



Heat transfer bibliography – Japanese works 2007

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1. Thermal properties

- S.C. Bae, Y. Matsuishi, M. Monde, Effective Thermal conductivity measurement and heat transfer enhancement of metal hydride bed for heat driven type refrigerator, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (2) (2007) 109–116.
- H. Iwashima, K. Yabui, Y. Nagasaka, Viscosity and surface tension measurement by laser-induced capillary wave method (development of technique for solving inverse problem), *Trans. Jpn. Soc. Mech. Eng. B* 73 (733) (2007) 1892–1898.
- A. Kushino, Y. Chen, M. Ohkubo, Thermal conductivity measurements for superconducting mass spectrometry, *Netsu Bussei* (Jpn. J. Thermophys. Prop.) 21 (2) (2007) 81–85.
- N. Matsunaga, M. Hori, A. Nagashima, Gaseous diffusion coefficients of propane and propylene into air, nitrogen and oxygen, *Netsu Bussei* (Jpn. J. Thermophys. Properties) 21 (3) (2007) 143–148.
- S. Miyai, T. Kobayashi, T. Terai, Thermal conductivity of DLC films deposited from methane and acetylene by RF plasma enhanced CVD, *Netsu Bussei* (Jpn. J. Thermophys. Properties) 21 (3) (2007) 131–136.
- N. Miyano, A. Miyano, Study on thermal conductivity of Japanese mud walls, *Netsu Bussei* (Jpn. J. Thermophys. Properties) 21 (4) (2007) 193–199.
- J. Moghadasi, M.M. Papari, F. Yousefi, B. Haghighi, Transport coefficients of natural gases, *J. Chem. Eng. Jpn.* 40 (9) (2007) 698–710 (in English).
- T. Sato, Y. Takaishi, K. Oguchi, Measurements of the viscosity for mixtures of R134a and polyalkyleneglycol oil, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (4) (2007) 315–321.
- I. Taguchi, M. Kurashige, Macroscopic conductivity of uniaxially compacted, sintered balloon aggregates, *J. Therm. Sci. Technol.* 2 (1) (2007) 19–30 (in English).
- H. Tanaka, Y. Okawauchi, T. Tomimura, Viscosity measurements of newtonian liquid by natural convection: part 2: evaluation method by mean temperature of heated vertical plate, *Netsu Bussei* (Jpn. J. Thermophys. Properties) 21 (1) (2007) 36–41.

2. Heat conduction

- M. Akama, C. Yokoya, Performance evaluation of anti-freezing heaters for turnout switch by fem heat transfer analysis, *Trans. Jpn. Soc. Mech. Eng. B* 73 (730) (2007) 1280–1288.
- Y. Ochiai, K. Harada, Axial symmetric stationary heat conduction analysis on functional gradient materials by triple-reciprocity BEM, *Trans. Jpn. Soc. Mech. Eng. B* 73 (735) (2007) 2290–2296.
- S. Satake, Y. Hiroi, N. Masuda, T. Ito, Simulator of two-dimensional steady heat conduction by programmable LSI, *Therm. Sci. Eng.* 15 (2) (2007) 85–90.
- D. Torii, T. Nakano, T. Ohara, Heat conduction in liquids involving many-body potentials (contribution of inter- and intramolecular energy transfer), *Trans. Jpn. Soc. Mech. Eng. B* 73 (734) (2007) 2122–2129.

3. Radiation

- T. Asotani, T. Yamashita, H. Tominaga, Y. Itaya, S. Mori, Radiative heat transfer analysis in ignition of pulverized coal clouds, *Kagaku Kogaku Ronbunshu* (Trans. Chem. Eng. Jpn.) 33 (1) (2007) 26–33.
- N. Yamada, T.S. Saitoh, Proposal of radiation fluxmeter for measurement of asymmetric radiation field, *Trans. Jpn. Soc. Mech. Eng. B* 73 (730) (2007) 1361–1368.

4. Natural convection

- M. Fujii, Enhancement of natural convection heat transfer from a vertical heated plate by using inclined fins, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 247–252.
- N. Himeno, T. Tsuji, A. Kanemaru, M. Nagata, Effects of the distance between heat transfer plates on free convection heat transfer in a stably stratified fluid between vertical plates, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1534–1540.
- T. Kajitani, T. Tsuji, Y. Kojima, K. Sasaki, Velocity and temperature measurements in a turbulent natural convection boundary layer in water, *Trans. Jpn. Soc. Mech. Eng. B* 73 (729) (2007) 1229–1235.
- A. Kitagawa, K. Kosuge, K. Uchida, Y. Hagiwara, Heat transfer enhancement for laminar natural convection due to micro-bubble injection, *Trans. Jpn. Soc. Mech. Eng. B* 73 (732) (2007) 1687–1695.

