

Publications in journals (reviewed publications)

> 2020	> 2019	> 2018	> 2017	> 2016	> 2015	> 2014	> 2013	> 2012	> 2011	> 2010	> 2009	> 2008
> 2007	> 2006	> 2005	> 2004	> 2003	> 2002	> 2001	> 2000	> 1999	> 1998	> 1997	> 1996	> 1995

Publikationen in Zeitschriften im Jahr 2020

1. **Sommerfeld, M. and Schmalfuß, S.**
Characterisation of Particle Mixing Performance in Fluid Phase Resonance Mixers Applying the Euler/Lagrange Approach. *Advanced Powder Technology*, Vol. 31, 139 – 157 (2020)
2. **Duarte, C.A.R., de Souza, F.J., Venturi, D.N. and Sommerfeld, M.**
A numerical assessment of two geometries for reducing elbow erosion. *Particuology*, Vol. 49, 117 – 133 (2020)
3. **Muniz, M. and Sommerfeld, M.**
On the force competition in bubble columns: A numerical study. *International Journal of Multiphase Flow*, Vol.128, 103256 (2020)
4. **Shi, W., Yang, X., Sommerfeld, M., Yang, J., Cai, X., and Li, G.**
A Modified Bubble Breakage and Coalescence Model Accounting the Effect of Bubble-Induced Turbulence for CFD-PBM Modelling of Bubble Column Bubbly Flows. *Flow, Turbulence and Combustion*, DOI 10.1007/s 10494-020-00163-9 (2020)

Publikationen in Zeitschriften im Jahr 2019

1. **Sgrott Junior, O.L. and Sommerfeld, M.**
Influence of inter-particle collisions and agglomeration on cyclone performance and collection efficiency. *Canadian Journal Chemical Engineering*, Vol. 97, 511 – 522 (2019)
2. **Lain, S. and Sommerfeld, M.**
Numerical prediction of particle erosion of pipe bends. *Advanced Powder Technology*, Vol. 30, 366 – 383 (2019)
3. **Sommerfeld, M., Cui, Y. and Schmalfuß, S.**
Potentials and Constraints for the Application of CFD Combined with Lagrangian Particle Tracking to Dry Powder Inhalers. *European Journal of Pharmaceutical Sciences*, Vol. 128, 299 – 324 (2019)
4. **Cui, Y. and Sommerfeld, M.**
The modelling of carrier-wall collision with drug particle detachment for dry powder inhaler applications. *Powder Technology*, Vol. 344, 741 – 755 (2019)
5. **Ernst, M., Sommerfeld, M. and Lain, S.**
Quantification of preferential concentration of colliding particles in a homogeneous isotropic turbulent flow. *International Journal Multiphase Flow*, Vol. 117, 163 – 181 (2019)
6. **Sommerfeld, M. and Pasternak, L.**
Advances in Modelling of Binary Droplet Collision Outcomes: A review of available results. *International Journal of Multiphase Flow*, Vol. 117, 182 – 205 (2019)
7. **Shi, W., Yang, X., Sommerfeld, M., Yang, J., Cai, X., Li, G., Zong, Y.**
Modelling of mass transfer for gas-liquid two-phase flow in bubble column reactor with a bubble breakage model considering bubble-induced turbulence. *Chemical Engineering Journal*, Vol. 371, 470–485 (2019)

Publikationen in Zeitschriften im Jahr 2018

1. **Koullapis, P., Kassinos, S.C., Muela, J., Segarra, C., Rigola, J., Lehmkuhl, O., Cui, Y., Sommerfeld, M., Elcner, J., Jisha, M., Saveljic, I., Filipovic, N. Lizal, F. and Nicolaou, L.**
Regional aerosol deposition in the human airways: The SimInhale benchmark case and a critical assessment of in silico methods. *European Journal of Pharmaceutical Sciences*, Vol. 113, 77 – 94 (2018)
2. **Cui, Y. and Sommerfeld, M.**
Application of Lattice-Boltzmann Method for Analysing Detachment of Micron-Sized Particles from Carrier Particles in Turbulent Flows. *Flow Turbulence and Combustion*, Vol. 100, 271 – 297 (2018)
3. **Sommerfeld, M. and Qadir, Z.**
Fluid dynamic forces acting on irregular shaped particles: Simulations by the Lattice-Boltzmann method. *International Journal Multiphase Flows*, Vol. 101, 212 – 222 (2018)

4. **Sommerfeld, M. and Lain, S.**
Stochastic modelling for capturing the behaviour of irregular-shaped non-spherical particles in confined turbulent flows. Powder Technology, Vol. 332, 253 – 264 (2018)
 5. **Ariane, M., Sommerfeld, M. and Alexiadis, A.**
Wall collision and drug-carrier detachment in dry powder inhalers: Using DEM to devise a sub-scale model for CFD calculations. Powder Technology, Vol. 334, 65 – 75 (2018)
 6. **Sommerfeld, M., Muniz, M. and Reichardt, Th.**
On the importance of modelling bubble dynamics for point-mass numerical calculations of bubble columns. Journal of Chemical Engineering of Japan, Vol. 51, 301 – 317 (2018)
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Publikationen in Zeitschriften im Jahr 2017

