A.I. Pokhodun: On the influence of impurities on fixed-point temperatures, *BIPM Com. Cons. Thermométrie* 20, 1999, Document CCT/99-11

B.W. Mangum, P. Bloembergen, M.V. Chattle, B. Fellmuth, P. Marcarino, A.I. Pokhodun: On the International Temperature Scale of 1990 (ITS-90). Part II: Recommended techniques for comparisons, at the highest level of accuracy, of fixed-point cells used for contact thermometry, *Metrologia* 36 (1999) 79-88

B. Fellmuth, D. Berger, L. Wolber: An international star intercomparison of low-temperature fixed points using sealed triple-point cells, *Proceedings of TEMPMEKO '99, 7th International Symposium on Temperature and Thermal Measurements in Industry and Science*, J.F. Dubbeldam, M.J. de Groot (ed.), Delft, IMEKO / NMi Van Swinden Laboratorium, 1999, pp. 233-238

G. Schuster, A. Hoffmann, D. Hechtfisher, M. Kühne: The Ultra-low Temperature Scale of PTB, *Proceedings of TEMPMEKO '99, 7th International Symposium on Temperature and Thermal Measurements in Industry and Science*, J.F. Dubbeldam, M.J. de Groot (ed.), Delft, IMEKO / NMi Van Swinden Laboratorium, 1999, pp. 129-136

B.W. Mangum, P. Bloembergen, M.V. Chattle, B. Fellmuth, P. Marcarino, A.I. Pokhodun: Optimal realization of the defining fixed points of the ITS-90 that are used for contact thermometry, *BIPM Com. Cons. Thermométrie* 20, 2000, Document CCT/2000-13

G. Schuster, A. Hoffmann, D. Hechtfisher: Realisation of the temperature scale PLTS-2000 at PTB, Braunschweig: PTB, PTB-ThEx-21, ISBN 3-89701-742-3, 2001

- V.A. Maidanov, J. Engert, B. Fellmuth: Thermal Parameters of a Sealed Lambda-Point Cell Developed at PTB. BIPM Com. Cons. Thermométrie 21, 2001, Document CCT/01-01
- B. Fellmuth, D. Head, F. Pavese, A. Szmyrka-Grzebyk, W. Tew: Special Problems When Realising the Triple Point of Hydrogen as a Defining Fixed Point of the ITS-90. Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 403-410
- F. Pavese, M. de Groot, B. Fellmuth, D. Head, Y. Hermier, A. Szmyrka-Grzebyk, L. Zanin: The Project "MULTICELLS" for the development of new temperature standards in the cryogenic range down to 2.18 K by means of sealed cells. Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 759-764
- A.G. Steele, B. Fellmuth, D.I. Head, Y. Hermier, K.H. Kang, P.P.M. Steur, W.L. Tew: CCT-K2: Key Comparison of Capsule-type Standard Platinum Resistance Thermometers from 13.8 K to 273.16 K. Metrologia 39 (2002) 551-571
- B. Fellmuth: State-of-the-art level of accuracy achieved by realising low-temperature fixed points of the ITS-90 using sealed triple-point cells. Proceedings 2003 of the National Conference of Standards Laboratories (NCSL) International Annual Workshop and Symposium, Tampa, FL, NCSL International, 2003, CD-ROM, WWW.NCSLI.org
- B. Fellmuth, J. Engert, A. Hoffmann, B. Thiele-Krivoj, L. Wolber: Realisation and Dissemination of the International Temperature Scales in the Cryogenic Range. Temperatur 2003: Tagung Berlin, 8./9.9.03, VDI-Berichte 1784, Düsseldorf, VDI Verlag GmbH, 2003, ISBN 3-18-091784-9, pp. 31-36
- J. Engert, B. Fellmuth, V.A. Maidanov: High-Precision Realisation of the Lambda Transition of ⁴He as a Temperature Fixed Point. Temperatur 2003: Tagung Berlin, 8./9.9.03, VDI-Berichte 1784, Düsseldorf, VDI Verlag GmbH, 2003, ISBN 3-18-091784-9, pp. 37-42
- B. Fellmuth, D. Hechtfisher, A. Hoffmann: PTB-96: The Ultra-Low Temperature Scale of PTB. Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 71-76
- G. Schuster, A. Hoffmann, D. Hechtfisher, Thermodynamic Consistency of the New Ultra-Low Temperature Scale PLTS-2000, Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 83-88
- D. Hechtfisher, G. Schuster: The Quality of the Curie Law in Platinum-NMR, Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 47-52
- D. Hechtfisher, G. Schuster: Simplifying the Realisation of PLTS-2000 with the Tungsten Superconductive Transition, Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 149-154
- B. Fellmuth, D. Berger, L. Wolber, M. de Groot, D. Head, Y. Hermier, Y. Z. Mao, T. Nakano, F. Pavese, V. Shkraba, A. G. Steele, P. P. M. Steur, A. Szmyrka-Grzebyk, W. L. Tew, L. Wang, D. R. White: An International Star Intercomparison of Low-Temperature Fixed Points Using Sealed Triple-Point Cells. Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 885-890

