

CURRICULUM VITAE

Name: Morten Christian Melaaen

Date of Birth: 17.06.62

Place of Birth: London, England

First University Degree: Sivilingeniør (M.Sc.)

University: NTH (now NTNU), Norway

Year: 1986

Subject: Thermal Energy

Second University Degree: Doktor ingeniør (Ph.D.)

University: NTH (now NTNU), Norway

Year: 1990

Topic: Analysis of curvilinear non-orthogonal coordinates for numerical calculation of fluid flow in complex geometries.

Experience:

Employer 1: SINTEF, Section of Thermodynamics, Division of Applied
Thermodynamics

Position: Research engineer

Period: 1990

Employer 2: The Norwegian Institute of Technology (NTH, now NTNU),
Division of Thermal Energy

Position: Associate professor

Period: 1990-1994

Employer 3: Norsk Hydro Research Centre Porsgrunn,
Department of Oil Technology

Position: Senior research scientist

Period: 1994

Employer 4: Telemark University College (HiT) / University of South-Eastern
Norway (USN), Porsgrunn, Norway

Position: Professor, Process Equipment

Period: 1994 - to date

Employer 5: Telemark Technological R&D Centre (Tel-Tek), Porsgrunn, Norway

Position: Head of Departments, first Process Equipment, next Flow and Energy

Period: 1995 - 2007

Employer 6: Telemark Technological R&D Centre (Tel-Tek), Porsgrunn, Norway

Position: Senior advisor, GassTEK

Period: 2007 - 2017

Employer 7: Telemark University College (HiT), Porsgrunn, Norway

Position: Head of Department, Department of Process Technology
Period: 2002 - 2003

Employer 8: Telemark University College (HiT), Porsgrunn, Norway
Position: Head of Department, Department of Process-, Energy- and Environmental
Technology
Period: 2003 – 2011

Employer 9: Telemark University College (HiT), Porsgrunn, Norway
Position: Dean, Faculty of Technology
Period: 2011 – 2015

Employer 10: University College of Southeast Norway (HSN), Porsgrunn, Norway
Position: Dean, Faculty of Technology
Period: 2016

Employer 11: University College of Southeast Norway (HSN), Porsgrunn, Norway
Position: Dean, Faculty of Technology, Natural Sciences and Maritime Sciences
Period: 2016 – 2018

Employer 12: University of South-Eastern Norway (USN), Porsgrunn, Norway
Position: Dean, Faculty of Technology, Natural Sciences and Maritime Sciences
Period: 2018 – to date

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Guidance of dr. students

- Vice supervisor for Morten G. Grønli, completed dr.ing. degree with title *A theoretical and experimental study of the thermal degradation of biomass*, NTNU, disputation 1996.
- Vice supervisor for Mona Jacobsen, completed dr.ing. degree with title *Heat and mass transfer in a vertical flue ring furnace*, NTNU, disputation 1997.
- Main supervisor for Qianpu Wang, completed dr.ing. degree with title *An experimental and computational study of gas/particle multiphase flow in process equipment*, HiT, disputation 2001.
- Main supervisor for Geir Elseth, completed dr.ing. degree with title *An experimental study of oil/water flow in horizontal pipes*, HiT, disputation 2001.
- Main supervisor for Aage Jøsang, completed dr.ing. degree with title *Experimental studies and computer simulation of droplet/gas flow*, HiT, disputation 2002.
- Main supervisor for Martin Siljan, completed dr.ing. degree with title *Decide the impact of process factors on the LWA process with priority on the kiln process*, HiT, disputation 2002.
- Main supervisor for Chandana Ratnayake, completed dr.ing. degree with title *A comprehensive scaling up technique for pneumatic transport systems*, HiT, disputation 2005.