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- K. Kitamura, F. Kimura, Fluid flow and heat transfer of natural convection over upward-facing, horizontal, heated circular disks, *Trans. Jpn. Soc. Mech. Eng. B* 73 (735) (2007) 2303–2310.
- N. Maruyama, M. Yoshimoto, Y. Kato, S. Kato, Empirical equation of natural convection heat transfer in low-pressure field, *Trans. Jpn. Soc. Mech. Eng. B* 73 (730) (2007) 1323–1330.
- Y. Masuda, A. Suzuki, Y. Mikawa, V. Chani, C. Yokoyama, T. Tsukada, Numerical simulation of hydrothermal autoclave for single crystal growth process, *Therm. Sci. Eng.* 15 (4) (2007) 189–196.
- A. Nishihara, Natural cooling of power converter units for electric trains, *Trans. Jpn. Soc. Mech. Eng. B* 73 (728) (2007) 1052–1058.
- M. Okura, K. Ono, Simulation of natural convection inside and outside a non-adiabatic cubic shell (characteristics of heat transfer during the cooling process), *Therm. Sci. Eng.* 15 (3) (2007) 129–139.
- Y. Shiina, K. Ishikawa, M. Hishida, Natural convection heat transfer in a horizontal porous enclosure with high porosity, *Trans. Jpn. Soc. Mech. Eng. B* 73 (728) (2007) 1045–1051.
- Y. Shiina, M. Hishida, Critical Rayleigh number of natural convection in an anisotropic horizontal porous layer with high porosity, *Trans. Jpn. Soc. Mech. Eng. B* 73 (733) (2007) 1876–1883.
- S. Torii, Effect of a vertical partition plate on the thermal fluid-flow in a rectangular cavity with injection and suction ducts, *J. Chem. Eng. Jpn.* 40 (1) (2007) 5–11 (in English).
- T. Saeki, N. Ohtake, K. Imai, Heat transfer reduction by drag-reducing surfactant solutions in a higher temperature range, *J. Chem. Eng. Jpn.* 40 (11) (2007) 957–963 (in English).
- H. Saito, A. Murata, S. Mochizuki, Two-dimensional velocity measurement of turbulent flow in smooth and rib-roughened square two-pass channels by using particle image velocimetry, *Trans. Jpn. Soc. Mech. Eng. B* 73 (730) (2007) 1393–1398.
- H. Saitoh, K. Uchida, Heat and mass transport characteristics of pulsating flow in a rectangular duct (Part 1. Effect of pulsating frequency on heat transfer of a flat plate installed in the duct), *Therm. Sci. Eng.* 15 (4) (2007) 211–221.
- M. Sano, S. Takahara, Fluid flow and heat transfer in a turbulent channel flow with insertion of a triangular cylinder, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1525–1533.
- T. Takahashi, K. Watanabe, T. Sakai, Conjugate heat transfer calculation of a gas turbine rotor blade with ribbed internal cooling passages, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 809–814.
- K. Takamatsu, S. Nakagawa, T. Takeda, Application effect of region temperature coefficients and improvement of heat transfer analysis model in HTGR, *Trans. Atom. Energy Soc. Jpn.* (6) (3) (2007) 262–275.
- K. Tatsumi, M. Yamaguchi, Y. Nishio, K. Nakabe, Flow and heat transfer characteristics of a channel with cut-fins, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1464–1471.
- T. Tsukahara, K. Iwamoto, H. Kawamura, On the large-scale structure of turbulent heat transfer in a plane Couette flow, *Therm. Sci. Eng.* 15 (3) (2007) 151–162.
- P.L. Woodfield, M. Monde, Y. Mitsutake, Measurement of averaged heat transfer coefficients in high-pressure vessel during charging with hydrogen, nitrogen or argon gas, *J. Therm. Sci. Technol.* 2 (2) (2007) 180–191 (in English).
- H. Yanaoka, T. Inamura, R. Kobayashi, Numerical simulation of separated flow transition and heat transfer around a two-dimensional rib, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 260–267.
- H. Yanaoka, T. Inamura, S. Kawabe, Numerical simulation of behavior and heat transfer of hairpin vortices generated around a cube in a laminar boundary layer, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 268–275.
- H. Yanaoka, T. Inamura, Y. Suenaga, Y. Kobayashi, Numerical simulation of vortex structures and heat transfer behind a hill in a laminar boundary layer, *Trans. Jpn. Soc. Mech. Eng. B* 73 (736) (2007) 2537–2544.