F. Pavese, B. Fellmuth, D. Head, Y. Hermier, A. Peruzzi, A. Szmyrka-Grzebyk, L. Zanin: "MULTICELLS": A European Project On Cryogenic Temperature Fixed Points In Sealed Cells. *Temperature: Its Measurement and Control in Science and Industry*, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 161-166

J. Engert, B. Fellmuth: ^3He Vapour-Pressure Measurements at PTB. *Temperature: Its Measurement and Control in Science and Industry*, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 113-118

R.L. Rusby, D.I. Head, D. Cousins, H. Godfrin, Yu.M. Bunkov, R.E. Rapp, F. Gay, M. Meschke, C. Lusher, J. Li, A. Casey, Dm. Shvarts, B. Cowan, J. Saunders, V. Mikheev, J. Pekola, K. Gloos, P. Hernandez, S. Triqueneaux, M. de Groot, A. Peruzzi, R. Jochemsen, A. Chinchure, E. van Heumen, G.E. de Groot, W. Bosch, F. Mathu, J. Flokstra, D. Veldhuis, Y. Hermier, L. Pitre, A. Vergé, B. Fellmuth, J. Engert: European Dissemination Of The Ultra-low Temperature Scale, PLTS-2000. *Temperature: Its Measurement and Control in Science and Industry*, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 89-94

J. Engert, B. Fellmuth, A. Hoffmann: Uncertainty Budget for the Realisation of the Provisional Low Temperature Scale PLTS-2000 at PTB, BIPM Com. Cons. Thermométrie 22, 2003, Document CCT/03-09

J. Engert, B. Fellmuth, A. Hoffmann: Uncertainty Budget for the Realisation and Dissemination of the Provisional Low Temperature Scale PLTS-2000 at PTB. *Proceedings of the 2nd International Seminar and Workshop on Low Temperature Thermometry*, A. Szmyrka-Grzebyk and A. Kowal (ed.), Wrocław, Institute of Low Temperature and Structure Research, Polish Academy of Sciences, 2003, ISBN: 83-906218-5-1, pp. 13-18

J. Engert, B. Fellmuth, A. Hoffmann: Realisation, Dissemination, and Comparison of the ITS-90 and the PLTS-2000 below 1 K at PTB. *Journal of Low Temperature Physics* 134 (1-2) (2004) 425-430

Contact Thermometry

H. Maas, F. Edler, Y.P. Singh: Determination of the Correlation between the Resistance Ratios $W(T_{90})$ for Standard Platinum Resistance Thermometers at Defining Fixed Points of the ITS-90, especially between the Melting Point of Gallium and the Triple Point of Mercury, *Proceedings of TEMPMEKO '93, International Symposium on Temperature and Thermal Measurements in Industry and Science*, 1993, pp. 24-30

F. Edler, H.J. Jung, H. Maas: Platinum versus Palladium Thermocouples: An ITS-90 based Reference Function, *BIPM Com. Cons. Thermometrie* 18, 1993, Document CCT/93-5

D.R. White, R. Galleano, A. Actis, H. Brixy, M. de Groot, J. Dubbeldam, A.L. Reesink, F. Edler, H. Sakurai, R.L. Shepard, J.C. Gallop: The Status of Johnson Noise Thermometry, *Metrologia* 33 (1996) 325-335

F. Edler: Miniature Fixed Points at the Melting Point of Palladium, *Proceedings of TEMPMEKO '96, 6th International Symposium on Temperature and Thermal Measurements in Industry and Science*, P. Marcarino (ed.), Torino, Levrotto & Bella, 1997, pp. 183-188

