

# Martin WÄrner

## List of Publications by Year in descending order

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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	Numerical modeling of multiphase flows in microfluidics and micro process engineering: a review of methods and applications. <i>Microfluidics and Nanofluidics</i> , 2012, 12, 841-886.	1.0	338
2	A qualitative computational study of mass transfer in upward bubble train flow through square and rectangular mini-channels. <i>Chemical Engineering Science</i> , 2009, 64, 1416-1435.	1.9	79
3	Direct numerical and large eddy simulations in nuclear applications. <i>International Journal of Heat and Fluid Flow</i> , 1999, 20, 222-240.	1.1	56
4	Numerical Simulation of Wetting Phenomena with a Phase-Field Method Using OpenFOAM®. <i>Chemical Engineering and Technology</i> , 2015, 38, 1985-1992.	0.9	49
5	Numerical and experimental analysis of local flow phenomena in laminar Taylor flow in a square mini-channel. <i>Physics of Fluids</i> , 2016, 28, .	1.6	44
6	Analysis and modelling of the temperature variance equation in turbulent natural convection for low-Prandtl-number fluids. <i>Journal of Fluid Mechanics</i> , 2005, 525, 237-261.	1.4	41
7	Recirculation time and liquid slug mass transfer in co-current upward and downward Taylor flow. <i>Catalysis Today</i> , 2009, 147, S125-S131.	2.2	41
8	A model for the residence time distribution of bubble-train flow in a square mini-channel based on direct numerical simulation results. <i>International Journal of Heat and Fluid Flow</i> , 2007, 28, 83-94.	1.1	39
9	Validation of Interface Capturing and Tracking techniques with different surface tension treatments against a Taylor bubble benchmark problem. <i>Computers and Fluids</i> , 2014, 102, 336-352.	1.3	35
10	Critical evaluation of CFD codes for interfacial simulation of bubble-train flow in a narrow channel. <i>International Journal for Numerical Methods in Fluids</i> , 2007, 55, 537-564.	0.9	30
11	Drop bouncing by micro-grooves. <i>International Journal of Heat and Fluid Flow</i> , 2018, 70, 271-278.	1.1	30
12	Numerical investigation of the stability of bubble train flow in a square minichannel. <i>Physics of Fluids</i> , 2009, 21, 042108.	1.6	29
13	Exploring the flow of immiscible fluids in a square vertical mini-channel by direct numerical simulation. <i>Chemical Engineering Journal</i> , 2004, 101, 285-294.	6.6	28
14	Spreading and rebound dynamics of sub-millimetre urea-water-solution droplets impinging on substrates of varying wettability. <i>Applied Mathematical Modelling</i> , 2021, 95, 53-73.	2.2	26
15	On suitability of phase-field and algebraic volume-of-fluid OpenFOAM® solvers for gas-liquid microfluidic applications. <i>Computer Physics Communications</i> , 2019, 236, 72-85.	3.0	25
16	Approximate residence time distribution of fully developed laminar flow in a straight rectangular channel. <i>Chemical Engineering Science</i> , 2010, 65, 3499-3507.	1.9	24
17	Numerical study on the wettability dependent interaction of a rising bubble with a periodic open cellular structure. <i>Catalysis Today</i> , 2016, 273, 151-160.	2.2	22
18	Direct numerical simulation of turbulence in an internally heated convective fluid layer and implications for statistical modelling. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 1997, 35, 773-797.	0.7	21

#	ARTICLE	IF	CITATIONS
19	Bouncing drop impingement on heated hydrophobic surfaces. International Journal of Heat and Mass Transfer, 2021, 180, 121777.	2.5	20
20	Viscous co-current downward Taylor flow in a square microchannel. AIChE Journal, 2010, 56, 1693-1702.	1.8	19
21	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
22	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
23	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
24	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
25	Advected phase-field method for bounded solution of the Cahn-Hilliard Navier-Stokes equations. Physics of Fluids, 2021, 33, .	1.6	12
26	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
27	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
28	Maximum Spreading of Urea Water Solution during Drop Impingement. Chemical Engineering and Technology, 2019, 42, 2419-2427.	0.9	9
29	Simulations numériques des écoulements diphasiques gaz-liquide par la méthode de volume fini dans des géométries confinées. Houille Blanche, 2005, 91, 91-104.	0.3	8
30	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
31	Interfacial relaxation – 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
32	Dreidimensionale numerische Simulation von Einzelblasen und Blasenschwärmen mit einer Volume-of-Fluid-Methode. Chemie-Ingenieur-Technik, 2000, 72, 1065-1065.	0.4	7
33	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
34	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
35	Toward Improved Closure Relations for the Turbulent Kinetic Energy Equation in Bubble-Driven Flows. Chemie-Ingenieur-Technik, 2013, 85, 1131-1136.	0.4	5
36	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

