

CURRICULUM VITAE

1 PERSONAL DETAILS

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| Full name | Tomasz Aleksander Kowalewski |
| Date of Birth | 25th September, 1947 |
| Place of Birth | Łódź, Poland |
| Citizenship | Polish |
| Married with Teresa Rycerz | 1969 |
| Children | Ingrid 1970 - 2004, son Oskar 1973 |
| Work Address | Institute of Fundamental Technological Research Polish Academy of Science (IPPT PAN) Pawinskiego 5B, PL 02-106 Warszawa, Poland Phone: +48-228269803, Fax: +48-228269815 e-mail: tkowale@ippt.gov.pl http://www.ippt.gov.pl/~tkowale |
| Home Address | Sikorskiego 11 m 81, PL 02-758 Warszawa Phone: +48-224074330, +48-602193472 (mobile) |

2 ACADEMIC QUALIFICATIONS

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| Degrees | M.Sc. in Physics with Dean's Distinction Award, Warsaw University, 1969. Ph.D., Institute of Fundamental Technological Research, Polish Academy of Science (IPPT PAN), Warsaw, 1982. Habilitation, Institute of Fundamental Technological Research, Polish Academy of Science (IPPT PAN), Warsaw, 1995. Title of Professor, President of Poland, 2007. |
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3 APPOINTMENTS

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| Present | Professor, Deputy Director for Research, Institute of Fundamental Technological Research, Polish Academy of Science, Deputy Head of the Department of Mechanics and Physics of Fluids, Warsaw, Poland. |
| 2001 – 2009 | Head of the Department of Mechanics and Physics of Fluids, Institute of Fundamental Technological Research, Polish Academy of Science, Warsaw, Poland. |

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| 1995 – 2001 | Head of the Division of Thermal and Free Surface Flows, Center of Mechanics, Institute of Fundamental Technological Research, Polish Academy of Science (IPPT PAN), Warsaw, Poland. |
| June 1993 – June 1994 | Wissenschaftlicher Mitarbeiter (Senior Research Associate), Max-Planck-Institut für Strömungsforschung, Göttingen, Germany |
| March 1988 – May 1993 | Wissenschaftlicher Mitarbeiter (Senior Research Associate), Institut für Angewandte Mechanik und Strömungsphysik, Georg-August-Universität, Göttingen. |
| Oct. 1985 – Feb. 1988 | Visiting Scholar, research fellowship by Max-Planck-Institut, Göttingen. |
| Sept. 1969 – June 1987 | Asystent (Research Assistant) and Adiunkt (Senior Research Associate), Institute of Fundamental Technological Research, Polish Academy of Science (IPPT PAN), Department of Fluid Mechanics, Warsaw, Poland. |

4 SCHOLARSHIPS

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| Aug. – Sept. 1978 | Visiting scholar at the Delft University, Holland (by Prof. J.A. Steketee). Hot-Wire Anemometry. |
| Nov. – Dec. 1980 | Visiting scholar at the Max-Planck-Institut für Strömungsforschung, Göttingen (by Prof. E.-A. Müller). Investigations of two-phase flow with help of Laser-Doppler-Anemometry. |
| Mar. – June 1982 | Visiting scholar at the Stanford University (by Prof. A. Acrivos). M. Curie-Sklodowska joined Polish-American project on sedimentation and flow of suspensions. |
| Oct. 1985 – Feb. 1988 | Scientific fellowship from the Max-Planck-Society, Institut für Strömungsforschung, Göttingen (by Prof. E.-A. Müller). Experimental modeling of fuel injection and evaporation; fuel film deposition on the walls of engine manifolds. |
| Feb. – Apr. 1993 | Visiting Fellow at the University of New South Wales, School of Mechanical and Manufacturing Engineering. (by Prof. G. de Vahl Davis). Experimental and numerical investigation of the natural convection. |
| Nov. 1993 | Short visit at the Israel Institute of Technology, TECHNION, Dept. of Mechanical Engineering (by Prof. A. Yarin), Haifa, Israel. Investigations of liquid jet instability. |
| Mar. 1995 – Jan. 1996 | Visiting Fellow at the Israel Institute of Technology, Lady Davis Fellowship, TECHNION, Dept. of Aerospace Engineering (by Prof. M. Wolfshtein), Haifa, Israel. Investigations of droplet combustion. Teaching (two semesters course) Advanced Methods in Aerodynamics. |
| April 1997 | Visiting Professor at the University Paris XI (Orsay), lecturing: “Advanced experimental methods in fluid mechanics”. |
| April-May 1998 | Visiting Professor at the University “La Sapienza” and Roma Tre (Rome), application of the PIV method for combustion flow |