1. **Reichardt, Th., Tryggvason, G. and Sommerfeld, M.**
Effect of velocity fluctuations on the rise of buoyant bubbles. Computers and Fluid, Vol. 150, 8 – 30 (2017)
 2. **Sommerfeld, M. and Stübing, S.**
A novel Lagrangian agglomerate structure model. Powder Technology, Vol. 319, 34 – 52 (2017)
 3. **Schmalfuß, S. and Sommerfeld, M.**
Numerical and experimental analysis of Fluid Phase Resonance mixers. Chemical Engineering Science, Vol. 173, 570 – 577 (2017)
 4. **Lain, S. and Sommerfeld M.**
Influence of inter-particle collisions on erosion of pipe bends. ERCOFTAC Bulletin, No. 112, 10 – 16 (2017)
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Publikationen in Zeitschriften im Jahr 2016

1. **Sommerfeld, M. and Schmalfuß, S.**
Numerical analysis of carrier particle motion in dry powder inhaler. ASME Journal of Fluid Engineering, Vol. 138, April 2016, 041308-1 to 12.
 2. **Süverkrüp, R. Eggerstedt, S., Wanning, S., Kuschel, M., Sommerfeld, M. and Lamprecht, A.**
Collisions and coalescence in droplet streams for the production of freeze-dried powders. Colloids and Surfaces B: Biointerfaces, Vol. 141, 443–449 (2016)
 3. **Dietzel, M., Ernst, M. and Sommerfeld, M.**
Application of the Lattice-Boltzmann method for particle-laden flows: Point-particles and fully resolved particles. Flow, Turbulence and Combustion, Vol. 97, 539–570 (2016), DOI: 10.1007/s10494-015-9698-x, Jan. 2016
 4. **Sommerfeld, M. and Kuschel, M.**
Modelling droplet collision outcomes for different substances and viscosities. Experiments in Fluids, Vol. 57: 187 (2016)
-

Publikationen in Zeitschriften im Jahr 2015

1. **Sommerfeld, M. and Lain, S.**
Parameters influencing dilute-phase pneumatic conveying through pipe systems: A computational study by the Euler/Lagrange approach. The Canadian Journal of Chemical Engineering, Vol. 93, 1-17 (2015); John Wiley & Sons, Inc., Oxford, UK; ISSN 0008-4034, Online ISSN: 1939-019X
 2. **Cui, Y. and Sommerfeld, M.**
Forces on micron-sized particles randomly distributed on the surface of larger particles and possibility of detachment. International Journal Multiphase Flow, Vol. 72, 39 – 52 (2015); Elsevier Oxford, New York, Amsterdam, Boston, Jena u.a.; ISSN 0301-9322 (Print)
 3. **Sommerfeld, M. and Schmalfuß, S.**
Numerical analysis of carrier particle motion in dry powder inhaler. ASME Journal of Fluid Engineering, Vol. 138, April 2016, 041308-1 to 12.
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Publikationen in Zeitschriften im Jahr 2014

1. **Horender, S., Schaub, F. und Sommerfeld, M.**
Größenaufgelöste Messungen von Tröpfchengeschwindigkeiten in einem Elektroabscheider. Chemie-Ingenieur Technik, Vol. 86, 1-9 (2014); Wiley-VCH Verlag, Weinheim, ISSN 0009-286X (Print), 1522-2640 (online)
2. **Cui, Y., Schmalfuß, S., Zellnitz, S., Sommerfeld, M. and Urbanetz, N.**
Towards the optimisation and adaptation of dry powder inhalers. International Journal of Pharmaceutics, Vol. 470, 120 – 132 (2014); Elsevier, Amsterdam, Berlin; ISSN 0378-5173
3. **Soriano-Palao, O.J., Sommerfeld, M. and Burkhardt, A.**
Modelling the influence of the nozzle geometry on the primary breakup of Diesel jets. International Journal of Spray and Combustion Dynamics, Vol. 6, 113-145 (2014); Multi-Science, UK, ISSN 1756-8277
4. **Quintero Arboleda, B., Qadir, Z., Sommerfeld, M. and Lain, S.**
Modelling the wall collision of regular non-spherical particles and experimental validation. Proceedings of the ASME 2014 4th Joint US-European Fluids Engineering Division Summer Meeting; FEDSM2014; August 3-7, 2014, Chicago, Illinois, USA, Paper No. FEDSM2014-21610 (2014); Proc. ASME. 46247; Volume 1D, ISBN: 978-0-7918-4623-0; 12 pages
5. **Lain, S. and Sommerfeld, M.**
Prediction of horizontal gas–solid flows under different gravitational fields. Advances in Space Research, Vol. 54 1949–1962 (2014); Elsevier,