M.J. de Groot, J.F. Dubbeldam, G.S. Duphia, M.V. Chattle, H. Brixy, F. Edler: Development of a High Temperature Resistance Thermometer Using Noise Thermometry, *Proceedings of TEMPMEKO '96, 6th International Symposium on Temperature and Thermal Measurements in Industry and Science*, P. Marcarino (ed.), Torino, Levrotto & Bella, 1997, pp. 141-146

- B. Fellmuth, E. Tegeler: Realisation and Dissemination of the ITS-90 in the Temperature Range from 0.65 K to 933 K (660 °C), *Temperatur '98: Tagung Berlin*, 16./17.2.98, VDI Berichte 1379, Düsseldorf, VDI Verlag GmbH, 1998, ISBN 3-18-091379-7, pp. 3-12
- F. Edler, M. Kühne, E. Tegeler: Noise Thermometry above 962 °C, *Proceedings of TEMPMEKO '99, 7th International Symposium on Temperature and Thermal Measurements in Industry and Science*, J.F. Dubbeldam, M.J. de Groot (ed.), Delft, IMEKO / NMI Van Swinden Laboratorium, 1999, pp. 394-399
- B. Fellmuth, J. Fischer, E. Tegeler: Uncertainty budgets for characteristics of SPRTs calibrated according to the ITS-90. *BIPM Com. Cons. Thermométrie 21*, 2001, Document CCT/01-02
- F. Edler, M. Gorgieva, J. Hartmann, M. Wagner: Comparison of Different Methods for the Determination of Undisturbed Surface Temperatures, *Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science*, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 1105-1110
- S. Friederici, E. Tegeler: Traceable Calibration of Thermometers Using Temperature Block Calibrators, *TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science*, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 1025-1030
- G. Neuer, J. Fischer, F. Edler, R. Thomas: Comparison of temperature measurement by noise thermometry and radiation thermometry, *Measurement 30* (2001) 211-221
- H.G. Nubbemeyer, J. Fischer: Final report on key comparison CCT-K4 of local realisations of aluminium and silver freezing-point temperatures, *Metrologia 39* (2002) Techn. Suppl. 03001
- B.W. Mangum, G.F. Strouse, W.F. Guthrie, R. Pello, M. Stock, E. Renaot, Y. Hermier, G. Bonnier, P. Marcarino, K.S. Gam, K.H. Kang, Y.-G. Kim, J.V. Nicholas (deceased), D.R. White, T.D. Dransfield, Y. Duan, Y. Qu, J. Connolly, R.L. Rusby, J. Gray, G.J.M. Sutton, D.I. Head, K.D. Hill, A. Steele, K. Nara, E. Tegeler, U. Noatsch, D. Heyer, B. Fellmuth, B. Thiele-Krivoj, S. Duris, A.I. Pokhodun, N.P. Moiseeva, A.G. Ivanova, M.J. de Groot, J.F. Dubbeldam: Summary of Comparison of Realizations of the ITS-90 over the Range 83.8058 K to 933.473 K: CCT Key Comparison 3, *Metrologia 39* (2002) 179-205
- F. Edler, H. Lehmann: Mechanical stability of Pt/Pd thermocouples, *BIPM Com. Cons. Thermométrie 22*, 2003, Document CCT/03-10
- F. Edler, E. Tegeler, E. Zimmermann: Thermodynamic Temperature of the Freezing Point of Copper Measured by Noise Thermometry, *Temperature: Its Measurement and Control in Science and Industry, Vol. 7*, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 13-18
- J.F.N. Santiago, S.G. Petkovic, R.N. Teixeira, U. Noatsch, B. Thiele-Krivoj: Comparison of Fixed Point Realisations between Inmetro and PTB, *Temperature: Its Measurement and Control in Science and Industry, Vol. 7*, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 849-854
- U. Noatsch, E. Tegeler, E. Méndez-Lango: Intercomparison of the Realization of the IST-90 in the Temperature Range -40 °C to 420 °C between CENAM and PTB, *Temperature: Its Measurement and Control in Science and Industry, Vol. 7*, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 855-859

S. Friederici, A. Aulich, E. Méndez-Lango, R. Ramírez-Bazán: Intercomparison of 100 Ω Pt Thermometers of Some Secondary Laboratories of Germany and México (DKD and SNC), Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 861-866

J. Bojkovski, J. Drnovsek, I. Pusnik, D. Heyer, U. Noatsch, B. Thiele-Krivoj: Bilateral Intercomparison of the IST-90 realisations in the Range from -189.342 °C (Triple Point of Argon) to 961.78 °C (freezing Point of Silver) between the MIRS/FE-LMK (Slovenia) and the PTB (Germany), Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 867-872