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| Nov. 1998 | Short visit at the Israel Institute of Technology, TECHNION, Dept. of Mechanical Engineering (by Prof. G. Hetsroni), Haifa, Israel. Joint project on turbulent flow in the channel |
| March 1999 | Visiting Professor at the University Paris XI (Orsay) |
| 7 months within 1999 - 2002 | Visiting Scholar at the Arizona State University, Joint atmospheric research, VTMX2000 program |
| June 2000 | Short visit at the Israel Institute of Technology, TECHNION, Dept. of Mechanical Engineering (by Prof. G. Hetsroni), Haifa, Israel. Joint project on turbulent flow in the channel |
| October 2001 | Short visit at the Israel Institute of Technology, TECHNION, Dept. of Mechanical Engineering (by Prof. G. Hetsroni), Haifa, Israel. Joint project on turbulent flow in the channel |
| March 2002 | Visiting Professor at the University Paris XI (Orsay) |
| Nov. 2002 | Short visit at the Israel Institute of Technology, TECHNION, Dept. of Aerospace Engineering (by Prof. Y. Levy), Haifa, Israel. Joint 5FP EU project on combustion FLOXCOM |
| March 2003 | Visiting Professor at the University of New South Wales (Sydney) |
| Jan. 2008 | Visiting Professor at the University of New South Wales (Sydney) |

5 RESEARCH EXPERIENCE

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| 1969 – 1985 | Research work at the Institute of Fundamental Technological Research (Warsaw), during the experimental study towards Ph.D. degree on low Reynolds number flow of suspensions; experimental investigations of the jet break-up, modeling of the fibre spinning. |
| 1986 – 1987 | Research work at the Max-Planck-Institut, Evaporation of fuels and retrograde fluids; atomisation of fuels; investigation of natural convection. |
| 1988 – 1991 | Research grants from Deutsche Forschungsgemeinschaft through the University Göttingen: <i>Experimental investigations of the instabilities of the evaporating liquid jets</i> (DFG 201/18) and <i>Dynamic properties of the jets of liquid mixtures</i> (DFG201/20). |
| 1991 – 1993 | |
| 1994 – 1997 | Research grant from Polish Scientific Committee (KBN): <i>Flow pattern selection for natural convection with phase change in a lid cooled cavity</i> (KBN 2P404000107) |
| 1995 – 1996 | 9 months Lady Davis Fellowship, Application of PIV and image processing for diagnostics of flow with combustion, Israel Institute of Technology, TECHNION, Haifa |

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| 1996 – 2010 | Research collaboration (project conjoints) IPPT PAN – LIMSI CNRS, <i>L'étude numérique et expérimentale de la dynamique du gossissement et du décrochement des bulles de vapeur dans le cas de l'ébullition hétérogène</i> |
| 1998 – 2002 | Research collaboration IPPT PAN - TECHNION in framework of Polish Academy of Sciences – Israeli Academy of Sciences agreement, on <i>Turbulent thermal heat transfer in a channel flow</i> |
| Other activities | Nonlinear dynamic of the oscillating droplet; evaporation of droplets; evaporation induced surface instabilities; image processing; high-Speed video imaging; flow visualisation; tracking of tracer particles in the flow; natural convection; convection with phase changes; Particle Image Velocimetry (PIV), liquid crystals thermography (PIT), computational fluid dynamics, micro-fluidics, microPIV, nanofibres. |

6 MAIN RESEARCH TOPICS

Keywords: Fluid mechanics, micro-fluidics, multiphase flow, free surface flow, thermally driven flow, flow with phase changes. Experimental and numerical methods in fluid mechanics.