Publikationen in Zeitschriften im Jahr 2013

1. **Lain, S. and Sommerfeld, M.**
Characterisation of pneumatic conveying systems using the Euler/Lagrange approach. *Powder Technology*, Vol. 235, 764-782 (2013)
2. **Kuschel, M. and Sommerfeld, M.**
Investigation of droplet collisions for solutions with different solids content. *Experiments in Fluids*, Vol. 54, 1-17 (2013)
3. **Schomburg, H., Dietzel, M., Sommerfeld, M., Michaelis, B. and Teike, G.**
Lattice-Boltzmann model with dynamic grid refinement for simulating particle deposition on a single fibre. *Journal of Computational Multiphase Flows*, Vol. 5, 1-26, 2013
4. **Focke, C., Kuschel, M., Sommerfeld, M. and Bothe, D.**
Collision between high and low viscosity droplets: Direct Numerical Simulations and experiments. *International Journal of Multiphase Flow*, Vol. 56, 81–92 (2013)
5. **Schlauch, E., Ernst, M., Seto, R., Briesen, H., Sommerfeld, M. and Behr, M.**
Comparison of three simulation methods for colloidal aggregates in Stokes flow: finite elements, Lattice-Boltzmann and Stokesian dynamics. *Computers and Fluids*, Vol. 86, 199-206 (2013)
6. **Schmalfuß, S., Säuberlich, R. und Sommerfeld, M.**
Verbesserung des Fluidphasenresonanzmischers mit OpenFOAM. *Chemie-Ingenieur Technik*, Vol. 85, 1934-1940 (2013)
7. **Ernst, M., Dietzel, M. and Sommerfeld, M.**
A lattice Boltzmann method for simulating transport and agglomeration of resolved particles. *Acta Mechanica*, Vol. 224, 2425-2449 (2013)
8. **Dietzel, M. and Sommerfeld, M.**
Numerical calculation of flow resistance for agglomerates with different morphology by the Lattice-Boltzmann Method. *Powder Technology*, Vol. 250, 122–137 (2013)
9. **Sommerfeld, M.**
Report on the 13th Workshop on Two-Phase Flow Predictions. *ERCOFTAC Bulletin*, No. 95 (2013)

Publikationen in Zeitschriften im Jahr 2012

1. **Lain, S. and Sommerfeld, M.**
Numerical calculation of pneumatic conveying in horizontal channels and pipes: Detailed analysis of conveying behaviour. *International Journal of Multiphase Flow*, Vol. 39, 105–120 (2012)
2. **Teike, G., Dietzel, M., Michaelis, B., Schomburg, H. and Sommerfeld, M.**
Multiscale Lattice-Boltzmann approach for electrophoretic particle deposition. *Aerosol Science and Technology*, Vol. 46, 451-464 (2012).
3. **Schmalfuß, S., Säuberlich, R. und Sommerfeld, M.**
CFD-Simulation und LDA-Messungen der Strömungsvorgänge beim Fluidphasenresonanz-mischen. *Chemie-Ingenieur Technik*, 84, 547 – 552 (2012)
4. **Horender, S. and Sommerfeld, M.**
Evaporation of nearly monosized droplets of hexane, heptane, decane and their mixtures in hot air and an air/steam mixture. *International Journal of Spray and Combustion Dynamics*, Vol. 4, 123 – 154 (2012)
5. **Ernst, M. and Sommerfeld, M.**
On the volume fraction effects on inertial colliding particles in homogeneous isotropic turbulence. *Journal of Fluids Engineering*, Transactions of the ASME, Vol. 134, March 2012, Start Page: 031302, DOI No. 10.1115/1.4005681
6. **Eggerstedt, S. N., Dietzel, M., Sommerfeld, M. Süverkrüp, R., Lamprecht, A.**
Protein spheres prepared by drop jet freeze drying. *International Journal of Pharmaceutics* 438, 160– 166 (2012)

Publikationen in Zeitschriften im Jahr 2011

1. **Weickert, M., Sommerfeld, M., Teike, G. and Iben, U.**
Experimental and numerical investigation of the hydroerosive grinding. *Powder Technology*, Vol. 214, 1 – 13 (2011), Elsevier Verlag, Amsterdam, ISSN 0032-5910
2. **Dietzel, M. Ernst, M. and Sommerfeld, M.**
Application of the Lattice-Boltzmann-Method in two-phase flow studies: From point-particles to fully resolved particles. *Proceedings of ASME-JSME-KSME Joint Fluid Engineering Conference 2011 (AJK2011-FED)* July 2011, Hamamatsu, Shizuoka, Japan, Paper No. AJK2011-04033.
3. **Stübing, S., Dietzel, M. and Sommerfeld, M.**
Modelling agglomeration and the fluid dynamic behaviour of agglomerates. *Proceedings of ASME-JSME-KSME Joint Fluid Engineering Conference 2011 (AJK2011-FED)* July 2011, Hamamatsu, Shizuoka, Japan, Paper No. AJK2011-12025.
4. **Lain, S., Sommerfeld, M. and Botina L.**
Numerical study of horizontal pneumatic conveying of powder in different gravitational environment. *Proceedings of ASME-JSME-KSME Joint Fluid Engineering Conference 2011 (AJK2011-FED)* July 2011, Hamamatsu, Shizuoka, Japan, Paper No. AJK2011-12029.
5. **Lain, S., Sommerfeld, M.**