5. Forced-convection

- R. Chiba, M. Izumi, Y. Sugano, An approximate analytical solution to heat transfer problem in laminar forced flow between parallel plates, *Trans. Jpn. Soc. Mech. Eng. B* 73 (729) (2007) 1220–1228.
- Y. Eguchi, H. Ohshima, T. Sakai, A. Yamaguchi, Multiscale large-Eddy simulation of a swirl vortex flow using MISTRAL code, *Trans. Atom. Energy Soc. Jpn.* (6) (3) (2007) 298–311.
- M. Harashima, S. Kawame, H. Kawamura, Oscillatory thermocapillary convection of half-zone liquid bridge with consideration of ambient air motion and heat transfer, *Therm. Sci. Eng.* 15 (3) (2007) 119–127.
- T. Hayashi, M. Ikegawa, T. Takahashi, Heat transport characteristics of oscillatory flow in a channel with a rectangular cross section, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 831–838.
- K. Ikeda, Y. Makino, M. Hoshi, Investigation of turbulent velocity field in PWR fuel rod bundle, *Trans. Atom. Energy Soc. Jpn.* (6) (1) (2007) 35–45 (in English).
- E. Katamine, Y. Kawase, H. Azegami, Shape optimization of forced heat-convection fields, *Trans. Jpn. Soc. Mech. Eng. B* 73 (733) (2007) 1884–1891.
- C. Lee, K. Lim, Heat transfer characteristics of turbulent impinging jet in impingement angle and curved surface configuration using transient liquid crystal method, *J. Therm. Sci. Technol.* 2 (2) (2007) 224–235 (in English).
- S. Makino, K. Iwamoto, H. Kawamura, Direct numerical simulation of turbulent heat transfer behind a rectangular orifice, *Therm. Sci. Eng.* 15 (4) (2007) 175–183.
- S. Mochizuki, A. Murata, H. Saito, Axial heat transport mechanism due to reciprocating flow in a ribbed tube, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 276–282.
- S. Mochizuki, A. Murata, H. Saito, Axial heat transport mechanism due to reciprocating flow in a ribbed tube, *J. Therm. Sci. Technol.* 2 (2) (2007) 156–167 (in English).
- H. Nakamura, Frequency-response and space-resolution for measurements of convective heat transfer using a thin conductive film, *Trans. Jpn. Soc. Mech. Eng. B* 73 (726) (2007) 601–609.
- H. Nakamura, Measurements of time-space distribution of convective heat transfer to air using a thin conductive film, *Trans. Jpn. Soc. Mech. Eng. B* 73 (733) (2007) 1906–1914.
- K. Ichimiya, K. Toriyama, H. Watanabe, Effects of thermal conduction in the wall on mixed convective heat transfer and flow in a horizontal square duct, *Therm. Sci. Eng.* 15 (1) (2007) 23–31.
- K. Kitamura, K. Mototani, F. Kimura, Heat transfer of combined forced and natural convection from horizontal cylinders to air, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 239–246.
- M.N. Noui-Mehidi, N. Ohmura, K. Nishiyama, J. Wu, Improving heat transfer with Taylor vortices in a compact modified Couette-Taylor apparatus, *J. Chem. Eng. Jpn.* 40 (11) (2007) 951–956 (in English).
- T. Arai, M. Furuya, Effect of salt additives to water on the severity of vapor explosions and on the collapse of vapor film, *Therm. Sci. Eng.* 15 (3) (2007) 91–100.
- K. Ide, J. Kamoshida, K. Yumiza, A study of liquid-layer structures under vapor mass in CHF region, *Therm. Sci. Eng.* 15 (1) (2007) 15–22.

6. Mixed-convection

- H. Nakamura, Frequency-response and space-resolution for measurements of convective heat transfer using a thin conductive film, *Trans. Jpn. Soc. Mech. Eng. B* 73 (726) (2007) 601–609.
- H. Nakamura, Measurements of time-space distribution of convective heat transfer to air using a thin conductive film, *Trans. Jpn. Soc. Mech. Eng. B* 73 (733) (2007) 1906–1914.
- K. Ichimiya, K. Toriyama, H. Watanabe, Effects of thermal conduction in the wall on mixed convective heat transfer and flow in a horizontal square duct, *Therm. Sci. Eng.* 15 (1) (2007) 23–31.
- K. Kitamura, K. Mototani, F. Kimura, Heat transfer of combined forced and natural convection from horizontal cylinders to air, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 239–246.
- M.N. Noui-Mehidi, N. Ohmura, K. Nishiyama, J. Wu, Improving heat transfer with Taylor vortices in a compact modified Couette-Taylor apparatus, *J. Chem. Eng. Jpn.* 40 (11) (2007) 951–956 (in English).

7. Evaporation and boiling

- T. Arai, M. Furuya, Effect of salt additives to water on the severity of vapor explosions and on the collapse of vapor film, *Therm. Sci. Eng.* 15 (3) (2007) 91–100.
- K. Ide, J. Kamoshida, K. Yumiza, A study of liquid-layer structures under vapor mass in CHF region, *Therm. Sci. Eng.* 15 (1) (2007) 15–22.

- T. Inoue, H. Iyota, N. Nishimura, T. Nomura, Effects of dry-bulb and wet-bulb temperature on the drying time of spherical porous material in high temperature gas flow, *Trans. Jpn. Soc. Mech. Eng. B* 73 (728) (2007) 1068–1076.
- G. Kikugawa, S. Takagi, Y. Matsumoto, Local and instantaneous definition of liquid–vapor interface at the microscopic scale, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 118–125.
- J.H. Kim, H. Arima, Y. Ikegami, Fundamental study of local heat transfer in forced convective boiling of ammonia on vertical flat plate, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (3) (2007) 217–226.
- J.H. Kim, K. Okuyama, S. Mori, Micropump using boiling propagation phenomena on a silicon substrate, *Therm. Sci. Eng.* 15 (1) (2007) 1–8.
- S. Mori, K. Okuyama, Rapid generation of superheated steam using a water-containing porous material, *Therm. Sci. Eng.* 15 (1) (2007) 39–42.
- H. Noguchi, H. Ota, S. Kubo, K. Onuki, R. Hino, Experimental results of sulfuric-acid flow boiling, *Trans. Atom. Energy Soc. Jpn.* (6) (1) (2007) 1–4 (in English).
- A. Ono, H. Sakashita, Measurements of surface dryout at high heat flux in subcooled pool boiling, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 283–290.
- T. Sato, Y. Koizumi, H. Ohtake, Experimental study on fundamental phenomena of nucleate-boiling by using heat transfer surface with artificial cavities created by MEMS technology, *Therm. Sci. Eng.* 15 (3) (2007) 101–109.
- T. Takashima, Observations of initiation stage of spontaneous vapor explosions for droplet scale, *Trans. Jpn. Soc. Mech. Eng. B* 73 (728) (2007) 1092–1098.
- Y. Takatsu, T. Masuoka, Slip boundary condition at interface between porous and fluid layers, *Trans. Jpn. Soc. Mech. Eng. B* 73 (732) (2007) 1710–1714.
- Y. Utaka, S. Okuda, Y. Tasaki, Structure of micro-layer and characteristics of boiling heat transfer in narrow gap mini-channel system, *Trans. Jpn. Soc. Mech. Eng. B* 73 (733) (2007) 1929–1935.