- Vice supervisor for Svend Tollak Munkejord, completed dr.ing. degree with title *Analysis of the two-fluid model and the drift-flux model for numerical calculation of two-phase flow*, NTNU, disputation 2006.
- Main supervisor for Jon-Are Julshamn, completed dr.ing. degree with title *Hydraulic jumps in horizontal two phase pipe flow*, HiT, disputation 2006.
- Vice supervisor for Olav Gerhard Haukenes Nygaard, completed dr.ing. degree with title *Multivariable process control in high temperature and high pressure environment using non-intrusive multi sensor data fusion*, HiT, disputation 2006.
- Vice supervisor for Jens Andreas Melheim, completed dr.ing. degree with title *Computer simulation of turbulent electrocoalescence*, NTNU, disputation 2007.
- Main supervisor for Rahel Yusef, completed PhD degree with title *A computational study of surface to bed heat transfer and reactive flows in gas fluidized beds*, HiT, disputation 2010.
- Main supervisor for Anette Mathisen, completed PhD degree with title *An experimental and computational investigation of gas/particle flow in a vertical lifter*, HiT, disputation 2010.
- Main supervisor for Amaranath S. Kumara, completed PhD study with title *An experimental study of oil-water flow in pipes*, HiT, disputation 2011.
- Main supervisor for Lene Amundsen, completed PhD study with title *An experimental study of oil-water flow in horizontal and inclined pipes*, HiT, disputation 2011.
- Main supervisor for Marit Kleven, completed PhD study with title *Numerical simulations and experimental studies for nasal delivery of vaccines and drugs*, HiT, disputation 2012.
- Main supervisor for Lars Erik Øi, completed PhD study with title *Removal of CO₂ from exhaust gas*, HiT, disputation 2012.
- Vice supervisor for Christo Rautenbach, completed PhD study with title *An experimental and theoretical study of dense fluidized bed fluid dynamics*, HiT, disputation 2012.
- Vice supervisor for Kjetil Svendsen, completed PhD study with title *Thermal Fatigue in High Current Power Density Induction Coils*, HiT, disputation 2012.
- Main supervisor for Werner Filtvedt, completed PhD study with title *Production of polysilicon from silane pyrolysis in fluidized bed*, HiT, disputation 2013.
- Main supervisor for Sondre Vestøl, completed PhD study with title *Detailed measurements of gas/liquid flow with low liquid fractions in horizontal and near horizontal pipes*, HiT, disputation 2013.
- Main supervisor for Jingyi Han, completed PhD study with title *Mass transfer characteristics of CO₂ absorption into liquid droplets*, HiT, disputation 2014.
- Main supervisor for Sanoja Ariyaratna Jayarathna, completed PhD study with title *Post combustion CO₂ capture: Modelling for control, and physical property analysis of amines*, HiT, disputation 2014.
- Vice supervisor for Hiromi Ariyaratne, completed PhD study with title *Utilization of Waste-derived Biofuels and Partly CO₂-neutral Fuels in Cement Kilns*, HiT, disputation 2014.
- Main supervisor for Udara Arachchige, completed PhD study with title *Carbon Dioxide Capture by Chemical Absorption: Energy Optimization and Analysis of Dynamic Viscosity of Solvents*, USN, disputation 2018.

- Vice supervisor for Amila Chandra Kahawalage, ongoing PhD study with title *Utilization of alternative fuels in cement kilns*, USN