Publikationen in Zeitschriften im Jahr 2010

1. **Weickert, M., Teike, G., Schmidt O. and Sommerfeld M.**
Investigation of the LES WALE turbulence model within the lattice Boltzmann framework. Computers and Mathematics with Applications, Vol. 59, 2200 - 2214 (2010), Elsevier Ltd., Oxford, ISSN: 0898-1221
2. **Hölzer, A. and Sommerfeld, M.**
Analysis of the behaviour of cylinders in homogeneous isotropic turbulence by Lattice-Boltzmann method. ERCOFTAC Bulletin No.82, 11 – 16 (2010)
3. **Horender, S. and Sommerfeld, M.**
Fluid-particle Correlated Motion and Turbulent Energy Transfer in a Two-dimensional Particle-laden Shear Flow, Chemical Engineering Science, Vol. 65 5075-5091 (2010)

Publikationen in Zeitschriften im Jahr 2009

1. **Hölzer, A. and Sommerfeld, M.**
Lattice Boltzmann simulations to determine drag, lift and torque acting on non-spherical particles. Computers and Fluids Vol. 38, 572-589 (2009)
2. **Sommerfeld, M. and Bröder, D.**
Analysis of hydrodynamics and micro-structure in a bubble column by planar shadow image velocimetry. Industrial & Engineering Chemistry Research, Vol. 48, 330-340 (2009)
3. **Odenthal, H.-J., Rexroth, C.-H., Sommerfeld, M., Ludwig, A., Baake, E. und Thess, A.**
Optimierte Strömungssimulation ermöglicht verbesserte metallurgische Verfahrensabläufe. Stahl und Eisen, Jahrgang. 129, 37 – 46 (2009)
4. **Sommerfeld, M.**
Modelling of atomisation and sprays for technical and industrial applications. ERCOFTAC Bulletin, No. 79 (2009)
5. **Sommerfeld, M. and Lain, S.**
From elementary processes to the numerical prediction of industrial particle-laden flows. Multiphase Science and Technology, Vol. 21, 123 – 140 (2009)
6. **Ernst, M. and Sommerfeld, M.**
Direct numerical simulations of colliding particles suspended in homogeneous isotropic turbulence. Proceedings of the ASME Fluids Engineering Division Summer Meeting, Vail, Colorado, Paper No. FEDSM2009-78072 (2009)
7. **Lain, S. and Sommerfeld, M.**
Structure and Pressure drop in particle-laden gas flow through a pipe bend: A numerical analysis by the Euler/Lagrange approach. Proceedings of the ASME Fluids Engineering Division Summer Meeting, Vail, Colorado, Paper No. FEDSM2009-78090 (2009)
8. **Lain, S., Sommerfeld, M. and Quintero B.**
Numerical simulation of secondary flow in pneumatic conveying of solid particles in a horizontal circular pipe Brazilian Journal of Chemical Engineering, Vol. 26, 583 – 594 (2009) Horender, S. and Hardalupas, Y. Turbulent particle mass flux in a two-phase shear layer. Powder Technology, Vol. 192, 203 – 216 (2009)

Publikationen in Zeitschriften im Jahr 2008

1. **Lain, S. and Sommerfeld, M.**
A study of the pneumatic conveying of non-spherical particles in a turbulent horizontal channel flow. Brazilian Journal of Chemical Engineering, Vol. 24, 535-546 (2007)
2. **Lain, S. and Sommerfeld, M.**
Euler/Lagrange computations of pneumatic conveying in a horizontal channel with different wall roughness. Powder Technology, Vol. 184, 76-88 (2008)
3. **Hölzer, A. and Sommerfeld, M.**
New and simple correlation formula for the drag coefficient of non-spherical particles. Powder Technology Vol. 184, 371-365 (2008)
4. **Lain, S. and Sommerfeld, M.**
EulerTransport characteristics of isometric non-spherical particles in turbulent flows. El Hombre y la Máquina, Año XX, Número 30, 108-117 (2008)
5. **Horender, S., Lipowsky, J., Sommerfeld, M., Schwerin, M. and Badeke, K.-U.**
Deposition of SiO₂ nanoparticles produced in a turbulent H₂/O₂ flame. Aerosol Science and Technology, Vol. 42, 873-883 (2008)

Publikationen in Zeitschriften im Jahr 2007

1. **Prahl, L., Hölzer, A., Arlov, D., Revstedt, J., Sommerfeld, M. and Fuchs, L.**
On the interaction between two fixed spherical particles. International Journal of Multiphase Flow, Vol. 33, 707 - 725 (2007), Elsevier, Oxford; ISSN 030 9322
2. **Bröder, D. and Sommerfeld, M.**
Planar shadow image velocimetry for the analysis of the hydrodynamics in bubbly flows. Measurement Science and Technology, Vol. 18, 2513 – 2528 (2007), Institute of Physics Publishing, Bristol, UK; ISSN 0957-0233
3. **Stübing, S., Horender, S., Sommerfeld, M. und Lübbers, A.**
Untersuchung der Fluidströmung und deren Auswirkung auf die Partikelflugbahn in einem Sprühtrockner. Chemie Ingenieur Technik, Jahrg. 79, 2067-

4. **Hölzer, A. and Sommerfeld, M.**

New and simple correlation formula for the drag coefficient of non-spherical particles. Powder Technology (2007) doi: 10.1016/j.powtec.2007.08.013 (Elsevier, Amsterdam; ISSN 0032-5910)