- Experimental investigations of liquid jet break-up. Evidence of “super” thin liquid bridges between liquid jet and the droplet. Instability of evaporating jets, modeling of droplet and liquid jet evaporation. Evaporation of emulsions [9, 10, 13, 31, 35, 43-45], microflows [116,119,120], nanofibres [103,113].
- Experimental and numerical investigation of nonlinear droplet oscillations. Description of droplet deformation. Development of non-intrusive method to measure dynamic surface tension, measurements of the physical parameters of evaporating surface by oscillating droplet method [11, 18, 20, 21, 25, 26, 36, 37, 40, 42].
- Development of high speed video recording methods based on CCD “frame-transfer” camera and image processor. Application of the method for investigation of droplets and jet instabilities [8, 11, 15, 19, 32].
- Experimental and numerical investigation of natural convection, identification of new flow structures; investigation of natural convection in presence of phase change (freezing) [12, 14, 16, 24, 27, 29, 41, 46-54,67].
- Development of new experimental technique for instantaneous measurement of temperature and velocity two-dimensional fields in thermal flow, based on application of liquid crystal as tracers [7, 14, 29, 34,48,49,89,94,101,102,121].
- Investigations of low Reynolds number two-phase flow in tubes (solid and liquid suspensions). Application of new measuring techniques for measuring velocity and particle concentration, laser doppler and ultrasound doppler anemometry [1-6].

7 EDUCATIONAL EXPERIENCE

Direct supervision of 7 M.Sc. and 3 Ph.D. students graduated at the Georg-August University Göttingen 1985-1994; 3 Ph.D. and 5 M.Sc. students at Warsaw University of Technology, 4 Ph.D students at IPPT PAN.

Graduate course: *Advanced Methods in Aerodynamics* (two semesters) given at TECHNION, Dept. of Aerospace Engineering, 1995-1996.

8 REVIEWER

Journals

Journal of Fluid Mechanics

Physics of Fluids

Archives of Mechanics (member of Editorial Board)

Computer Assisted Mechanics and Engineering Sciences

Journal of Engineering Mathematics (member of Board of Assoc. Referees)

Journal of Heat Mass Transfer

Applied Thermal Engineering

JMEMS

Meccanica

APS PRL

APS PRE

AIChEJ

Machine Graphics Vision

Fluid Dynamics & Materials Processing (member of Editorial Board)

Bulletin of Polish Academy of Sciences (member of Editorial Board)

Int. J. Thermal Scs.

Industrial & Engineering Chemistry Research

Exp. in Fluids

J. Micromechanics and Microengineering

Reviewer of Research grants, professor nomination

National Science Foundation, Grants Committee, Washington, USA

Australian Research Council, Grants Committee, Canberra, Australia

The University of New South Wales, Promotion to Professor, Sydney, Australia

Deutsche Forschungsgemeinschaft (DFG), Grants Committee, Germany.

Israel Science Foundation (ISF), Grants Committee, Israel.

State Scientific Committee (KBN), Grants Committee, Poland.

National Scientific Committee (NCN), Grants Committee, Poland.

9 HONOURS

Scientific Secretary, XVIIIth Symposium on Advanced Problems and Methods in Fluid Mechanics, Sobieszewo (Poland), Sept.1985.

Scientific Secretary, Publication Subcommittee, IUTAM Symposium on Adiabatic Waves in Liquid-Vapour Systems, Göttingen (Germany), Aug. 1989.

Invited paper at 2nd European Fluid Mechanics Conference, Warsaw, September 1994

Invited paper at Euromech Colloquium 355 on Interfacial Instabilities, Paris, September 1996

The Polish Academy of Sciences Award (*Nagroda Wydziału IV PAN*) for research on jets and droplets, December 1996.

