Michiel T Kreutzer

List of Publications by Year
in descending order

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110	5,746	70961	79541
papers	citations	41 h-index	73 g-index

117	117	117	5166
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Multiphase monolith reactors: Chemical reaction engineering of segmented flow in microchannels. Chemical Engineering Science, 2005, 60, 5895-5916.	1.9	540
2	Inertial and interfacial effects on pressure drop of Taylor flow in capillaries. AICHE Journal, 2005, 51, 2428-2440.	1.8	365
3	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si25.gif" display="inline" overflow="scroll"><mml:mi mathvariant="normal">Î¼</mml:mi></mml:math>-PIV study of the formation of segmented flow in microfluidic T-junctions. Chemical Engineering Science, 2007, 62, 7505-7514.	1.9	247
4	Mass transfer characteristics of three-phase monolith reactors. Chemical Engineering Science, 2001, 56, 6015-6023.	1.9	237
5	Predictive model for the size of bubbles and droplets created in microfluidic T-junctions. Lab on A Chip, 2010, 10, 2513.	3.1	210
6	Benchmark numerical simulations of segmented two-phase flows in microchannels using the Volume of Fluid method. Computers and Fluids, 2013, 86, 28-36.	1.3	179
7	Monolithic catalysts as efficient three-phase reactors. Chemical Engineering Science, 2001, 56, 823-829.	1.9	155
8	Liquidâ€“Liquid Flow in a Capillary Microreactor: Hydrodynamic Flow Patterns and Extraction Performance. Industrial & Engineering Chemistry Research, 2012, 51, 1015-1026.	1.8	136
9	Monodisperse hydrogel microspheres by forced droplet formation in aqueous two-phase systems. Lab on A Chip, 2011, 11, 620-624.	3.1	130
10	Hydrodynamic aspects of the monolith loop reactor. Chemical Engineering Science, 2001, 56, 805-812.	1.9	127
11	Flows around Confined Bubbles and Their Importance in Triggering Pinch-Off. Physical Review Letters, 2009, 103, 214501.	2.9	126
12	Weakly bound capping agents on gold nanoparticles in catalysis: Surface poison?. Journal of Catalysis, 2010, 271, 104-114.	3.1	111
13	Dynamics of droplet breakup in a T-junction. Journal of Fluid Mechanics, 2013, 717, .	1.4	110
14	Understanding and Controlling the Aggregative Growth of Platinum Nanoparticles in Atomic Layer Deposition: An Avenue to Size Selection. Journal of Physical Chemistry Letters, 2017, 8, 975-983.	2.1	98
15	Shouldnâ€™t catalysts shape up?. Catalysis Today, 2006, 111, 111-118.	2.2	97
16	Gasâ€“liquid mass transfer of aqueous Taylor flow in monoliths. Catalysis Today, 2001, 69, 51-55.	2.2	89
17	All-aqueous core-shell droplets produced in a microfluidic device. Soft Matter, 2011, 7, 9878.	1.2	89
18	Elastic instabilities during the flow of hydrolyzed polyacrylamide solution in porous media: effect of pore-shape and salt. Soft Matter, 2017, 13, 765-775.	1.2	85