M. Kalemci, A. Kartal Dogan, S. Ugur, U. Noatsch, E. Tegeler, B. Thiele-Krivoj: A Bilateral Comparison between UME and PTB, Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 873-877

F. Edler, M. Kühne, E. Tegeler: Noise temperature measurements for the determination of the thermodynamic temperature of the melting point of palladium, Metrologia 41 (2004) 47-55

Radiation Thermometry

J. Fischer, H. Jung: Determination of the thermodynamic temperatures of the freezing points of silver and gold by near-infrared pyrometry, Metrologia 26 (1989) 245-252

J. Fischer, Fu Lei, M. Stock: Present State of the Determination of Thermodynamic Temperatures near the Freezing Point of Silver by Absolute Cryoradiometry, Metrologia 28 (1991) 243-246

J. Fischer, M. Stock: A non-contact measurement of radiometric apertures with an optical microtopography sensor, Measure Science and Technology 3 (1992) 693-698

J. Fischer, H.J. Jung, R. Friedrich: A new determination of the freezing temperature of gold relative to that of silver by radiation thermometry, Temperature, Its Measurement and Control in Science and Industry, Vol. 6, J. F. Schooley (ed.), New York, Am. Inst. of Phys., 1992, pp. 53-57

J.E. Martin, H.C. McEvoy, J. Fischer, M. Stock: Comparison of NPL and PTB silver and gold point black bodies using an absolute spectral radiometer, Temperature, Its Measurement and Control in Science and Industry, Vol. 6, J. F. Schooley (ed.), New York, Am. Inst. of Phys., 1992, pp. 59-62

J. Fischer, L. Fu: Photodiode nonlinearity measurement with an intensity stabilized laser as a radiation source, Applied Optics Vol. 32 No. 22 (1993) 4187-4190

R. Friedrich, J. Fischer, M. Stock: Accurate calibration of filter radiometers against a cryogenic radiometer using a trap detector, Metrologia 32 (1995) 509-513

M. Stock, J. Fischer, R. Friedrich, H.J. Jung, B. Wende: The double-heatpipe black body: a high-accuracy standard source of spectral irradiance for measurements of $T-T_{90}$, Metrologia 32 (1995) 441-444

J. Fischer, B. Gutschwager: On the calibration of infrared radiation thermometers against heatpipe blackbodies at temperatures below the freezing point of silver, Proceedings of TEMPMEKO '96, 6th International Symposium on Temperature and Thermal Measurements in Industry and Science, P. Marcarino (ed.), Torino, Levrotto & Bella, 1997, pp. 251-256