8. Condensation

- T.B. Chang, Heat transfer and second law analyses for laminar film condensation on a finite-size horizontal disk, *J. Therm. Sci. Technol.* 2 (1) (2007) 31–42 (in English).
- R. Chu, T. Hatanaka, S. Nishio, Enhancement of condensation on a vertical plate (effect of dispersed fin length on characteristic of condensation), *Therm. Sci. Eng.* 15 (4) (2007) 185–188.
- T. Kawamizu, T. Kaneko, S. Suzuki, T. Tsuruta, Experimental study on condensation heat transfer characteristics of paper in steam heating process, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 815–822.
- T. Kawamizu, T. Kaneko, S. Suzuki, H. Tanigawa, T. Tsuruta, Analytical study on condensation heat transfer characteristics of paper in steam heating process, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 823–830.
- S. Morooka, S. Kubo, K. Shirakawa, H. Yuasa, T. Yamamoto, H. Ono, Study on condensing heat transfer test under high temperature and high pressure conditions, *Therm. Sci. Eng.* 15 (2) (2007) 63–66.
- Y. Utaka, T. Kamiyama, Condensate drop movement by applying bulk temperature gradient on heat transfer surface in Marangoni condensation, *Trans. Jpn. Soc. Mech. Eng. B* 73 (736) (2007) 2530–2536.

9. Melting and solidification

- T. Asaoka, H. Kumano, A. Saito, S. Okawa, Study on measurement of latent heat of aqueous solutions using DSC, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (2) (2007) 117–125.

- H. Hidaka, M. Yamazaki, M. Yabe, H. Kakiuchi, M. Kubota, F. Watanabe, H. Matsuda, Evaluation of trimethylolethane trihydrate containing additives lowering the melting point for cold heat storage, *Kagaku Kogaku Ronbunshu (Trans. Chem. Eng. Jpn.)* 33 (1) (2007) 59–64.
- Y. Komatsu, M. Sugawara, S. Matsukawa, T. Fujita, Melting of a vertical ice cylinder inside a rotating cylindrical cavity filled with binary aqueous solution, *Trans. Jpn. Soc. Mech. Eng. B* 73 (734) (2007) 2130–2137.
- M. Kubota, E.P. Ona, F. Watanabe, H. Matsuda, H. Hidaka, H. Kakiuchi, Studies on phase change characteristics of binary mixtures of erythritol and $MgCl_2 \cdot 6H_2O$, *J. Chem. Eng. Jpn.* 40 (1) (2007) 80–84 (in English).
- H. Kumano, A. Saito, S. Okawa, H. Takizawa, Effects of PVA (polyvinyl alcohol) on supercooling phenomena of water, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (4) (2007) 331–338.
- T. Mizushima, H. Kawamura, S. Takao, A. Yabe, Fundamental properties of TbaF Clathrate for usage as a latent heat storage at a room temperature, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (2) (2007) 149–157.
- Y. Teraoka, M. Okada, S. Kaji, Formation of propane hydrate with melting of ice particles, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (3) (2007) 235–241.
- Y. Teraoka, M. Okada, Y. Higuchi, H. Tanaka, Freezing of supercooling water between parallel plates, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (4) (2007) 349–357.
- Y. Tochitani, N. Kawasaki, Initiation of freezing a super-cooled water droplet in oil by colliding with the electrodes for applying uniform DC electric field, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (3) (2007) 243–252.

10. Multiphase flow

- T. Ami, H. Umekawa, M. Ozawa, M. Shouji, Investigation on two-phase flow dynamics with discrete bubble model, *Therm. Sci. Eng.* 15 (4) (2007) 197–209.
- T. Hazuku, N. Tamura, K. Abe, Y. Fukuhara, T. Takamasa, T. Hibiki, Effect of surface wettability on flow characteristics in vertical upward gas–liquid two-phase flow, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1502–1509.
- F. Inasaka, M. Adachi, H. Murata, I. Aya, Water Hammer caused by rapid steam production in a severe accident in a light water reactor, *Trans. Atom. Energy Soc. Jpn.* (6) (3) (2007) 289–297.
- T. Kikuchi, Y. Fukushima, Bed boundary conditions of turbulent diffusion equation for solid fluid two-phase flow, *Jpn. J. Multiphase Flow* 21 (2) (2007) 177–184.
- C. Kino, T. Kunugi, A. Serizawa, The relationship between surface wave structure and internal flow of a falling liquid film, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 44–51.
- T. Minamikawa, H. Fujimoto, T. Hama, H. Takuda, Numerical study of the collision dynamics and heat transfer of water droplets impinging on a hot solid, *ISIJ Int.* 47 (1) (2007) 131–137 (in English).
- M. Nakagawa, A. Harada, Two-dimensional rarefaction waves in the high-speed two-phase flow, *Therm. Sci. Eng.* 15 (4) (2007) 223–231.
- M. Nakagawa, H. Miyazaki, A. Harada, Z. Ibragimov, Expansion waves at the outlet of the supersonic two-phase flow nozzle, *J. Therm. Sci. Technol.* 2 (2) (2007) 291–300 (in English).
- M. Osakabe, S. Horiki, Y. Arimoto, Enhancement of impinging heat transfer with two-phase flow, *Trans. Jpn. Soc. Mech. Eng. B* 73 (729) (2007) 1214–1219.
- T. Shintani, K. Inaba, M. Yamamoto, Numerical experiment on gas–solid two-phase flow of granulation process in stirred vessel (clarification of reason why double peaks in diameter distribution of produced particles appear), *Trans. Jpn. Soc. Mech. Eng. B* 73 (736) (2007) 2403–2409.

