Martin WÃ¶rner

List of Publications by Year
in descending order

54 papers	1,199 citations	393982 19 h-index	377514 34 g-index
57 all docs	57 docs citations	57 times ranked	1024 citing authors

#	Article	IF	Citations
1	Bubble Cutting by Cylinder â€“ Elimination of Wettability Effects by a Separating Liquid Film. Chemie-Ingenieur-Technik, 2022, 94, 385-392.	0.4	4
2	Interfacial relaxation â€“ Crucial for phase-field methods to capture low to high energy drop-film impacts. International Journal of Heat and Fluid Flow, 2022, 94, 108943.	1.1	8
3	A unified finite volume framework for phaseâ€field simulations of an arbitrary number of fluid phases. Canadian Journal of Chemical Engineering, 2022, 100, 2291-2308.	0.9	2
4	A step toward the numerical simulation of catalytic hydrogenation of nitrobenzene in Taylor flow at practical conditions. Chemical Engineering Science, 2021, 230, 116132.	1.9	12
5	Simulation of droplet impingement on a rigid square obstacle in a microchannel using multiphase lattice Boltzmann method. Computational Particle Mechanics, 2021, 8, 973-991.	1.5	6
6	Advected phase-field method for bounded solution of the Cahnâ€“Hilliard Navierâ€“Stokes equations. Physics of Fluids, 2021, 33, .	1.6	12
7	Spreading and rebound dynamics of sub-millimetre urea-water-solution droplets impinging on substrates of varying wettability. Applied Mathematical Modelling, 2021, 95, 53-73.	2.2	26
8	Evaluation of models for bubble-induced turbulence by DNS and utilization in two-fluid model computations of an industrial pilot-scale bubble column. Chemical Engineering Research and Design, 2021, 175, 283-295.	2.7	3
9	Bouncing drop impingement on heated hydrophobic surfaces. International Journal of Heat and Mass Transfer, 2021, 180, 121777.	2.5	20
10	Numerical simulation of drop impingement and bouncing on a heated hydrophobic surface. Journal of Physics: Conference Series, 2021, 2116, 012073.	0.3	0
11	Suppressing artificial equilibrium states caused by spurious currents in droplet spreading simulations with dynamic contact angle model. Progress in Computational Fluid Dynamics, 2020, 20, 59.	0.1	3
12	Hydrodynamische Charakterisierung der TaylorstrÃ¶mung in kreisfÃ¶rmigen Kapillaren auf Basis vorab bekannter Parameter. Chemie-Ingenieur-Technik, 2020, 92, 1321-1322.	0.4	0
13	A Qualitative Numerical Study on Catalytic Hydrogenation of Nitrobenzene in Gas-Liquid Taylor Flow with Detailed Reaction Mechanism. Fluids, 2020, 5, 234.	0.8	3
14	A Correlation for the Characteristic Velocity Ratio to Predict Hydrodynamics of Capillary Gasâ€“Liquid Taylor Flow. Theoretical Foundations of Chemical Engineering, 2020, 54, 3-16.	0.2	4
15	Influence of liquid composition on diffusive mass transfer in the lubricating film of Taylor flowâ€"A study related to the hydrogenation of nitrobenzene. Chemical Engineering and Processing: Process Intensification, 2020, 149, 107835.	1.8	4
16	A Holistic View on Urea Injection for NOx Emission Control: Impingement, Re-atomization, and Deposit Formation. Emission Control Science and Technology, 2020, 6, 228-243.	0.8	12
17	Computational Fluid Dynamics of Catalytic Reactors. , 2020, , 1405-1438.		1
18	Maximum Spreading of Urea Water Solution during Drop Impingement. Chemical Engineering and Technology, 2019, 42, 2419-2427.	0.9	9