5. **Lain, S. and Sommerfeld, M.**

Euler/Lagrange computations of pneumatic conveying in a horizontal channel with different wall roughness. Powder Technology (2007) doi: 10.1016/j.powtec.2007.08.021 (Elsevier, Amsterdam; ISSN 0032-5910)

Publikationen in Zeitschriften im Jahr 2006

1. **Göz, M.F., Sommerfeld, M. and Lain, S.**

Instabilities in Lagrangian tracking of bubbles and particles in two-phase flows. AIChE Journal, Vol. 52, 469-477 (2006)

2. **Platzer, E. and Sommerfeld, M.**

Modeling of turbulent atomization combining a two-fluid and a structure function approach. Atomization and Sprays, Vol. 16, 103-126 (2006)

3. **Schaub, F., Sommerfeld, M. and Burgold, M.**

Bubble oscillation and motion in grid generated turbulence. Proceedings of the ASME Joint U.S.-European Fluids Engineering Summer Meeting, Miami, Florida, Paper No. FEDSM2006-98234 (2006)

4. **Konan, A., Lain, S., Simonin, O. and Sommerfeld, M.**

Comparison between Euler-Euler and Euler-Lagrange computations of gas-solid turbulent flow in a horizontal channel with different wall roughness. Proceedings of the ASME Joint U.S.-European Fluids Engineering Summer Meeting, Miami, Florida, Paper No. FEDSM2006-98263 (2006)

5. **Lain, S. and Sommerfeld, M.**

Numerical simulation of the transient three-dimensional gas-liquid flow in a cylindrical bubble column. Proceedings of the ASME Joint U.S.-European Fluids Engineering Summer Meeting, Miami, Florida, Paper No. FEDSM2006-98392 (2006)

6. **Hölzer, A. and Sommerfeld, M.**

Transport of non-spherical particles in turbulence: Application of the LBM. Proceedings of the ASME Joint U.S.-European Fluids Engineering Summer Meeting, Miami, Florida, Paper No. FEDSM2006-98329 (2006)

7. **Schaub, F. and Pluschke, W.**

Turbulent Enhancement of Mass Transfer in Bubble Plumes. Chemical Engineering and Technology, Vol. 29, 1073-1083 (2006)

Publikationen in Zeitschriften im Jahr 2005

1. **Blei, S. und Sommerfeld, M.**

Sprühtrocknung: Einfluss der Elementarprozesse auf Produkteigenschaften. Chemie Ingenieur Technik, Jg. 77, 278-282 (2005)

2. **Ho, C.A. und Sommerfeld, M.**

Numerische Berechnung der Staubabscheidung im Gaszyklon unter Berücksichtigung der Partikelagglomeration. Chemie Ingenieur Technik, Jg. 77, 282-290 (2005)

3. **Mehlheim, J.A., Horender, S. and Sommerfeld, M.**

Modeling of the vortex-structure in a particle-laden mixing-layer. Proceedings of the ASME Fluids Engineering Summer Conference, Houston, Texas, Paper No. FEDSM2005-77040 (2005)

4. **Lipowsky, J. and Sommerfeld, M.**

Time dependent simulation of a swirling two-phase flow using an anisotropic turbulent dispersion model. Proceedings of the ASME Fluids Engineering Summer Conference, Houston, Texas, Paper No. FEDSM2005-77210 (2005)

5. **Verdurmen, R.E.M., Verschuren, M., Gunsing, M., Straatmans, H., Blei, S. and Sommerfeld, M.**

Simulation of agglomeration in spray dryers: the EDECAD project. Le Lait, Vol. 85, 1-9 (2005)

Publikationen in Zeitschriften im Jahr 2004

1. **Sommerfeld, M. and Decker, S.**

State of the art and future trends in CFD simulation of stirred vessel hydrodynamics. Chemical Engineering Technology, Vol. 27, 215-224 (2004)

2. **Verdurmen, R.E.M.; Menn, P.; Ritzert, J.; Blei, S.; Nhumaio, G.C.S.; Sonne-Sorensen, T.; Gunsing, M.; Straatmans, J.; Verschueren, M.; Sibeijn, M.; Dchulte, G.; Fritsching, U.; Bauckhage, K.; Tropea, C.; Sommerfeld, M.; Watkins, A.P.; Yule, A.J. & Schonefeld, H.**

Simulation of agglomeration in spray drying installations: The EDECAD project. Drying Technology, Vol. 22, 1403-1461 (2004)

3. **Lain, S. and Sommerfeld, M.**

Simulación del flujo en un reactor de columna de burbujas. El Hombre y la Máquina, Año XVI, Número 22, 34-47 (2004)

4. **Sommerfeld, M. and J. Kussin, J.**

Wall roughness effects on pneumatic conveying of spherical particles in a narrow horizontal channel. Powder Technology, Vol. 142, 180-192 (2004)

5. **Lain, S., Sommerfeld, M. and Kussin, J.**

Experimental and numerical studies of pressure drop in particle-laden horizontal channel flow. Proceedings 3rd International Symposium on Two-Phase Flow Modelling and Experimentation, Pisa, September 2004.