- J. Tomiyasu, T. Inamuro, Numerical simulations of gas–liquid two-phase flows in a micro porous structure, *Trans. Jpn. Soc. Mech. Eng. B* 73 (735) (2007) 2213–2219.

11. Mass transfer

- T. Daitoku, Y. Utaka, An effect of scraper shapes on detachment of solid adhered to cooling surface for formation of clathrate hydrate slurry, *Trans. Jpn. Soc. Mech. Eng. B* 73 (726) (2007) 594–600.
- C.D. Ho, C.L. Ho, J.W. Tu, Mass transfer improvement on double-pass laminar counterflow concentric circular mass exchangers with external recycle, *J. Chem. Eng. Jpn.* 40 (10) (2007) 805–807 (in English).
- K. Ichihara, M. Nagahama, Y. Minamoto, T. Araki, K. Onda, Separation and compression characteristics of hydrogen by use of proton exchange membrane, *Trans. Jpn. Soc. Mech. Eng. B* 73 (730) (2007) 1369–1376.
- T. Imashiro, T. Yamamoto, R. Kurose, S. Komori, Effects of oblique swell on turbulence structure and drag forces on wavy walls, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1518–1524.
- H. Inaba, F. Komatsu, A. Horibe, N. Haruki, A. Machida, Sorption characteristics of sorption material coated on heat transfer surface of a heat exchanger, *Therm. Sci. Eng.* 15 (3) (2007) 141–150.
- K. Ito, K. Ashikaga, Y. Kakimoto, T. Oshima, H. Masuda, K. Sasaki, Estimation of flooding in PEMFC gas diffusion layer by differential pressure measurement, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1556–1561.
- M. Kiyota, I. Morioka, A. Maeda, Numerical calculation of liquid film flowing down flat plates with protrusions, *Trans. Jpn. Soc. Mech. Eng. B* 73 (735) (2007) 2297–2302.
- M. Kiyota, I. Morioka, K. Kimoto, T. Suekane, Steam Absorption into films of aqueous solution of LiBr and LiI mixture falling over a column of horizontal pipes, *Trans. Jpn. Soc. Mech. Eng. B* 73 (736) (2007) 2545–2551.
- K. Kunitsugu, T. Nishimura, K. Tanoue, Mass transfer enhancement by pulsatile flows in grooved channels (the effects of groove length on the resonant mass transfer enhancement), *Trans. Jpn. Soc. Mech. Eng. B* 73 (730) (2007) 1353–1360.
- Y. Sakai, K. Uchida, T. Kubo, K. Nagata, Statistical characteristics of mass flux in the jet diffusion field of a high-Schmidt-number matter, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 720–727.
- Y. Suzue, N. Shikazono, N. Kasagi, Modeling of solid oxide fuel cell anode using stochastic reconstruction and Lattice Boltzmann method, *Trans. Jpn. Soc. Mech. Eng. B* 73 (736) (2007) 2557–2564.
- K. Tanno, S. Ohtsubo, S. Komori, Effects of fetch on mass transfer across the air–water interface in wind-driven turbulence, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1510–1517.
- K. Uchida, Y. Sakai, T. Kubo, K. Nagata, Characteristics of conditional statistics in the jet diffusion field of a high-Schmidt-number matter, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 728–735.
- Y. Usami, S. Fukusako, M. Yamada, Heat and mass transfer in a reforming catalyst bed: quantitative evaluation of the controlling factor by experiment, *J. Therm. Sci. Technol.* 2 (2) (2007) 146–155 (in English).
- S. Wang, Y. Utaka, Y. Tasaka, A Basic study on humidity recovery by using micro-porous media (effect of thermal conductivity of materials on transport performance), *Trans. Jpn. Soc. Mech. Eng. B* 73 (730) (2007) 1345–1352.

12. Molecular dynamics

- G. Fukano, M. Shibahara, A molecular dynamics study on gas molecular behavior passing through a rectangular hole in nanometer scale, *Trans. Jpn. Soc. Mech. Eng. B* 73 (726) (2007) 616–621.

- M. Matsumoto, S. Nakazawa, Molecular dynamics simulation of droplet impingement on solid wall, *Therm. Sci. Eng.* 15 (2) (2007) 55–61.
- G. Nagayama, S. Shi-Iki, T. Tsuruta, Effects of nanostructures on surface wettability: a molecular dynamics study, *Trans. Jpn. Soc. Mech. Eng. B* 73 (728) (2007) 1084–1091.
- M. Shibahara, K. Ishida, Molecular dynamics study on effect of surface structure in nanometer scale on friction at a solid–liquid interface, *Trans. Jpn. Soc. Mech. Eng. B* 73 (728) (2007) 1077–1083.
- S. Tsuda, S. Takagi, Y. Matsumoto, A molecular dynamics study on the growth of bubble nuclei with a noncondensable gas (1st report, a comparative analysis of the growth patterns), *Trans. Jpn. Soc. Mech. Eng. B* 73 (734) (2007) 2145–2152.
- S. Tsuda, S. Takagi, Y. Matsumoto, A molecular dynamics study on the growth of bubble nuclei with a noncondensable gas (2nd report, an extraction of a growth law of the bubble nuclei), *Trans. Jpn. Soc. Mech. Eng. B* 73 (734) (2007) 2153–2159.
- T. Zolotoukhina, T. Iwaki, Molecular dynamics study on wave equation of liquid, *Therm. Sci. Eng.* 15 (3) (2007) 111–118 (in English).