Publications

- 1) Melaaen, M.C. (1990), *Analysis of Curvilinear Non-orthogonal Coordinates for Numerical Calculation of Fluid Flow in Complex Geometries*. Dr.ing. thesis.
- 2) Melaaen, M.C. (1991), *Numerical Analysis of Isothermal Flow in a Combustion Chamber*. Proc. 7th International Conference on Numerical Methods in Laminar and Turbulent Flow, Stanford, California.
- 3) Melaaen, M.C. (1991), *Comparison of Staggered and Non-staggered Calculations when Using Curvilinear Non-orthogonal Coordinates*. Proc. 13th IMACS World Congress on Computation and Applied Mathematics, Dublin, Ireland.
- 4) Melaaen, M.C. (1992), *Calculation of Fluid Flows with Staggered and Nonstaggered Curvilinear Nonorthogonal Grids - the Theory*. Numerical Heat Transfer, Part B, vol.21, pp.1-19.
- 5) Melaaen, M.C. (1992), *Calculation of Fluid Flows with Staggered and Nonstaggered Curvilinear Nonorthogonal Grids - a Comparison*. Numerical Heat Transfer, Part B, vol.21, pp.21-39.
- 6) Melaaen, M.C. (1992), *Analysis of Fluid Flow in Constricted Tubes and Ducts Using Body-fitted Non-staggered Grids*. International Journal for Numerical Methods in Fluids, vol. pp.895-923.
- 7) Wichman, I.S. and Melaaen, M.C. (1992), *Modeling the Pyrolysis of Cellulosic Materials*. Proc. 3th conference on Advances in Thermochemical Biomass Conversion, Interlaken, Sveits. (Artikkelen presentert av M.C.Melaaen.)
- 8) Melaaen, M.C. (1992), *Three-dimensional Numerical Analysis of Isothermal Fluid Flow in Gas Turbine Combustors*. International Journal of Numerical Methods for Heat and Fluid Flow, vol. 2, pp.441-454.
- 9) Olsen, N.R.B. and Melaaen, M.C. (1993), *Numerical Modeling of Erosion around a Cylinder and Sediment Deposition in a Hydropower Reservoir*. Proc. 8th International Conference on Numerical Methods in Laminar and Turbulent Flow, Swansea, UK.
- 10) Olsen, N.R.B. and Melaaen, M.C. (1993), *Three-dimensional Calculation of Scour around Cylinders*. Journal of Hydraulic Engineering, vol. 119, no. 9.
- 11) Gran, I.R., Melaaen, M.C. and Magnussen, B.F. (1993), *Numerical Analysis of Flame Structure and Fluid Flow in Combustors*. 20th International Congress on Combustion Engines, ("CIMAC 1993"), London.
- 12) Gran, I.R., Melaaen, M.C. and Magnussen, B.F. (1993), *Numerical Simulation of Fluid Flow and Combustion in Gas Turbine Combustors*. International Gas Turbine and Aeroengine Congress and Exposition, ("1993 ASME TURBO EXPO - Land, Sea and Air"), Cincinnati, Ohio.
- 13) Melaaen, M.C. (1993), *Nonstaggered Calculation of Laminar and Turbulent Flows Using Curvilinear Nonorthogonal Coordinates*. Numerical Heat Transfer, Part A, vol.24, pp.375-392.
- 14) Gran, I.R., Melaaen, M.C. and Magnussen, B.F. (1994), *Numerical Simulation of Local Extinction Effects in Turbulent Combustor Flows of Methane and Air*. Twenty-Fifth Symposium (International) on Combustion/The Combustion Institute, pp. 1283-1291.

- 15) Jacobsen, M. and Melaaen, M.C. (1995), *Heat and Mass Transfer in Anode Materials During Baking*. 1995 TMS Annual Meeting&Exhibition, Las Vegas, Nevada, Feb. 1995.
- 16) Melaaen, M.C. (1996), *Numerical Analysis of Heat and Mass Transfer in Drying and Pyrolysis of Porous Media*. Numerical Heat Transfer, Part A, vol. 29, pp. 331-355.
- 17) Melaaen, M.C. and Grønli, M.G. (1996), *Modelling and Simulation of Moist Wood Drying and Pyrolysis*, "Developments in Thermochemical Biomass Conversion", A.V. Bridgwater and D.G.B. Boocock, vol. 1, pp. 132-146, Blackie Academic&Professional.
- 18) Olsen, N.R.B. and Melaaen, M.C. (1996), *Three-Dimensional Numerical Modelling of Vortex Shedding Behind Circular Cylinders*, "The International Journal on Hydropower&Dams", Aqua-Media International Ltd., MTM Conference, Lausanne, 8-11 July.
- 19) Jacobsen, M. and Melaaen, M.C. (1998), *Numerical Simulation of the Baking of Porous Anode Carbon in a Vertical Flue Ring Furnace*, Numerical Heat Transfer, Part A, vol. 34, pp. 571-598.
- 20) Jøsang, A.I. and Melaaen, M.C. (1999), *Numerical simulation of cyclones*. International Symposium Reliable Flow of Particulate Solids III (RELPOWFLO III), 11.-13. August, Porsgrunn, Norway, Proceedings, pp. 431-438.
- 21) Larfeldt, J., Leckner, B. and Melaaen, M.C. (2000), *Modelling and measurements of the pyrolysis of large wood particles*. Fuel, vol. 79, pp. 1637-1643.
- 22) Larfeldt, J., Leckner, B. and Melaaen, M.C. (2000), *Modelling and measurements of heat transfer in charcoal from pyrolysis of large wood particles*. Biomass & Bioenergy, vol. 18, pp. 507-514.
- 23) Grønli, M.G. and Melaaen, M.C. (2000), *Mathematical model for wood pyrolysis - comparison of experimental measurements with model predictions*. Energy & Fuels (An American Chemical Society Journal), vol. 14, number 4, pp. 791-800, (internet: page est: 9.6, a-j).
- 24) Larfeldt, J., Leckner, B. and Melaaen, M.C. (2000), *Modelling and measurements of drying and pyrolysis of large wood particles*. "Progress in Thermochemical Biomass Conversion (Bridgwater)", September 17-22, Tyrol, Austria.
- 25) Wang, Q., Melaaen, M.C. and DeSilva, S.R. (2000), *Simulation and optimization of a cross flow air classifier*. "International Conference on Applied Computational Fluid Dynamics", Oktober 17-20, Beijing, China, 2000.
- 26) Wang, Q., Melaaen, M.C. and DeSilva, S.R. (2000), *Simulation and investigation of a 'sand-blast' type of erosion tester*. "International Conference on Applied Computational Fluid Dynamics", October 17-20, Beijing, China, 2000.
- 27) Jøsang, Aa. I. and Melaaen, M.C. (2000), *Detailed measurements and simulations of a vane separator*. "International Conference on Applied Computational Fluid Dynamics", October 17-20, Beijing, China, 2000.
- 28) Elseth, G., Kvandal, H.K. and Melaaen, M.C. (2000), *Measurement of velocity and phase fraction in stratified oil/water flow*. "MFTP 2000", Antalya, Turkey.
- 29) Kvandal, H.K., Elseth, G. and Melaaen, M.C. (2000), *Measurement of velocity and phase fraction in dispersed two phase flow*. "MFTP 2000", Antalya, Turkey.
- 30) Wang, Q., Melaaen, M.C. and DeSilva, S.R. (2001), *Investigation and simulation of a cross flow air classifier*. Powder Technology, vol. 120, pp. 273-280.
- 31) Siljan, M. and Melaaen, M.C. (2001, 2002), *One-dimensional simulation of clay drying*. "42nd SIMS Conference", October 8-9, Porsgrunn, 2001, and published in