6. **Göz, M.F., Lain, S., and Sommerfeld, M.**

Study of the numerical instabilities in Lagrangian tracking of bubbles and particles in two-phase flow. Computers and Chemical Engineering, Vol. 28, 2727-2733 (2004)

Publikationen in Zeitschriften im Jahr 2003

1. **Böttner, C.-U. and Sommerfeld, M.**

Messung und numerische Berechnung der Partikelbewegung im Elektroabscheider. Chemie Ingenieur Technik, Jahrg. 75, 188-194 (2003)

2. **Bröder, D. and Sommerfeld, M.**

Combined PIV/PTV-measurements for the analysis of bubble interactions and coalescence in a turbulent flow. The Canadian Journal of Chemical Engineering, Vol. 81, 756-763 (2003)

3. **Ho, C. A. and Sommerfeld, M.**

Numerical study on the effect of agglomeration for the particle separation in a gas cyclone. 4th ASME/JSME Joint Fluids Engineering Conference, Honolulu, Hawaii, Paper No. FEDSM2003-45671 (2003)

4. **Hölzer, A. and Sommerfeld, M.**

Lattice Boltzmann simulations to determine forces acting on non-spherical particles. 4th ASME/JSME Joint Fluids Engineering Conference, Honolulu, Hawaii, Paper No. FEDSM2003-45738 (2003)

5. **Lain, S. and Sommerfeld, M.**

Turbulence modulation in dispersed two-phase flow laden with solids from a Lagrangian perspective. Int. Journal of Heat and Fluid Flow, Vol. 24, 616-625 (2003)

6. **Sommerfeld, M.**

Analysis of collision effects for turbulent gas-particle flow in a horizontal channel: Part I. Particle transport. Int. J. Multiphase Flow, Vol. 29, 675-699 (2003)

7. **Sommerfeld, M., Bourloutski, E. and Bröder, D.**

Euler/Lagrange calculations of bubbly flows with consideration of bubble coalescence. The Canadian Journal of Chemical Engineering, Vol. 81, 508-518 (2003)

8. **Sommerfeld, M. and Bröder, D. (keynote lecture)**

Imaging and pulse light velocimetry applied to bubbly flows. 4th ASME/JSME Joint Fluids Engineering Conference, Honolulu, Hawaii, Paper No. FEDSM2003-45794 (2003)

9. **Sommerfeld, M. and Ho, C.A.**

Numerical calculation of particle transport in turbulent wall bounded flows. Powder Technology, Vol. 131, 1-6 (2003)

10. **Sommerfeld, M. and Kussin, J.**

Analysis of collision effects for turbulent gas-particle flow in a horizontal channel: Part II. Integral properties and validation. Int. J. Multiphase Flow, Vol. 29, 701-718 (2003)

Publikationen in Zeitschriften im Jahr 2002

1. **Böttner, C.-U. and Sommerfeld, M.**

Numerical calculation of electrostatic powder painting using the Euler/Lagrange approach. Powder Technology, Vol. 125, 206-216 (2002)

2. **Bourloutski, E. and Sommerfeld, M.**

Transient RANS/Lagrange calculations of two- and three-phase flows in bubble columns. Engineering Turbulence Modelling and Measurements 5 (Eds. W. Rodi and N. Furea), Elsevier Science, 969-978 (2002)

3. **Bourloutski, E. and Sommerfeld, M.**

Parameter studies on the three-dimensional calculation of bubble columns. Joint US ASME/European Fluids Engineering Summer Conference, Montreal, Paper No. FEDSM 2002-31218 (2002)

4. **Bröder, D. and Sommerfeld, M.**

Experimentelle Untersuchung des Koaleszenzverhaltens von Blasen in turbulenter Strömung. Chemie Ingenieur Technik, Jahrg. 74, 1277-1281 (2002)

5. **Bröder, D. and Sommerfeld, M.**

An advanced LIF-PLV system for analysing the hydrodynamics in a laboratory bubble column at higher void fraction. Experiments in Fluids, 33, 826-837 (2002)

6. **Göz, M. F., Bunner, B., Sommerfeld, M. and Tryggvason, G.**

Microstructure of a bidisperse swarm of spherical bubbles. Joint US ASME/European Fluids Engineering Summer Conference, Montreal, Paper No. FEDSM 2002-31395 (2002)

7. **Göz, M. F., Bunner, B., Sommerfeld, M. and Tryggvason, G.**

Simulation of bidisperse bubbly gas-liquid flows by a parallel finite-difference/front-tracking method, in: E. Krause & W. Jäger (eds.), High Performance Computing in Science and Engineering '01, Springer Verlag, pp. 298-308 (2002)

8. **Göz, M. F., Bunner, B., Sommerfeld, M. and Tryggvason, G.**

Direct numerical simulation of bubble swarms with a parallel front tracking method. In: High Performance Scientific and Engineering Computing (Eds. M. Breuer, F. Durst and C. Zenger), Proc. 3rd Int. FORTWIHR Conf. on HPSEC, Erlangen, March 2001, Springer Verlag, pp. 97-106 (2002)