13. Measurements

- M. Emi, T. Sugihara, K. Shimano, H. Nagano, A. Ishii, K. Minakami, Y. Enomoto, Measurement system of instantaneous surface temperature on combustion chamber walls in an internal combustion engine by thin-film thermocouples, *Trans. Jpn. Soc. Mech. Eng. B* 73 (732) (2007) 1759–1766.
- J. Fujino, Thermal conductivity measurement of composites using steady state methods, *Netsu Bussei* (Jpn. J. Thermophys. Proper.) 21 (4) (2007) 212–215.
- K. Kato, M. Tagawa, Numerical evaluation of response compensation techniques for fine-wire temperature sensors, *Trans. Jpn. Soc. Mech. Eng. B* 73 (728) (2007) 1059–1067.
- S. Matsuo, T. Sotani, K. Nanbara, Measurements of fluid thermophysical properties by the remote operating system (1) thermal conductivity, *Netsu Bussei* (Jpn. J. Thermophys. Proper.) 21 (1) (2007) 31–35.
- Y. Nagase, H. Tasaka, Improvement of heat flux measurement on combustion chamber of spark ignition engine (conditions on combination of composite materials in thin film type of heat flux sensor), *Trans. Jpn. Soc. Mech. Eng. B* 73 (732) (2007) 1753–1758.
- T. Ohmura, Comparison of thermal conductivities of thermal insulations by different measurement methods, *Netsu Bussei* (Jpn. J. Thermophys. Proper.) 21 (2) (2007) 86–96.

14. Microgravity

- B.H. Jeon, O. Fujita, Y. Nakamura, H. Ito, Effect of co-axial flow velocity on soot formation in a laminar jet diffusion flame under microgravity, *J. Therm. Sci. Technol.* 2 (2) (2007) 281–290 (in English).

15. Heat exchangers, evaporators and condensers

- I. Ishihara, R. Matsumoto, Y. Shibata, Mist formation in heat exchanger of air-conditioners (2nd report) in case of slit fin, *Trans. Jpn. Soc. Refrig. Air Condition. Eng.* 24 (4) (2007) 431–437.
- M. Iwasaki, H. Saito, S. Mochizuki, A. Murata, Development of a high-performance fin-and-tube heat exchanger with vortex generators for a vending machine, *Therm. Sci. Eng.* 15 (2) (2007) 67–74.
- K. Kaga, S. Kotoh, T. Ogushi, Prediction of capacity of a heat exchanger by thermal network method (influence of thermal conduc-

- tion in fins on capacity of a condenser), Trans. Jpn. Soc. Mech. Eng. B 73 (727) (2007) 796–802.
- R. Kato, T. Nishihara, K. Kunitomi, Design of the intermediate heat exchanger for the high temperature gas-cooled reactor hydrogen cogeneration system, (I): Selection of the specification of heat exchanger tube and evaluation of the primary stress, Trans. Atom. Energy Soc. Jpn. (6) (2) (2007) 141–148.
- K. Kuwahara, S. Higashiiue, D. Ito, S. Koyama, Experimental study on cooling heat transfer of supercritical carbon dioxide inside horizontal micro-fin tubes, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (3) (2007) 173–181.
- K. Kuwahara, S. Koyama, Study on heat transfer and pressure drop in a spiral capillary tube, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (4) (2007) 381–387.
- T. Man'o, D. Kittaka, M. Tanino, S. Koyama, Improvements of heat transfer and refrigerant distribution in plate-type evaporator by vapor re-circulation using an ejector, Trans. Jpn. Soc. Refrig. Air Condition. Eng. 24 (4) (2007) 401–409.
- K. Miyata, H. Mori, K. Oishi, Y. Hamamoto, Boiling heat transfer and pressure drop of a refrigerant flowing vertically upward in a small diameter tube, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (4) (2007) 359–369.
- K. Miyata, H. Mori, K. Oishi, Y. Hamamoto, Boiling Heat transfer and pressure drop of a refrigerant flowing vertically downward in a small diameter tube, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (4) (2007) 371–380.
- K. Morimoto, Y. Suzuki, N. Kasagi, Optimal shape design of compact heat exchanger based on adjoint analysis of momentum and heat transfer, Trans. Jpn. Soc. Mech. Eng. B 73 (732) (2007) 1670–1677.
- M. Osakabe, S. Horiki, Y. Hanaki, Prediction and performance of compact heat exchanger with small diameter tubes for latent heat recovery, Trans. Jpn. Soc. Mech. Eng. B 73 (725) (2007) 253–259.
- K. Tsubaki, A. Miyara, Y. Nagai, N. Sasaki, Y. Mizuta, The effects of fin collar form on heat transfer performance of cross fin-tube heat exchanger, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (4) (2007) 423–430.
- M. Utamura, K. Nikitin, Y. Kato, Generalization of logarithmic mean temperature difference method for heat exchanger performance analysis, Therm. Sci. Eng. 15 (3) (2007) 163–173.
- T. Yara, S. Koyama, Prediction of heat transfer characteristics of binary refrigerant mixtures in a falling film type plate-fin evaporator, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (4) (2007) 411–421.
- R. Yonemoto, S. Koyama, Experimental study on condensation of pure refrigerants in horizontal micro-fin tubes: Proposal of correlations for heat transfer coefficient and frictional pressure drop, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (2) (2007) 139–148.
- ## 16. Heat transport devices
- A.P. Cirtog, S. Mochizuki, A. Murata, I. Ionel, Heat transport device with phase change using two parallel tubes, Therm. Sci. Eng. 15 (4) (2007) 241–244 (in English).
- T. Inoue, M. Monde, M. Asakura, Operating limit of heat transport in two-phase thermosyphon with connecting pipe (heated surface temperature fluctuation and flow characteristics), Trans. Jpn. Soc. Mech. Eng. B 73 (726) (2007) 610–615.
- H. Ishikawa, T. Ogushi, T. Nomura, H. Noda, H. Kawasaki, T. Yabe, Study on heat transfer characteristics of reservoir embedded loop heat pipe (2nd report, influence of non condensable gas on heat transfer characteristics), Trans. Jpn. Soc. Mech. Eng. B 73 (727) (2007) 847–854.
- T. Kuwahara, M. Ohnishi, H. Yamaguchi, S. Shuchi, Heat transport and driving force characteristics of heat transport device using magnetic fluid in various magnetic fields, Trans. Jpn. Soc. Mech. Eng. B 73 (734) (2007) 2085–2091.
- J. Uchiyama, K. Nakano, T. Saito, M. Fujii, N. Tanaka, H. Imoto, H. Fujisawa, M. Suzuki, Analysis on cooling performance of focal cortical cooling devices using thermoelectric chip, Trans. Jpn. Soc. Mech. Eng. B 73 (735) (2007) 2331–2336.