International Symposium on Advances in Computational Heat Transfer CHT97, Cesme 1997, member of the Scientific Committee and the expository review lecture.

European Science Foundation project on Applied Mathematics for Industrial Flow Problems, Polish member of the Steering Committee, member of the Scientific Committee, “International AMIF conferences”, 1998, 2000, 2002

International Conference on Computational Heat and Mass Transfer, Cyprus, April 1999, member of the Scientific Committee.

Invited paper at FLUVISU 99, 8me colloque nationale de visualisation et de traitement d’images en mecanique des fluides, Toulouse, June 1999.

Chairman of the Euromech Colloquium 406 “Image processing methods in applied mechanics”, Warsaw, May 1999.

Chairman of the European Science Foundation AMIF Workshop PCC99 “Phase Change with Convection”, Warsaw, June 1999.

Member of the Committee of Mechanics of the Polish Academy of Sciences, 1999 - present

Member of the International Board “Int. Flow Visualization Symposium”, 2000 - present

Member of the Scientific Committee, “International Symposium on Advances in Computational Heat Transfer CHT01”, Australia 2001.

Member of the Scientific Committee and invited paper at “International Symposium on Imaging and Visualization in Transport Phenomena VIM-01”, Antalya, 2002.

Silver Cross Award by President of Poland for scientific achievements, 2002

Coordinator of “Phase Change with Convection”, CISM Advanced School, Udine, 2002.

Secretary General, “International Congress of Theoretical and Applied Mechanics”, Warsaw, 2004.

Member of the XCCC IUTAM, 2004 -

Member of the EFMCC Euromech, 2007 -

Chair of the Fluid Mechanics Division of the Committee of Mechanics PAN, 2007 -

10 PRESENTATIONS AT INTERNATIONAL CONFERENCES

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| Sept. 1977 | XIII Biennale on Adv. Fluid Mechanics | Kortowo, Poland |
| Sept. 1980 | Flow Visualization II | Bochum, Germany |
| Sept. 1981 | XV Biennale on Adv. Fluid Mechanics | Jahranka, Poland |
| August 1984 | 16. IUTAM Congress | Lyngby, Denmark |
| April 1985 | Euromech Colloquium | Cambridge, UK |
| April 1986 | Taylor's 100 Birth. Aniv. Symp. | Cambridge, UK |
| August 1986 | Flow Visualization IV | Paris, France |
| Nov. 1987 | ICALEO | San Diego, USA |
| April 1988 | GAMM | Wien, Austria |
| August 1988 | 17. IUTAM Congress | Grenoble, France |
| August 1989 | IUTAM Symposium on Topol. Fluid. Mech. | Cambridge, UK |
| Sept. 1989 | XIX Biennial on Adv. Fluid Mechanics | Kozubnik, Poland |
| Dec. 1989 | 10 Aust. Fluid Mech. Conf. | Melbourne, Australia |
| August 1991 | 1. Euromech Fluid Mech. Conf. | Cambridge, UK |
| December 1991 | 11. ABCM Mech. Eng. Conf. | San Paulo, Brazil |
| August 1992 | 18. IUTAM Congress | Haifa, Izrael |
| October 1992 | Flow Visualization VI | Yokohama, Japan |
| October 1993 | 1. Japan-Polish Joint Seminar | Tokyo, Japan |
| June 1994 | 2. Japan-Polish Joint Seminar | Pultusk, Poland |
| August 1994 | 10th Int. Heat Transfer Conference | Brighton, UK |
| Sept. 1994 | 2. Euromech Fluid Mech. Conf. | Warszawa, Poland |
| Sept. 1994 | Jap.-Centr. Europe Workshop | Pultusk, Poland |
| June 1995 | Euromech Colloquium 335 | Rome, Italy |
| July 1995 | 3 ICIAM Congress | Hamburg, Germany |
| August 1996 | 19. IUTAM Congress | Kyoto, Japan |
| Sept. 1996 | Euromech Colloquium 355 | Paris, France |
| Dec. 1996 | Heat'96 | Kielce, Poland |
| May 1997 | Advances in Computational Heat Transfer | Cesme, Turkey |
| Sept. 1997 | 3. Euromech Fluid Mech. Conf. | Göttingen , Germany |
| June 1998 | Advanced Computational Methods in Heat Transfer | Cracow , Poland |
| Sept. 1998 | 8th Flow Visualization | Sorrento, Italy |
| October 1998 | AMIF - ESF Conference | San Feliu, Spain |
| May 1999 | Euromech 406 Colloquium | Warszawa, Poland |
| June 1999 | FLUVISU 99 | Toulouse, France |
| June 1999 | PCC99 AMIF-ESF Workshop | Warszawa, Poland |
| August 1999 | Cold-Region Thermal Eng. ISTESCR'99 | Darmstadt, Germany |
| Sept. 1999 | Laser Anemometry Adv. EALA'99 | Rome, Italy |
| August 2000 | 9th Flow Visualization | Edinburg, Scotland |
| August 2000 | 20. IUTAM Congress | Chicago, USA |
| June 2001 | CMEM 2001 | Alicante, Spain |
| Dec. 2001 | 3d ISEH | Tempe (AZ), USA |
| May 2002 | VIM'01 | Belek, Turkey |
| June 2002 | HEAT2002 | Baranow, Poland |
| August 2002 | 12 Heat Transfer Conf. | Grenoble, France |
| October 2002 | Eurotherm 71 | Reims, France |
| June 2003 | Eurotherm 69 | Bistra, Slovenia |
| August 2003 | 5. Euromech Fluid Mech. Conf. | Tuluse, France |
| August 2004 | ICTAM04 | Warsaw, Poland |