9. **Ho, C.A. and Sommerfeld, M.**

10. **Kussin, J. and Sommerfeld, M.**
Experimental studies on particle behaviour and turbulence modification in horizontal channel flow with different wall roughness. Experiments in Fluids, Vol. 33, 143-159 (2002)
11. **Lain, S. and Sommerfeld, M.**
Study of turbulence modulation in dispersed two-phase flows from a Lagrangian perspective. Engineering Turbulence Modelling and Measurements 5 (Eds. W. Rodi and N. Fureo), Elsevier Science, 999-1008 (2002)
12. **Lain, S., Bröder, D., Sommerfeld, M. and Göz, M.F.**
Modelling hydrodynamics and turbulence in a bubble column using the Euler-Lagrange procedure. International Journal of Multiphase Flows, Vol. 28, 1381-1407 (2002)
13. **Lain, S., Sommerfeld, M. and Kussin, J.**
Experimental studies and modelling of four-way coupling in particle-laden horizontal channel flow. Int. Journal of Heat and Fluid Flow, Vol. 23, 647-656 (2002)
14. **Sommerfeld, M.**
Kinetic simulations for analysing the wall collision of non-spherical particles. Joint US ASME/European Fluids Engineering Summer Conference, Montreal, Paper No. FEDSM 2002-31239 (2002)

Publikationen in Zeitschriften im Jahr 2001

-

Publikationen in Zeitschriften im Jahr 2000

1. **Decker, S. and Sommerfeld, M.**
Numerical calculations of two-phase flows in agitated vessels using the Euler/Lagrange approach, Proc. of the ASME 2000 Fluid Engineering Division Summer Meeting, Paper No. FEDSM'00-11154 (2000)
2. **Göz, M. F., Sommerfeld, M., Bunner, B. and Tryggvason, G.**
The unsteady dynamics of two-dimensional bubbles in a regular array, Proc. of the ASME 2000 Fluid Engineering Division Summer Meeting, Paper No. FEDSM'00-11151 (2000)
3. **Häder, R., Kohnen, G. und Sommerfeld, M.**
Experimentelle und numerische Analyse von Turbulenzeffekten in verdampfenden Sprühnebeln, Chemie Ingenieur Technik, Jahrg. 72, 621-626 (2000)
4. **Hussainov, M., Kartushinsky, A., Rudi, Ü., Shcheglov, I., Kohnen, G. and Sommerfeld, M.**
Experimental investigation of turbulence modification by rough solid particles in a grid-generated flow, Proc. Estonian Acad. Sci. Eng., Vol. 6, 217-229 (2000)
5. **Hussainov, M., Kartushinsky, A., Rudi, Ü., Shcheglov, I., Kohnen, G. and Sommerfeld, M.**
Experimental investigation of turbulence modification by solid particles in a grid-generated vertical flow, Int. J. of Heat and Fluid Flow, Vol. 21, 365-373 (2000)
6. **Lain, S. and Göz, M. F.**
Instabilities in numerical simulations of dispersed two-phase flow, Mech. Res. Comm., Vol. 27, 475-483 (2000)
7. **Qiu, H.-H., Jia, W., Hsu, C.T. and Sommerfeld, M.**
High accuracy optical particle sizing in phase-Doppler anemometry, Measurement Science Technology, Vol. 11, 142-151 (2000)
8. **Rüger, M., Hohmann, S., Sommerfeld, M. and Kohnen, G.**
Euler/Lagrange calculations of turbulent sprays: The effect of droplet collisions and coalescence, Atomization and Sprays, Vol. 10, 47-81 (2000)
9. **Sircar, R., Tamm, U., Eigenwillig, S. und Säuberlich, R.**
27 BlmSchV - Stand und Entwicklung bei der Umsetzung, Umwelt, Nr. 4/5, 50-53 (2000)
10. **Sommerfeld, M., Kartushinsky, A. I., Kohnen, G., Rudi, Y. A., Hussainov, M. T. and Shcheglov, I. N.**
Experimental investigation of the influence of large particles on the grid turbulence dissipation in a two-phase flow, Mechanics of Fluid and Gas (in Russian), No. 6, 93-105 (2000)
11. **Tamm, U., Sircar, R. und Säuberlich, R.**
Technik der Feuerbestattung in Deutschland, Friedhofskultur, März (2000)

Publikationen in Zeitschriften im Jahr 1999

1. **Böttner, C.-U., Kohnen, G. and Sommerfeld, M.**
Numerical calculation of the behaviour of charged particles in turbulent two-phase flows, 8th Int. Symposium on Gas-Particle Flows, ASME Summer Meeting, Paper FEDSM99-7878 (1999)
2. **Decker, S. und Sommerfeld, M.**
Numerische Berechnung der Konzentrationsverteilung in zweiphasigen Rührwerksströmungen mit dem Euler/Lagrange Verfahren, Chemische Technik, Jahrg. 51, 245-248 (1999)
3. **Hussainov, M., Kartushinsky, A., Rudi, Ü., Shcheglov, I., Kohnen, G. and Sommerfeld, M.**
Modification of grid-generated turbulence in air-dust flow, 8th Int. Symposium on Gas-Particle Flows, ASME Summer Meeting, Paper FEDSM99-7878 (1999)