17. Heat sinks

- S. Haga, T. Ogushi, T. Ueda, N. Kimoto, Heat transfer characteristics of heated plate surface confronted with three-dimensional wavy-turbulence promoter (optimization by CFD analysis and comparison with experiment), Trans. Jpn. Soc. Mech. Eng. B 73 (731) (2007) 1541–1547.

18. Air conditioning and refrigeration

- M. Goto, K. Tanifugi, M. Fujita, T. Yamauchi, S. Ohuchida, K. Nagata, I. Ueno, T. Hasegawa, Observation of circulation of immiscible mineral lubricant oil in an air conditioning machine charged with HFC refrigerant, Trans. Jpn. Soc. Mech. Eng. B 73 (725) (2007) 291–297.
- Y. Hanamoto, H. Mori, M. Gohdo, K. Miura, H. Watanabe, T. Ishizawa, T. Takatsuka, Overall heat and mass transfer coefficient of water vapor adsorption (1st report) transfer coefficient for adsorbent packed beds, Trans. Jpn. Soc. Refrig. Air Condition. Eng. 24 (4) (2007) 459–472.
- Y. Hanamoto, H. Mori, M. Gohdo, K. Miura, H. Watanabe, T. Ishizawa, T. Takatsuka, Overall heat and mass transfer coefficient of water vapor adsorption (2nd report) transfer coefficient for adsorbent rotor blocks, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (4) (2007) 473–484.
- Y. Hirota, A. Matsumoto, M. Kubota, F. Watanabe, N. Kobayashi, M. Hasatani, M. Kanamori, Characteristics of a heat output of an adsorption heat pump aided with pumping, J. Chem. Eng. Jpn. 40 (3) (2007) 259–265 (in English).
- T. Ichihashi, Y. Nakano, M. Ogawa, H. Higo, T. Asano, M. Ito, Cooling of adsorbent bed in plate heat exchanger type adsorption reactor, J. Chem. Eng. Jpn. 40 (1) (2007) 72–79 (in English).
- S. Inoue, S. Inoue, N. Kobayashi, A study on heat transfer characteristics of adsorbent layer fixed by adhesive in an adsorption refrigerator, Kagaku Kogaku Ronbunshu (Trans. Chem. Eng. Jpn.) 33 (2) (2007) 135–141.
- K. Kariya, K. Kuwahara, S. Koyama, Numerical analysis for optimal design of fin and tube type adsorber: Case of activated carbon fiber/ethanol pair, Trans. Jpn. Soc. Refrig. Air Cond. Eng. 24 (4) (2007) 485–494.
- T. Kawanami, K. Sakurai, Cooling performance of room-temperature magnetic refrigerator with active magnetic regenerator (numerical analysis on cooling performance), Trans. Jpn. Soc. Mech. Eng. B 73 (735) (2007) 2323–2330.
- Y. Ueda, C. Kato, Traveling-wave thermoacoustic refrigerator, Trans. Jpn. Soc. Mech. Eng. B 73 (727) (2007) 839–846.