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| May 2005 | 4th ICCHMT | Paris-Cachan, France |
| Sept. 2005 | CDMM2005 | Warsaw, Poland |
| June 2006 | 4th ICNMM ASME | Limerick, Ireland |
| June 2006 | 6. Euromech Fluid Mech. Conf. | Stockholm, Sweden |
| Sept. 2006 | 12th Flow Visualization | Goettingen, Germany |
| May 2008 | IUTAM Symp. Modelling Nanomat. and Nanosys. | Aalborg, Danmark |
| June 2008 | 6th ICNMM ASME | Darmstadt, Germany |
| August 2008 | ICTAM 22, IUTAM Congress | Adelaide, Australia |
| Sept. 2008 | 7th Euromech Fluid Mech. Conf. | Manchester, UK |
| Feb. 2009 | GAMM 2009 | Gdansk, Poland |
| June 2009 | ExHFT-7 | Krakow, Poland |
| Sept. 2011 | ETC-13 | Warsaw, Poland |

11 PUBLICATIONS

1. *Experimental determination of filtration coefficients along bunch of fibres (in Polish)*, with W. Kalita, IFTR Reports - Prace IPPT, vol. 28/1976, Warszawa 1976.
2. *Optical method for measuring concentration profiles of droplet suspension flowing through a tube (in Polish)*, IFTR Reports - Prace IPPT, vol. 49/1976, Warszawa 1976.
3. *Velocity profiles of suspension flowing through a tube*, Arch. Mech., **32**, pp. 857-865, 1980.
4. *Laser Doppler measurements of the velocity profiles of concentrated droplet suspensions flowing through a tube*, Bericht 118/1980, Max-Planck-Institut für Strömungsforschung, Göttingen 1980.
5. *Experimental investigation of laminar flow of suspension in channels (in Polish)*, Ph.D. dissertation, IPPT PAN, Warsaw 1982.
6. *Laser method of particles distribution measurements in the flow of suspensions*, in: Flow Visualization II, Bochum 1980, Ed. W. Merzkirch, Hemisphere 1982, pp. 541-546.
7. *Concentration and velocity measurements in the flow of droplet suspensions*, Exp. in Fluids, **2**, pp. 213-219, 1984.
8. *An experimental study of the lateral migration of a droplet in a creeping flow*, with W. Hiller, Exp.in Fluids, **5**, pp. 43-48, 1987.
9. *Simultaneous measurement of temperature and velocity fields in thermal convective flows*, with W. Hiller, in: Flow Visualization IV, Paris 1986, Ed. Claude Veret, Hemisphere 1987, pp. 617-622.
10. *Eine einfache Hochgeschwindigkeitskamera mit CCD- Sensor*, with W. Hiller, Bericht 8/1987, Max-Planck- Institut für Strömungsforschung, Göttingen 1987.
11. *Freistrahlexperimente zum genauen Einsatz der Verdampfungseffekte bei Einspritzung von verschiedenen motorischen Kraftstoffen*, with H. Chaves, H.-D. Speckmann and G.E.A. Meier, Bericht 102/1987, Max-Planck-Institut für Strömungsforschung, Göttingen 1987.
12. *Untersuchung des Verdampfungsverhaltens von Einspritzstrahlen in einem Saugrohrmodell*, with H. Chaves and G.E.A. Meier, Bericht 103/1987, Max-Planck-Institut für Strömungsforschung, Göttingen 1987.