- the journal "Modeling, identification and control", vol. 23, no. 2, pp. 135-147, 2002.
- 32) Jøsang, Aa. I. and Melaaen, M.C. (2001, 2002), *Fluid flow simulations of a vane separator*. Presentert på konferansen "42nd SIMS Conference", Oktober 8-9, Porsgrunn, 2001, and published in the journal "Modeling, identification and control", vol. 23, no. 1, pp. 5-26, 2002.
- 33) Wang, Q., Melaaen, M.C. and DeSilva, S.R. (2001, 2002), *A computational and experimental study of fluid flow in a de-duster*. "42nd SIMS Conference", Oktober 8-9, Porsgrunn, 2001, and published in the journal "Modeling, identification and control", vol. 23, no. 1, pp. 53-64, 2002.
- 34) Wang, Q., Melaaen, M.C., DeSilva, S.R. and Tong, G. (2003), *Gas particle flow modelling in process equipments*. The 4th international conference for conveying and handling of particulate solids, Mai 27 - 30, Budapest, Ungarn.
- 35) Tong, G., Mathiesen, V., and Melaaen, M. (2003), *Experimental and numerical studies of dilute and dense gas-solid flow*. AIChE annual meeting, San Francisco, November 2003.
- 36) Elseth, G., Kvandal, H. and Melaaen, M.C. (2004), *Measurements of velocity, turbulence and phase fraction in horizontal two-phase oil-water pipe flow*. 3rd Int. Sym. on Two-Phase Flow Modelling and Experimentation, Pisa, 22-24 september 2004.
- 37) Ratnayake, C., Melaaen, M.C. and Datta, B.K. (2004), *An experimental investigation and a CFD modelling of gas-solid flow across a bend in a dense phase pneumatic conveying system*. 8th international conference on bulk materials storage, handling and transportation. Wollongong, Australia, 5th-8th July 2004.
- 38) Julshamn, J.A., Schulkes, R. and Melaaen, M.C. (2004), *Measurements of pressure jump over a hydraulic jump in a horizontal two-phase water/air flow*. 4th North American Conference on Multiphase Technology, Banff, Canada, 3-4 June 2004.
- 39) Kleven, M., Melaaen, M.C., Reimers, M., Røtnes, J.S., Aurdal, L. and Djupesland, P.G. (2004), *Fluid flow and particle deposition simulations in the human nose*. "45nd SIMS Conference", September 23-24, København, 2004.
- 40) Yusuf, R., Melaaen, M.C. and Mathiesen, V. (2005), *Convective heat and mass transfer modeling in gas-fluidized beds*. "Chemical Engineering and Technology (CET)", vol. 28, no. 1, pp. 13-24, Wiley-VCH, Germany. (ISSN 09307516).
- 41) Kleven, M., Melaaen, M.C., Reimers, M., Røtnes, J.S., Aurdal, L., Djupesland, P.G. and Sheldrake, C. (2005), *The application of computational fluid dynamics (CFD) simulations for nasal drug delivery*. "Fourth International Conference on CFD in the Oil and Gas, Metallurgical and Process Industries" SINTEF/NTNU, Trondheim, 6-8 June, 2005.
- 42) Ratnayake, C., Melaaen, M.C. and Datta, B.K. (2005), *Pressure drop prediction in dense phase pneumatic conveying using CFD*. "Fourth International Conference on CFD in the Oil and Gas, Metallurgical and Process Industries", SINTEF/NTNU, Trondheim, 6-8 June, 2005.
- 43) Yusuf, R., Melaaen, M.C. and Mathiesen, V. (2005), *CFD modeling of heat transfer in gas fluidized beds*. "Fourth International Conference on CFD in the Oil and Gas, Metallurgical and Process Industries", SINTEF/NTNU, Trondheim, 6-8 June, 2005.
- 44) Kleven, M., Melaaen, M.C., Reimers, M., Røtnes, J.S., Aurdal, L. and Djupesland, P.G. (2005), *Using computational fluid dynamics (CFD) to improve*