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19	On suitability of phase-field and algebraic volume-of-fluid OpenFOAMÂ® solvers for gasâ€"liquid microfluidic applications. Computer Physics Communications, 2019, 236, 72-85.	3.0	25
20	A semi-analytical method to estimate the effective slip length of spreading spherical-cap shaped droplets using Cox theory. Fluid Dynamics Research, 2018, 50, 035501.	0.6	6
21	Drop bouncing by micro-grooves. International Journal of Heat and Fluid Flow, 2018, 70, 271-278.	1.1	30
22	Validation of a numerical method for interface-resolving simulation of multicomponent gas-liquid mass transfer and evaluation of multicomponent diffusion models. Heat and Mass Transfer, 2018, 54, 697-713.	1.2	5
23	Computational Fluid Dynamics of Catalytic Reactors. , 2018, , 1-34.		4
24	CFD Simulation of Liquid Back Suction and Gas Bubble Formation in a Circular Tube with Sudden or Gradual Expansion. Emission Control Science and Technology, 2017, 3, 289-301.	0.8	13
25	Taylor Bubbles in Small Channels: A Proper Guiding Measure for Validation of Numerical Methods for Interface Resolving Simulations. Advances in Mathematical Fluid Mechanics, 2017, , 577-587.	0.1	0
26	Direct Numerical Simulations of Taylor Bubbles in a Square Mini-Channel: Detailed Shape and Flow Analysis with Experimental Validation. Advances in Mathematical Fluid Mechanics, 2017, , 663-679.	0.1	3
27	Numerical and experimental analysis of local flow phenomena in laminar Taylor flow in a square mini-channel. Physics of Fluids, 2016, 28, .	1.6	44
28	Numerical study on the wettability dependent interaction of a rising bubble with a periodic open cellular structure. Catalysis Today, 2016, 273, 151-160.	2.2	22
29	Numerical Simulation of Wetting Phenomena with a Phaseâ€Field Method Using OpenFOAMÂ®. Chemical Engineering and Technology, 2015, 38, 1985-1992.	0.9	49
30	General pure convection residence time distribution theory of fully developed laminar flows in straight planar and axisymmetric channels. Chemical Engineering Science, 2015, 122, 555-564.	1.9	4
31	Validation of Interface Capturing and Tracking techniques with different surface tension treatments against a Taylor bubble benchmark problem. Computers and Fluids, 2014, 102, 336-352.	1.3	35
32	Influence of channel cross-sectional shape on diffusion-free residence time distribution in fully developed laminar Newtonian flow. Chemical Engineering Journal, 2013, 227, 158-165.	6.6	9
33	Toward Improved Closure Relations for the Turbulent Kinetic Energy Equation in Bubbleâ€Driven Flows. Chemie-Ingenieur-Technik, 2013, 85, 1131-1136.	0.4	5
34	Computational Study on Scaling of Co-Current Downward Taylor Flow in Small Square Channels of Three Different Sizes. Journal of Chemical Engineering of Japan, 2013, 46, 335-341.	0.3	4
35	Modeling the diffusion-free liquid phase residence time distribution of Taylor flow by the unit cell concept: Progress and limitations. Chemical Engineering Journal, 2012, 200-202, 380-390.	6.6	8
36	Numerical modeling of multiphase flows in microfluidics and micro process engineering: a review of methods and applications. Microfluidics and Nanofluidics, 2012, 12, 841-886.	1.0	338

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37	Viscous coâ€current downward Taylor flow in a square miniâ€channel. AICHE Journal, 2010, 56, 1693-1702.	1.8	19
38	Approximate residence time distribution of fully develop laminar flow in a straight rectangular channel. Chemical Engineering Science, 2010, 65, 3499-3507.	1.9	24
39	Numerical investigation of the stability of bubble train flow in a square minichannel. Physics of Fluids, 2009, 21, 042108.	1.6	29
40	Recirculation time and liquid slug mass transfer in co-current upward and downward Taylor flow. Catalysis Today, 2009, 147, S125-S131.	2.2	41
41	A qualitative computational study of mass transfer in upward bubble train flow through square and rectangular mini-channels. Chemical Engineering Science, 2009, 64, 1416-1435.	1.9	79
42	Validierte numerische Simulation der Taylor-StrÃ¶mung im quadratischen Mini-Kanal. Chemie-Ingenieur-Technik, 2008, 80, 1302-1303.	0.4	1
43	Critical evaluation of CFD codes for interfacial simulation of bubble-train flow in a narrow channel. International Journal for Numerical Methods in Fluids, 2007, 55, 537-564.	0.9	30
44	A model for the residence time distribution of bubble-train flow in a square mini-channel based on direct numerical simulation results. International Journal of Heat and Fluid Flow, 2007, 28, 83-94.	1.1	39
45	Simulations numÃ©riques dâ€™Ã©coulements diphasiques gaz-liquide par la mÃ©thode de volume fini dans des gÃ©omÃ©tries confines. Houille Blanche, 2005, 91, 91-104.	0.3	8
46	Analysis and modelling of the temperature variance equation in turbulent natural convection for low-Prandtl-number fluids. Journal of Fluid Mechanics, 2005, 525, 237-261.	1.4	41
47	Exploring the flow of immiscible fluids in a square vertical mini-channel by direct numerical simulation. Chemical Engineering Journal, 2004, 101, 285-294.	6.6	28
48	Balance of Liquid-phase Turbulence Kinetic Energy Equation for Bubble-train Flow. Journal of Nuclear Science and Technology, 2004, 41, 331-338.	0.7	11
49	Dreidimensionale numerische Simulation von Einzelblasen und BlasenschwÃ¤rmen mit einer Volume-of-Fluid-Methode. Chemie-Ingenieur-Technik, 2000, 72, 1065-1065.	0.4	7
50	Direct numerical and large eddy simulations in nuclear applications. International Journal of Heat and Fluid Flow, 1999, 20, 222-240.	1.1	56
51	Pressure transport in direct numerical simulations of turbulent natural convection in horizontal fluid layers. International Journal of Heat and Fluid Flow, 1998, 19, 150-158.	1.1	17
52	Direct numerical simulation of turbulence in an internally heated convective fluid layer and implications for statistical modelling. Journal of Hydraulic Research/De Recherches Hydrauliques, 1997, 35, 773-797.	0.7	21
53	Analysis of the transport equation of temperature variance dissipation rate by direct numerical simulation data of natural convection. , 1996, , 229-238.		1
54	Balance of Liquid-phase Turbulence Kinetic Energy Equation for Bubble-train Flow. , 0, .		2