13. *An optical method for surface tension measurements of dispersed liquid droplets*, with W.J. Hiller, in: Proc. of ICALEO'87, 6th Int. Congress on Application of Laser and Electro-Optics, Optical Methods in Flow and Particle Diagnostics, vol. 63. Ed. W. Stevenson, Publ. Laser Institut of America, pp. 106-110, Toledo 1988.
14. *Three-dimensional structures in laminar natural convection in a cubic enclosure*, with W.J. Hiller, St. Koch, Proc. of 1st. Word Conference on Exp. Heat Transfer, Fluid Mech., and Thermodyn., Dubrovnik 1988, ed. R.K. Shah et al., Elsevier Scis. Publ., New York, Amsterdam, London, pp. 722-729, 1988.
15. *Similarity in the behaviour of initially saturated or subcooled liquid jets discharging through a nozzle*, with H. Chaves, Th. Kurschat, G.E.A. Meier, E.A. Müller, Chem. Phys. **126**, pp. 137-143, 1988.
16. *Simultane Erfassung von Temperatur- und Geschwindigkeitsfeldern in einer thermischen Konvektionsströmung mit ungekapselten Flüssigkristalltracern*, with W.J. Hiller, St. Koch, in: 2D-Messtechnik DGLR-Workshop 18-19. Oct. 1988, Markdorf, DGLR-Bericht 88-04, pp. 31 - 39, Bonn 1988.
17. *Application of the frame transfer charge-coupled device for high speed imaging*, with W.J. Hiller, Optical Eng. **28** pp. 197-200, 1989; also in: Proc. 18th Int. Congr. of High Speed Photography and Photonics, 28. Aug.-2. Sept. 1988 Xian China, SPIE Vol. 1032, pp. 763 - 765, Washington 1990.
18. *Three-dimensional structures in laminar natural convection in a cubic enclosure*, with W.J. Hiller, St. Koch, Exp. Thermal and Fluid Sci., **2**, pp. 34-44, 1989.
19. *Surface tension measurements by the oscillating droplet method*, with W.J. Hiller, Physico-Chem. Hydrodynam., **11**, pp. 103-112, 1989.
20. *Optical investigation of oscillating liquid droplets*, with W.J. Hiller, ZAMM **69**(6), pp. 629-630, 1989.
21. *Schnelle Bildaufzeichnung mit CCD-Kameras und gepulsten LEDs - High Speed Image Recording*, with W.J. Hiller, B. Stasicki, Laser und Optoelektronik **21**, pp. 64-67, 1989.
22. *Experimental analysis of free oscillating liquid drops*, with W.J. Hiller, in: Proceedings of the 10th Australasian Fluid Mechanics Conference, University of Melbourne, Dec. 1989, pp. 7.21 -7.24, 1989.
23. *Liquid microjets - a useful tool for the measurement of material properties*, with W.J. Hiller, in: Proc. of the 10th ABCM Mechanical Engineering Conf., Rio de Janeiro (Brasil), Dec. 1989, Eds. M. Hirata et al., pp. 423 - 426, COPPE/UFRJ 1989.
24. *Vergleichende Grunlagenstudie über das Schwingungsverhalten oszillierender Wurzelkanalinstrumente*, with Griesinger H.R., W.J. Hiller, Kreter F., Zahnärztliche Praxis 5, pp. 168-173, 1989.
25. *Vibrationsinduzierte Strömungsfelder und Kavitationseffekte dreier Systeme zur Wurzelkanalaufbereitung im Modellversuch*, with Griesinger H.R., W.J. Hiller, Kreter F., Zahnärztliche Praxis 6, pp. 213-217, 1989.
26. *Experimental and Numerical investigation of natural convection in a cube with two heated side walls*, with W.J. Hiller, St. Koch, G. de Vahl Davis, M. Behnia, in: Proc. of IUTAM symposium on topological fluid mechanics, Cambridge U.K., Aug. 13-18, 1989, pp. 717 - 726, CUP 1990.