- the bi-directional nasal drug delivery concept*. Trans IChemE, Part C, Food and Bioproducts Processing, vol 83 (C2), pp. 107-117, 2005, (ISSN 09603085) and presented on the conference "7th World Congress of Chemical Engineering", Glasgow, UK, 10-14 July, 2005.
- 45) Yusuf, R., Melaaen, M.C. and Mathiesen, V. (2005), *A computational fluid dynamic model for fluidized bed heat transfer*. "13th Annual Conference of the Computational Fluid Dynamics Society of Canada", St. John's, Canada, July 31-August 3, 2005.
- 46) Wang, Q., Melaaen, M.C., DeSilva, S.R. and Tong, G. (2005), *Experimental and computational studies of gas/particle flow in a 'sand-blast' type of erosion tester*. "Powder Technology", vol. 160, pp. 93-102, 2005, Elsevier. (ISSN 00325910).
- 47) Kleven, M., Melaaen, M.C., Reimers, M. and Djupesland, P.G. (2006), *Computational modelling of nasal aerodynamics*. Presented on the conference "5th World Congress of Biomechanics", Munich, Germany, July 29th – August 4th 2006.
- 48) Ratnayake, C., Datta, B.K. and Melaaen, M.C. (2006), *Scaling up technique to determine the minimum conveying boundary of a pneumatic transport system*. Presented on the conference CHoPS-05, "The 5th international conference for conveying and handling of particulate solids", Sorrento, Italy, August 27-31, 2006.
- 49) Gyllensten, A.J., Melaaen, M.C. and Manger, E. (2006), *Particle/gas interactions in Taylor-Couette flow*. Presented on the conference CHoPS-05, "The 5th international conference for conveying and handling of particulate solids", Sorrento, August 27-31, 2006.
- 50) Mathisen, A., Halvorsen, B. and Melaaen, M.C. (2006), *Experimental studies of dilute vertical pneumatic transport*. Presented on the conference CHoPS-05, "The 5th international conference for conveying and handling of particulate solids", Sorrento, August 27-31, 2006.
- 51) Vestøl, S. and Melaaen, M.C. (2006), *Gamma and PIV measurements in laboratory model of unprocessed gas flow*. Presented on the conference "The 5th international symposium on measurement techniques for multiphase flows", Macau, China, December 10-13, 2006.
- 52) Vestøl, S. and Melaaen, M.C. (2007), *PIV and gamma measurements of unprocessed gas flow in a horizontal and near horizontal test pipe*. Presented on the conference "13th international conference on multiphase production technology 2007", Edinburgh, UK, 13-15 June, 2007.
- 53) Ratnayake, C., Datta, B.K. og Melaaen, M.C. (2007), *A Unified Scaling-Up Technique for Pneumatic Conveying Systems*, "Particulate Science and Technology", vol. 25, pp. 289-302, 2007, Taylor & Francis Inc (ISSN 02726351).
- 54) Svendsen, K., Hagen, T.H. and Melaaen, M.C. (2007), *Temperature Distribution in Selected Cross Sections of Induction Heating Coils*, Presented on the conference "HES-07, Int. Sym. on Heating by Electromagnetic Sources, Induction, Dielectric, Conduction & EMP", Padua, Italy, June 20-22, 2007.
- 55) Vestøl, S. og Melaaen, M.C. (2007), *Velocity profile measurements on stratified two-phase gas/liquid flow in horizontal and downwardly inclined pipes using PIV*. Presented on the conference "5th international conference on heat transfer, fluid mechanics and thermodynamics, HEFAT 2007", Sun City, South Africa, 1-4 July, 2007.
- 56) John, A., Mathisen, A., Datta, B.K. and Melaaen, M.C. (2007), *CFD Simulation and Experimental Validation of Mass Flow Rate of Air-Particle Flow in a Dilute*