#	ARTICLE	IF	CITATIONS
37	General pure convection residence time distribution theory of fully developed laminar flows in straight planar and axisymmetric channels. <i>Chemical Engineering Science</i> , 2015, 122, 555-564.	1.9	4
38	Computational Fluid Dynamics of Catalytic Reactors. , 2018, , 1-34.		4
39	A Correlation for the Characteristic Velocity Ratio to Predict Hydrodynamics of Capillary Gas-Liquid Taylor Flow. <i>Theoretical Foundations of Chemical Engineering</i> , 2020, 54, 3-16.	0.2	4
40	Influence of liquid composition on diffusive mass transfer in the lubricating film of Taylor flow—A study related to the hydrogenation of nitrobenzene. <i>Chemical Engineering and Processing: Process Intensification</i> , 2020, 149, 107835.	1.8	4
41	Computational Study on Scaling of Co-Current Downward Taylor Flow in Small Square Channels of Three Different Sizes. <i>Journal of Chemical Engineering of Japan</i> , 2013, 46, 335-341.	0.3	4
42	Bubble Cutting by Cylinder – Elimination of Wettability Effects by a Separating Liquid Film. <i>Chemie-Ingenieur-Technik</i> , 2022, 94, 385-392.	0.4	4
43	Direct Numerical Simulations of Taylor Bubbles in a Square Mini-Channel: Detailed Shape and Flow Analysis with Experimental Validation. <i>Advances in Mathematical Fluid Mechanics</i> , 2017, , 663-679.	0.1	3
44	Suppressing artificial equilibrium states caused by spurious currents in droplet spreading simulations with dynamic contact angle model. <i>Progress in Computational Fluid Dynamics</i> , 2020, 20, 59.	0.1	3
45	A Qualitative Numerical Study on Catalytic Hydrogenation of Nitrobenzene in Gas-Liquid Taylor Flow with Detailed Reaction Mechanism. <i>Fluids</i> , 2020, 5, 234.	0.8	3
46	Evaluation of models for bubble-induced turbulence by DNS and utilization in two-fluid model computations of an industrial pilot-scale bubble column. <i>Chemical Engineering Research and Design</i> , 2021, 175, 283-295.	2.7	3
47	Balance of Liquid-phase Turbulence Kinetic Energy Equation for Bubble-train Flow. , 0, .		2
48	A unified finite volume framework for phase-field simulations of an arbitrary number of fluid phases. <i>Canadian Journal of Chemical Engineering</i> , 2022, 100, 2291-2308.	0.9	2
49	Validierte numerische Simulation der Taylor-Strömung im quadratischen Mini-Kanal. <i>Chemie-Ingenieur-Technik</i> , 2008, 80, 1302-1303.	0.4	1
50	Analysis of the transport equation of temperature variance dissipation rate by direct numerical simulation data of natural convection. , 1996, , 229-238.		1
51	Computational Fluid Dynamics of Catalytic Reactors. , 2020, , 1405-1438.		1
52	Taylor Bubbles in Small Channels: A Proper Guiding Measure for Validation of Numerical Methods for Interface Resolving Simulations. <i>Advances in Mathematical Fluid Mechanics</i> , 2017, , 577-587.	0.1	0
53	Hydrodynamische Charakterisierung der Taylorströmung in kreisförmigen Kapillaren auf Basis vorab bekannter Parameter. <i>Chemie-Ingenieur-Technik</i> , 2020, 92, 1321-1322.	0.4	0
54	Numerical simulation of drop impingement and bouncing on a heated hydrophobic surface. <i>Journal of Physics: Conference Series</i> , 2021, 2116, 012073.	0.3	0