27. *Experimental and theoretical investigations of large amplitude oscillations of liquid droplets*, with E. Becker, W.J. Hiller, *J. Fluid Mech.* **231**, pp. 189-210, 1991
28. *Unsteady droplet evaporation* with W.J. Hiller, in: Proc. of 11th ABCM Mech. Eng. Conf. São Paulo (Brasil), Dec. 1991, Ed. Esp. da Revista Brasileira de Ciências Mecânicas São Paulo, pp. 17-20, 1991.
29. *Visualization of 3-D natural convection - comparison with numerical results*, with W.J. Hiller, St. Koch, K. Range, M. Behnia, G. de Vahl Davis, in: Proc. of 11th ABCM Mech. Eng. Conf. São Paulo (Brasil), Dec. 1991, Ed. Esp. da Revista Brasileira de Ciências Mecânicas São Paulo, pp. 21-24, 1991.
30. *Computer-aided discrimination of slow and fast tracer paths*, with H.-H. Bartels-Lehnhoff, W.J. Hiller, *Exp. in Fluids*, **13**, pp. 239-248, 1992; also in: Proceedings of The Sixth International Symposium on Flow Visualisation, Yokohama 1992, Eds. Tanida Y. & Miyashiro H., Springer-Verlag, pp. 873-877, 1992.
31. *Visualisation of 3-D natural convection*, with W.J. Hiller, St. Koch, P. Mitgau, K. Range, *Proceedings of The Sixth International Symposium on Flow Visualisation, Yokohama 1992* Eds. Tanida Y. & Miyashiro H., Springer-Verlag, pp. 674-678, 1992.
32. *Charge-coupled devices in flow visualisation*, with W.J. Hiller, V. Llorach Forner, B. Stückrad, M. Behnia, in: Proceedings of The Sixth International Symposium on Flow Visualisation, Yokohama 1992, Eds. Tanida Y. & Miyashiro H., Springer-Verlag, pp. 695-699, 1992.
33. *Behaviour of small diameter evaporating jets*, with W.J. Hiller, Behnia M., in: Proceedings of the 11th Australasian Fluid Mechanics Conference, University of Tasmania, Hobart, Australia, 14-18. Dec. 1992, pp. 905-908, U.T. 1992.
34. *High speed frame transfer CCD*, with W.J. Hiller, Tatarczyk Th., in: *Proc. 20th Int. Congr. of High Speed Photography and Photonics, 21-25. Sept. 1992 Victoria, Canada*, SPIE Vol. 1801, pp. 595-601, Washington 1993.
35. *Wake patterns of a piston gliding in a rotating circular duct*, with W.J. Hiller, in: Bluff-Body Wakes, Dynamics and Instabilities, IUTAM Symposium, Göttingen, Germany, Sept. 7-11, 1992, Eds. H. Eckelmann et al., Springer-Verlag, pp. 165-169, 1993.
36. *Onset of natural convection in a cube*, with W.J. Hiller, St. Koch, F. Stella, *Int. J. Heat Mass Transfer*, **13**, pp. 3251-3263, 1993.
37. *An experimental study of evaporating small diameter jets*, with W.J. Hiller, M. Behnia, *Physics of Fluids A* **5**, pp. 1883-1890, 1993.
38. *Measurement of dynamic surface tension by the oscillating droplet method*, with B. Stückrad, W.J. Hiller, *Exp. in Fluids*, **15**, pp. 332-340, 1993.
39. *Nonlinear dynamics of viscous droplets*, with E. Becker, W.J. Hiller, *J. Fluid Mech.*, **258**, pp. 191-216, 1994.
40. *Computational and experimental visualisation in heat and mass transfer problems*, with W.J. Hiller and G. de Vahl Davis, in Proc. of the First Japanese-Polish Joint Seminar in Advanced Computer Simulation, Tokyo, Nov. 8-9, 1993, pp. 60-69, Edts. Akiyama, Kleiber, Wolański, University of Tokyo Feb. 1994.
41. *Verfolgung von Teilchen in einer dreidimensionalen Strömung*, with P.M. Mitgau, W.J. Hiller, *ZAMM* **74**(5), pp. T394-396, 1994.