- Flow Vertical Lifter*, Presented on the conference “International Conference on Modeling and Simulation”, Coimbatore, India, August 27-29, 2007.
- 57) Mathisen, A., Halvorsen, B. and Melaaen, M.C. (2008), *Experimental study of dilute vertical pneumatic transport using PIV*. Presented on the conference RELPOWFLO IV, "4th International Symposium Reliable Flow of Particulate Solids", Tromsø, Norway, 10th-12th June 2008.
- 58) Kumara, W.A.S., Elseth, G., Halvorsen, B.M. og Melaaen, M.C. (2008), *Computational study of stratified two phase oil/water flow in horizontal pipes*. Presented on the conference "6th international conference on heat transfer, fluid mechanics and thermodynamics, HEFAT 2008", Pretoria, South Africa, 30 June-2 July.
- 59) Kumara, W.A.S., Halvorsen, B.M. og Melaaen, M.C. (2008), *Computational study of stratified gas-liquid flow in horizontal and inclined pipes*. Presented on the conference "6th international conference on CFD in oil&gas, metallurgical and process industries", SINTEF/NTNU, Trondheim, 10-12 June.
- 60) Kumara, W.A.S., Halvorsen, B.M. and Melaaen, M.C. (2008), *An experimental investigation of oil-water flow in horizontal pipe using PIV and gamma measurements*. Presented on the conference "11th international conference on multiphase flow in industrial plants", Palermo, Italy, 7-10 September.
- 61) Mathisen, A., Halvorsen, B. and Melaaen, M.C. (200), *Experimental studies of dilute vertical pneumatic transport*. “Particulate Science and Technology”, vol. 26, pp. 235-246, 2008, Taylor & Francis Group (ISSN 0272-6351).
- 62) Ratnayake, C., Datta, B.K., Saasen, A., Bastesen, Y. og Melaaen, M.C. (2008), *Prediction of Pressure Drop at the Entry Section from Top Discharge Blow Tank in a Pneumatic Conveying System*, “Particulate Science and Technology”, vol. 26, pp. 451-459, 2008, Taylor & Francis Inc.
- 63) Kumara, W. A. S., Halvorsen, B.M. and Melaaen, M.C. (2009), *Pressure drop, flow pattern and local water volume fraction measurements of oil-water flow in pipes*. Presented on "The 6th Int. Symp. On Measurement Techniques for Multiphase Flows (ISMTMF 2008)", Okinawa, Japan, December 15-18, and revised paper published in “Measurement Science and Technology”, vol. 20, no. 11, pp. 1-18, article nr. 114004, Nov. 2009. ISSN 0957-0233.
- 64) Svendsen, K., Hagen, T.H., Melaaen, M.C. and Markegaard L. (2009), *Thermal Measurements for Service Life Estimations of High Power Induction Hardening Coils*. Presented on “IEEE-ICIT 2009, Int. Conf. on Industrial Technology, Churchill, Victoria, Australia, pp.754-759, 10-13 Feb., 2009. Proceedings of the 2009 IEEE International Conference on Industrial Technology. , s. 1-6. IEEE Computer Society, 2009. ISBN 9781424435067.
- 65) Kumara, W.A.S., Halvorsen, B.M. and Melaaen, M.C. (2009), *Particle image velocimetry, gamma densitometry and pressure measurements of oil-water flow*. “Multiphase Science and Technology”, vol. 21, no. 1-2, pp. 51-64, 2009, ISSN 0276-1459.
- 66) Amundsen, L., Schulkes, R. and Melaaen, M.C. (2009), *Oil-water flow: experiments and model development*. Presented on “14th International Conference on Multiphase Production Technology”, Cannes, France, 17th-19th June, 2009.
- 67) Greer, T., Jayarathna, S., Alic, M., Melaaen, M.C. and Lie, B. (2009), *Dynamic model for removal of carbon dioxide from a post combustion process with monoethanolamine*. Presented on “MATHMOD 2009 - 14th International