19. Packed or fluidized beds and porous media

- Y. Gu, I. Satoh, T. Saito, T. Kawaguchi, Heat transfer in segregated fluidized beds Part 1: Relation between particle and temperature segregation and dominating heat transfer mechanisms, J. Therm. Sci. Technol. 2 (1) (2007) 43–54 (in English).
- Y. Gu, I. Satoh, T. Saito, T. Kawaguchi, Heat transfer in segregated fluidized beds Part 2: Particle motion and its effects on the heat transfer in the segregated fluidized beds, J. Therm. Sci. Technol. 2 (1) (2007) 55–66 (in English).

- K. Hashizume, S. Morita, Particle holdup in a liquid–solid circulating fluidized bed, *Trans. Jpn. Soc. Mech. Eng. B* 73 (732) (2007) 1696–1703.
- K. Hashizume, Y. Kimura, Heat transfer characteristics in liquid–solid circulating fluidized beds, *Trans. Jpn. Soc. Mech. Eng. B* 73 (732) (2007) 1704–1709.
- M. Marek, Z. Grof, P. Kocí, M. Kohout, J. Kosek, F. Štepánek, Multi-scale modelling of transport, reaction and phase change in heterogeneous media, *J. Chem. Eng. Jpn.* 40 (11) (2007) 879–889 (in English).
- K. Nakaso, A. Yoshimura, Y. Kitazato, R. Shigenaga, J. Fukai, Transport phenomena in a packed bed reactor of metal hydride and promotion of its reaction rates by heat transfer enhancement, *J. Chem. Eng. Jpn.* 40 (12) (2007) 1056–1063 (in English).

20. Energy and environmental systems

- T. Hoshiko, T. Konomi, A. Kawakami, Research on PEFC overvoltage analysis method by impedance technique (3rd report, influence of gdl characteristics on each overvoltage), *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 306–312.
- T. Konomi, T. Kitahara, H. Nakajima, H. Murakami, Analysis of electric generation distribution on PEFC electrode (1st report, electric generation distribution under rib and gas channel on 1 mm rib width cell), *Trans. Jpn. Soc. Mech. Eng. B* 73 (726) (2007) 631–637.
- H. Masuda, K. Ito, Y. Kakimoto, K. Sasaki, Numerical analysis of transient response in polymer electrolyte membrane fuel cell considering gas/liquid two phase flow, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 855–862.
- I. Minatsuki, Y. Mizokami, Design study on evaluation for power conversion system concepts in high temperature gas cooled reactor with gas turbine, *Trans. Atom. Energy Soc. Jpn.* (6) (3) (2007) 276–288.
- T. Miura, K. Fushinobu, K. Okazaki, Analysis of flooding criteria of polymer electrolyte fuel cells (PEFCs) with Ti thin film gas diffusion layer, *Therm. Sci. Eng.* 15 (1) (2007) 43–45.
- H. Nakayama, M. Kato, M. Hori, Study on water management of polymer electrolyte fuel cell (3rd report, influence of gas channel height on water transportation in PEFC cell), *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 313–320.
- T. Saito, H. Furutani, S. Takahashi, Effects of laser pulse durations to minimum ignition energy measurement based on laser breakdown ignition, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 887–893.

- Y. Sato, Y. Tanabe, Study on the output power characteristics of the shape memory alloy engine (2nd report), *Trans. Jpn. Soc. Mech. Eng. B* 73 (734) (2007) 2138–2144.

21. Manufacturing and materials processing

- L. Guo, X. Wang, H. Zhan, M. Yao, D. Fang, Mould heat transfer in the continuous casting of round billet, *ISIJ Int.* 47 (8) (2007) 1108–1116 (in English).
- K. Ohnishi, T. Nozaki, K. Okazaki, J. Heberlein, U. Kortshagen, Synthesis of vertically-aligned single-walled carbon nanotubes in micro structure of atmospheric pressure non-equilibrium plasma, *Therm. Sci. Eng.* 15 (1) (2007) 9–14.
- Y. Okumura, K. Okazaki, Pyrolysis and gasification experiments of biomass under elevated pressure condition, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1434–1441.
- M.R.R.I. Shamsi, S.K. Ajmani, Three dimensional turbulent fluid flow and heat transfer mathematical model for the analysis of a continuous slab caster, *ISIJ Int.* 47 (3) (2007) 433–442 (in English).
- M. Shibahara, H. Takada, T. Shimizu, N. Kunioshi, M. Katsuki, H. Takehara, PAH and fullerene formation from low pressure combustion of toluene and oxygen premixed flame, *Trans. Jpn. Soc. Mech. Eng. B* 73 (731) (2007) 1456–1463.
- H.C. Sun, L.S. Chao, Prediction of interfacial heat transfer coefficients by using a modified lump capacitance method for aluminum casting in a green sand mold, *ISIJ Int.* 47 (12) (2007) 1753–1758 (in English).
- K. Umeki, Y. Son, T. Namioka, K. Yoshikawa, Basic study on hydrogen-rich gas production by high temperature steam gasification of solid wastes, *Trans. Jpn. Soc. Mech. Eng. B* 73 (725) (2007) 321–327.

22. Biological technology and food processing

- S. Maruyama, J. Okajima, A. Komiya, H. Takeda, Estimation of temperature distribution in biological tissue by using solutions of bioheat transfer equation, *Trans. Jpn. Soc. Mech. Eng. B* 73 (733) (2007) 1899–1905.
- R. Shirakashi, K. Yamauchi, M. Kuroda, Effects of electrolytes and lipid charge on the productivity of giant unilamellar vesicle (GUV) by electroformation, *Trans. Jpn. Soc. Mech. Eng. B* 73 (727) (2007) 901–908.