42. *Reduction of nonlinear dynamic systems by phase space analysis*, with E. Becker, U. Brosa, Computer Assisted Mechanics and Eng. Sci., **1**, pp. 39-48, 1994.
43. *Experimental and numerical study of three-dimensional natural convection and freezing in water*, with C. Abegg, G. de Vahl Davis, W.J. Hiller, St. Koch, E. Leonardi, G.H. Yeoh, Proc. of 10th International Heat Transfer Conference, Brighton, England, Edt. G.F. Hewitt, vol.4, pp. 1-6, IChemE 1994.
44. *Nonlinear Oscillations of Viscous Droplets*, with D. Bruhn, Proc. of Japanese-Centr. European Workshop on Adv. Comp. in Eng., Pultusk 1994, pp. 63-68, Edts. Akiyama, Kleiber, IPPT PAN Warszawa 1994.
45. *Experimental research on briquette destruction caused by refraction waves*, with M. Gawor, J. Rysz, A. Smolarski, Archives of Mining Scs., vol. 39, pp. 313-330, 1994.
46. *Selected free surface flow problems - liquid jets and drops*, (in Polish) Habilitation, Prace IPPT PAN 3/1995, pp.1-98, Warszawa 1995.
47. *Experimental investigations of oscillating liquid droplet*, with D. Bruhn, W.J. Hiller, F. Obermeier, ZAMM vol. 76/5, pp.77-78, 1996.
48. *On the separation of droplets from a liquid jet*, Fluid Dynamics Research **17**, pp. 121-145, 1996.
49. *Distribution of particles suspended in 3-d laminar convection flow*, with A. Yarin, W.J. Hiller, St. Koch, Physics of Fluids **8**, pp. 1130-1140, 1996.
50. *Experimental and numerical investigations of natural convection in freezing water*, with A. Cybulski, in Int. Conf. on Heat Transfer with Change of Phase, Mechanics vol. 61 p.II, pp. 7-16, Kielce 1996.
51. *Experimental validation of numerical codes in thermally driven flows*, Prace IPPT PAN 4/1997, pp.1-20, Warszawa 1997.
52. *Natural convection with phase change* (in Polish), with A. Cybulski, Prace IPPT PAN 8/1997, pp.1-58, Warszawa 1997.
53. *Estimation of acoustic streaming: theoretical model, Doppler measurements and optical visualisation*, with A. Nowicki, W. Secomski, J. Wojcik, European J. of Ultrasound **7**, pp. 73-81, 1998.
54. *Experimental validation of numerical codes in thermally driven flows*, in Adv. in Computational Heat Transfer, G. de Vahl Davis, E. Leonardi (eds), Begel House Inc., pp.1-15, New York 1998.
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