- M. Stock, J. Fischer, R. Friedrich, H.-J. Jung, B. Wende: Measurement of $T-T_{90}$ in the range from 500 °C to 962 °C by absolute spectral radiometry employing a cryogenic radiometer and a double heatpipe black body, Proceedings of TEMPMEKO '96, 6th International Symposium on Temperature and Thermal Measurements in Industry and Science, P. Marcarino (ed.), Torino, Levrotto & Bella, 1997, pp. 19-24
- F. Sakuma, H. Sakate, B.C. Johnson, C. Gibson, G. Machin, T. Ricolfi, M. Battuello, J. Fischer, H.-J. Jung: International comparison of radiation temperature scales among five national metrological laboratories using a transfer standard radiation thermometer, Metrologia 33 (1996) 241-248
- J. Fischer, J. Hartmann: Calibration of tungsten strip lamps as transfer standards for temperature, Proceedings of TEMPMEKO '99, 7th International Symposium on Temperature and Thermal Measurements in Industry and Science, J.F. Dubbeldam, M.J. de Groot (ed.), Delft, IMEKO / NMi Van Swinden Laboratorium, 1999, pp. 561-566
- B. Gutschwager, J. Fischer: An InGaAs radiation thermometer with an accurate reference function as transfer standard from 150 °C to 960 °C, Proceedings of TEMPMEKO '99, 7th International Symposium on Temperature and Thermal Measurements in Industry and Science, J.F. Dubbeldam, M.J. de Groot (ed.), Delft, IMEKO / NMi Van Swinden Laboratorium, 1999, pp. 567-572
- J. Hartmann, D. Taubert, J. Fischer: Characterization of the double-heatpipe blackbody LABB for use at temperatures below 500 °C, Proceedings of TEMPMEKO '99, 7th International Symposium on Temperature and Thermal Measurements in Industry and Science, J.F. Dubbeldam, M.J. de Groot (ed.), Delft, IMEKO / NMi Van Swinden Laboratorium, 1999, pp. 511-516
- J. Fischer: Developments in infrared radiation thermometry, Proceedings of TEMPMEKO '99, 7th International Symposium on Temperature and Thermal Measurements in Industry and Science, J.F. Dubbeldam, M.J. de Groot (ed.), Delft, IMEKO / NMi Van Swinden Laboratorium, 1999, pp. 27-34
- J. Fischer, F. Sakuma, H. Sakate, G. Machin, C. Gibson, B.C. Johnson: Second Intercomparison of Radiation Temperature Scales among four National Metrological Laboratories using a Transfer Standard Radiation Thermometer, Proceedings of TEMPMEKO '99, 7th International Symposium on Temperature and Thermal Measurements in Industry and Science, J.F. Dubbeldam, M.J. de Groot (ed.), Delft, IMEKO / NMi Van Swinden Laboratorium, 1999, pp. 239-244
- K. Chrzanowski, J. Fischer, R. Matyszekiel: Testing and evaluation of thermal cameras for absolute temperature measurement, Optical Engineering 39 (9) (2000) 2535-2544
- J. Hartmann, J. Fischer, J. Seidel: A non-contact technique providing improved accuracy in area measurements of radiometric apertures, Metrologia 37(2000) 637-640
- L. Werner, J. Fischer, U. Johannsen, J. Hartmann: Accurate determination of the spectral responsivity of silicon trap detectors between 238 nm and 1015 nm using a laser-based cryogenic radiometer, Metrologia 37 (2000) 279-284
- K. Chrzanowski, R. Matyszekiel, J. Fischer, J. Barela: Uncertainty of temperature measurement with thermal cameras, Optical Engineering 40 (6) (2001) 1106-1114
- J. Hartmann, J. Fischer, U. Johannsen, L. Werner: Analytical model for the temperature dependence of the spectral responsivity of silicon, Journal of the Optical Society of America B Vol. 18 No. 7 (2001) 942-947
- J. Hartmann: Advanced comparator method for measuring ultra-small aperture areas, Measure Science and Technology 12 (2001) 1678-1682

K. Chrzanowski, J. Fischer, K. Firmanty, W. Wrona: Evaluation of thermal cameras, Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 1119-1124

E.W.M. van der Ham, M. Battuello, P. Bloembergen, R. Bosma, S. Claussen, O. Enouf, E. Filipe, J. Fischer, B. Gutschwager, T. Hirvonen, J.H. Holtoug, J. Ivarsson, G. Machin, H. McEvoy, J. Perez, T. Ricolfi, P. Ridoux, M. Sadli, V. Schmidt, C. Staniewicz, O. Struss, T. Weckström: Intercomparison of local temperature scales with transfer radiation thermometers between -50 °C and 300 °C, Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 831-837

J. Hartmann, D.R. Taubert, J. Fischer: Measurement of $T-T_{90}$ down to zinc point temperatures with absolute filter radiometry, Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 377-382

J. Hartmann, S. Schiller, R. Friedrich, J. Fischer: Non-isothermal temperature distribution and resulting emissivity corrections for the high temperature blackbody BB3200, Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 227-232

M. Sadli, G. Machin, D. Lowe, J. Hartmann, R. Morice: Realisation and comparison of Metal-Carbon Eutectic Points for radiation thermometry applications and W-Re thermocouple calibration, Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 507-512

J. Fischer, G. Neuer, E. Schreiber, R. Thomas: Metrological characterisation of a new transfer-standard radiation thermometer, Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 801-806

T. Ricolfi, M. Battuello, R. Bosma, E.W.M. van der Ham, J. Fischer, J. Hartmann: Comparison of local realizations of the ITS-90 between 920 °C and 1590 °C at 950 nm using vacuum tungsten-strip lamps as transfer standards, Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 839-844

B.B. Khlevnoy, V. Khromchenko, M. Samoylov, V. Sapritsky, N. Harrison, P. Sperfeld, J. Fischer: Determination of the temperatures of metal-carbon eutectic fixed-points by different detectors from VNIIOFI, NPL and PTB, Proceedings of TEMPMEKO 2001, 8th International Symposium on Temperature and Thermal Measurements in Industry and Science, B. Fellmuth, J. Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH, 2002, ISBN 3-8007-2676-9, pp. 845-850