4. **Lain, S., Bröder, D. and Sommerfeld, M.**
Experimental and numerical studies of the hydrodynamics in a bubble column, Chemical Engineering Science, Vol. 54, 4913-4920 (1999)
5. **Sommerfeld, M.**
Modelling and numerical calculation of turbulent gas-solid flows with the Euler/Lagrange approach, KONA (Powder and Particle), No. 16, 194-206 (1999)
6. **Sommerfeld, M. and Huber, N.**
Experimental analysis and modelling of particle-wall collisions, International Journal of Multiphase Flow, Vol. 25, 1457-1489 (1999)

Publikationen in Zeitschriften im Jahr 1998

1. **Kohnen, G. und Sommerfeld, M.**
Numerische Berechnung verdampfender Sprühnebel, Chemische Technik, Jahrg. 50, 225-234 (1998)
2. **Mundo, Chr., Sommerfeld, M. and Tropea, C.**
On the modelling of liquid sprays impinging on surfaces, Atomization and Sprays, Vol. 8, 625-652 (1998)
3. **Sommerfeld, M.**
Analysis of isothermal and evaporating sprays using phase-Doppler anemometry and numerical calculations, International Journal of Heat and Fluid Flow, Vol. 19, 173-186 (1998)
4. **Sommerfeld, M.**
A stochastic approach to model inter-particle collisions in the frame of the Euler/Lagrange approach, ERCOFTAC Bulletin, No. 36, 34-37 (1998)
5. **Sommerfeld, M.**
Modellierung von Partikelkollisionen mit dem Euler/Lagrange-Verfahren (Kurzfassung), Chemie Ingenieur Technik, Jahrg. 70, 1140 (1998)
6. **Sommerfeld, M. and Huber, N.**
Modelling and numerical calculation of dilute-phase pneumatic conveying in pipe systems, Powder Technology, Vol. 99, 90-101 (1998)
7. **Sommerfeld, M. and Qiu, H.-H.**
Experimental studies of spray evaporation in turbulent flows, International Journal of Heat and Fluid Flow, Vol. 19, 10-22 (1998)

Publikationen in Zeitschriften im Jahr 1997

1. **Domnick, J., Sommerfeld, M., Lindenthal, A. und Rüger, M.**
Oversprayarme Spritzlackiertechnik: Auftragswirkungsgrad und Schichtdickenverteilung der pneumatischen Spritzlackierung vorhersagen, Teil 2. MO, Metalloberfläche, Beschichten von Metall und Kunststoff, Jahrg. 51, 43-45 (1997)
2. **Panidis, Th. and Sommerfeld, M.**
The locus of centres method for LDA and PDA measurements, Developments in Laser Techniques and Application to Fluid Mechanics (Eds. R.J. Adrian D.F.G. Durao, F. Durst, M.V. Heitor, M. Maeda, J. Whitelaw), selected Papers of the Eighth International Symposium on Applications of Laser Technique to Fluid Mechanics, Lisbon, Portugal, to appear Springer Verlag (1997)
3. **Sommerfeld, M. and Huber, N. (invited lecture)**
Numerical calculation of dilute-phase pneumatic conveying in complex pipe systems, ASME Fluids Engineering Division Summer Meeting, Seventh International Symposium on Gas-Particle Flows, Paper FEDSM97-3694 (1997)

Publikationen in Zeitschriften im Jahr 1996

1. **Domnick, J., Sommerfeld, M., Lindenthal, A. und Rüger, M.**
Oversprayarme Spritzlackiertechnik: Auftragswirkungsgrad und Schichtdickenverteilung der pneumatischen Spritzlackierung vorhersagen, Teil 1. MO, Metalloberfläche, Beschichten von Metall und Kunststoff, Jahrg. 50, 976-979 (1996)
2. **Vanni, M. and Sommerfeld, M.**
Aggregation of small particles in turbulent liquid flows, Engineering Turbulence Modelling and Experiments 3 (Eds. W. Rodi and G. Bergerles), Proceedings of the Third International Symposium on Engineering Turbulence Modelling and Measurements, 891-900 (1996)

Publikationen in Zeitschriften im Jahr 1995

1. **Berlemont, A., Simonin, O. and Sommerfeld, M.**
Validation of inter-particle collision models based on large-eddy simulations, Gas-Particle Flows (Eds. D.E. Stock, M.W. Reeks, Y. Tsuji, E.E. Michaelides and M. Gautam), ASME Fluids Engineering Conference, Hiltons Head, USA, ASME FED-Vol. 228, 359-369 (1995)
 2. **Domnick, J. und Sommerfeld, M.**
Computergestützt Lackieren: Numerische Berechnung der Sprühlackierung, Metalloberflächen, Jahrg. 49, 52-61 (1995)
 3. **Huber, N., Rüger, M. und Sommerfeld, M.**
Numerische Simulation pneumatischer Förderung im Bereich der Flugförderung, GVC-Jahrbuch 1995, 179-196 (1995)
 4. **Mundo, Chr., Sommerfeld, M. and Tropea, C.**
Droplet-wall collisions: Experimental studies of the deformation and breakup process, International Journal Multiphase Flow, Vol. 21, 151-173 (1995)
-