- Conference on Mathematical Modelling”, Vienna, Austria, February 11-13, pp. 1090-1099, 2009.
- 68) Kumara, W.A.S, Halvorsen, B.M. and Melaaen, M.C. (2009) *Velocity and turbulence measurements of oil-water flow in horizontal and slightly inclined pipes using PIV*, Fifth International Conference on Computational and Experimental Methods in Multiphase and Complex Flow, 15 - 17 June 2009, New Forest, UK, and presented in the book “Computational Methods in Multiphase Flow V”. WIT Transactions on Engineering Series. Vol. 63, pp. 277-293. WIT Press, 2009. ISSN 1743-3533 / ISSN 1746-4471. ISBN 9781845641887.
- 69) Jayarathna, S.A., Lie, B. and Melaaen, M.C. (2009), *Comparison of computational methods for reaction equilibrium*. Presented on "SIMS 50 Modeling and Simulation of Energy Technology", 7-8 October, Fredericia, Denmark, pp: 13-19, 2009.
- 70) Kumara, W.A.S, Elseth, G., Halvorsen, B.M. and Melaaen, M.C. (2010) *Comparison of Particle Image Velocimetry and Laser Doppler Anemometry measurement methods applied to the oil-water flow in horizontal pipe*, Flow measurement and Instrumentation, vol. 21, pp. 105-117, 2010.
- 71) Kumara, W.A.S, Halvorsen, B.M. and Melaaen, M.C. (2010) *Single-beam gamma densitometry measurements of oil-water flow in horizontal and slightly inclined pipes*, International Journal of Multiphase Flow, vol. 36, pp. 467-480, 2010.
- 72) Kumara, W.A.S, Halvorsen, B.M. and Melaaen, M.C. (2010) *Particle Image Velocimetry for characterizing the flow structure of oil-water flow in horizontal and slightly inclined pipes*, Chemical Engineering Science, vol. 65, pp. 4332-4349, 2010.
- 73) Rautenbach, C., Melaaen, M.C. and Halvorsen, B.M. (2010), *Investigation of the shifting parameter as a function of particle size distribution in a fluidized bed traversing from fixed to fluidized bed*. Presented on “8th International Conference on Fluidization”, ECI 2010, 15th-21th May, 2010, South Korea.
- 74) Rautenbach, C., Melaaen, M.C. and Halvorsen, B.M. (2010), *Investigation of the shifting parameter as a function of density in a fluidized bed traversing from fixed to fluidized bed*. Presented on “7th International Conference on Multiphase Flow”, ICMF 2010, Tampa, Florida, May 30th-June 4th, 2010.
- 75) Rautenbach, C., Melaaen, M.C. and Halvorsen, B.M. (2010, 2011), *Extension of a model for the distribution of voidage around bubbles in a fluidized bed*. Presented at “Seven International Conference on Advances in Fluid Mechanics”, September 15th-17th, 2010, Algarve, Portugal, Computational Methods in Multiphase Flow VI, p. 189-198, WIT Press 2011.
- 76) Ariyaratne, W.K.H., Tokheim, L.A. and Melaaen, M.C. (2010), *Net CO₂ emission from solid recovered fuels: evaluation of the selective dissolution method*. Presented on the conference “ASME-ATI-UIT 2010 Conference on Thermal and Environmental Issues in Energy Systems”, Sorrento, Italy, 16-19 May.
- 77) Filtvedt, W.O., Javidi, M., Holt, A., Melaaen, M.C., Marstein, E., Tathgar, H. and Ramachandran, P.A. (2010), *Development of fluidized bed reactors for silicon production*. “Solar Energy Materials & Solar Cells”, vol. 94, pp. 1980-1995, 2010.
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