G. Machin, G. Benynon, F. Edler, S. Fourrez, J. Hartmann, D. Lowe, R. Morice, M. Sadli, M. Vill: HIMERT: A Pan-European project for the development of metal-carbon eutectics as temperature standards, Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 285-290

- B.B. Khlevnoy, N.J. Harrison, L.J. Rogers, D.F. Pollard, N. Fox, P. Sperfeld, J. Fischer, R. Friedrich: Intercomparison of radiation temperature measurements over the temperature range 1600 K up to 3300K, *Metrologia* 40 (2002) 39-44
- J. Fischer, M. Battuello, M. Sadli, M. Ballico, Seung Nam Park, P. Saunders, Yuan Zundong, B.C. Johnson, E. van der Ham, Wang Li, F. Sakuma, G. Machin, N. Fox, S. Ugur, M. Matveyev: Uncertainty budgets for realisation of scales by radiation thermometry, *BIPM Com. Cons. Thermométrie* 22, 2003, CCT/03-03
- D. R. Taubert, R. Friedrich, J. Hartmann, J. Hollandt: Improved calibration of the spectral responsivity of interference filter radiometers in the visible and near infrared spectral range at PTB, *Metrologia* 40 (2003) 35-38
- B. Gutschwager, J. Hartmann, J. Hollandt: A novel lens-free high-accuracy InGaAs radiation thermometer for radiation temperatures above 300 °C, *Temperatur 2003: Tagung Berlin, 8./9.9.03, VDI-Berichte 1784, Düsseldorf, VDI Verlag GmbH, 2003, ISBN 3-18-091784-9, pp. 155-162*
- J. Fischer, J. Seidel, J. Hollandt, E. Tegeler: The European Virtual Institute for Thermal Metrology (evitherm), *Temperatur 2003: Tagung Berlin, 8./9.9.03, VDI-Berichte 1784, Düsseldorf, VDI Verlag GmbH, 2003, ISBN 3-18-091784-9, pp. 201–206*
- J. Hartmann, K. Anhalt, J. Hollandt, E. Schreiber, Y. Yamada: Improved thermal stability of the linear pyrometer LP3 for high temperature measurements within the EU-Project HIMERT, *Temperatur 2003: Tagung Berlin, 8./9.9.03, VDI-Berichte 1784, Düsseldorf, VDI Verlag GmbH, 2003, ISBN 3-18-091784-9, pp. 135-141*
- D. R. Taubert, J. Hartmann, J. Hollandt, J. Fischer: Investigation of the Accuracy of the ITS-90 with Reference to Thermodynamic Temperature in the Range from 400 °C up to 600 °C, *Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 7-12*
- P. Bloembergen, Y. Yamada, N. Yamamoto, J. Hartmann: Realizing the High-Temperature Part of a Future ITS with the Aid of Eutectic Metal-Carbon Fixed Points, *Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 291-296*
- H. C. McEvoy, G. Machin, R. Friedrich, J. Hartmann, J. Hollandt: Comparison of the New NPL Primary Standard Ag Fixed-Point Blackbody Source with the Primary Standard Fixed Point of PTB, *Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 909-914*
- J. Fischer, M. Battuello, M. Sadli, M. Ballico, Seung Nam Park, P. Saunders, Yuan Zundong, B.C. Johnson, E. van der Ham, F. Sakuma, G. Machin, N. Fox, Wang Li, S. Ugur, M. Matveyev: Uncertainty Budgets for Realization of ITS-90 by Radiation Thermometry, *Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 631-638*
- M. Battuello, F. Girard, T. Ricolfi, M. Sadli, P. Ridoux, O. Enouf, J. Pérez, V. Chimenti, T. Weckström, O. Struss, E. Filipe, N. Machado, E. van der Ham, G. Machin, H. Mc Evoy, B. Gutschwager, J. Fischer, V. Schmidt, S. Clausen, J. Ivarsson, S. Ugur, A. Diril: The European Project TRIRAT: Arrangements for and Results of the Comparison of Local Temperature Scales with Transfer Infrared Thermometers between 150 °C and 962 °C, *Temperature: Its Measurement and Control in Science and Industry, Vol. 7, D. C. Ripple et al. (ed.), Melville, NY, American Institute of Physics, 2003, pp. 903-908*