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19	Mechanism of Laccaseâ€“TEMPOâ€Catalyzed Oxidation of Benzyl Alcohol. ChemCatChem, 2010, 2, 827-833.	1.8	77
20	On the fabrication of PDMS micromodels by rapid prototyping, and their use in twoâ€phase flow studies. Water Resources Research, 2013, 49, 2056-2067.	1.7	76
21	Slow growth of the Rayleigh-Plateau instability in aqueous two phase systems. Biomicrofluidics, 2012, 6, 22007-2200711.	1.2	73
22	Scaling-up Multiphase Monolith Reactors:Â Linking Residence Time Distribution and Feed Maldistribution. Industrial & Engineering Chemistry Research, 2005, 44, 4898-4913.	1.8	72
23	Monolithic catalysts as more efficient three-phase reactors. Catalysis Today, 2001, 66, 157-165.	2.2	71
24	Velocity fluctuations of segmented flow in microchannels. Chemical Engineering Journal, 2008, 135, S159-S165.	6.6	66
25	Sample Dispersion for Segmented Flow in Microchannels with Rectangular Cross Section. Analytical Chemistry, 2008, 80, 1558-1567.	3.2	64
26	Is a monolithic loop reactor a viable option for Fischerâ€“Tropsch synthesis?. Chemical Engineering Science, 2003, 58, 583-591.	1.9	60
27	Monolithic Catalysts as an Alternative to Slurry Systems:Â Hydrogenation of Edible Oil. Industrial & Engineering Chemistry Research, 2004, 43, 2337-2344.	1.8	59
28	Photocatalytic Reactor Design: Guidelines for Kinetic Investigation. Industrial & Engineering Chemistry Research, 2019, 58, 5349-5357.	1.8	59
29	Catalyst performance changes induced by palladium phase transformation in the hydrogenation of benzonitrile. Journal of Catalysis, 2010, 274, 176-191.	3.1	55
30	Rapid microfluidic screening of CO2 solubility and diffusion in pure and mixed solvents. Lab on A Chip, 2012, 12, 3387.	3.1	55
31	Design and characterization of bubble-splitting distributor for scaled-out multiphase microreactors. Chemical Engineering Journal, 2014, 236, 545-554.	6.6	52
32	From Single Atoms to Nanoparticles: Autocatalysis and Metal Aggregation in Atomic Layer Deposition of Pt on TiO₂ Nanopowder. Small, 2018, 14, e1800765.	5.2	50
33	Calculating the volume of elongated bubbles and droplets in microchannels from a top view image. RSC Advances, 2015, 5, 16042-16049.	1.7	48
34	Heterogeneously Catalyzed Continuousâ€Flow Hydrogenation Using Segmented Flow in Capillary Columns. ChemCatChem, 2011, 3, 1155-1157.	1.8	47
35	A numerical technique to simulate display pixels based on electrowetting. Microfluidics and Nanofluidics, 2015, 19, 465-482.	1.0	47
36	Polymer conformation during flow in porous media. Soft Matter, 2017, 13, 8745-8755.	1.2	47

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37	Monolithic Catalysts and Reactors. Advances in Catalysis, 2011, 54, 249-327.	0.1	46
38	Scale-Up Study of a Multiphase Photocatalytic Reactorâ€"Degradation of Cyanide in Water over TiO₂. Environmental Science & Technology, 2014, 48, 1574-1581.	4.6	46
39	Structured reactors for enzyme immobilization: advantages of tuning the wall morphology. Chemical Engineering Science, 2004, 59, 5027-5033.	1.9	45
40	Modeling the precursor utilization in atomic layer deposition on nanostructured materials in fluidized bed reactors. Chemical Engineering Journal, 2015, 268, 384-398.	6.6	44
41	Nanoparticle sintering in atomic layer deposition of supported catalysts: Kinetic modeling of the size distribution. Catalysis Today, 2018, 316, 51-61.	2.2	44
42	Scaling down trickle bed reactors. Catalysis Today, 2005, 106, 227-232.	2.2	43
43	Response of an actin network in vesicles under electric pulses. Scientific Reports, 2019, 9, 8151.	1.6	43
44	Catalyst testing in a multiple-parallel, gasâ€"liquid, powder-packed bed microreactor. Applied Catalysis A: General, 2009, 365, 199-206.	2.2	40
45	Transient Behavior and Stability in Miniaturized Multiphase Packed Bed Reactors. Industrial & Engineering Chemistry Research, 2010, 49, 1033-1040.	1.8	40
46	Inhibition of a Gold-Based Catalyst in Benzyl Alcohol Oxidation: Understanding and Remediation. Catalysts, 2014, 4, 89-115.	1.6	40
47	Biofilm growth pattern in honeycomb monolith packings: Effect of shear rate and substrate transport limitations. Catalysis Today, 2005, 105, 448-454.	2.2	39
48	Gas-Phase Deposition of Ultrathin Aluminium Oxide Films on Nanoparticles at Ambient Conditions. Materials, 2015, 8, 1249-1263.	1.3	39
49	Microcapsules with a permeable hydrogel shell and an aqueous core continuously produced in a 3D microdevice by all-aqueous microfluidics. RSC Advances, 2017, 7, 11331-11337.	1.7	39
50	Dispersion and Holdup in Multiphase Packed Bed Microreactors. Chemical Engineering and Technology, 2008, 31, 1130-1139.	0.9	37
51	Gasâ^'Liquid Mass Transfer in Benchscale Stirred TanksFluid Properties and Critical Impeller Speed for Gas Induction. Industrial & Engineering Chemistry Research, 2006, 45, 4574-4581.	1.8	36
52	Actin networks regulate the cell membrane permeability during electroporation. Biochimica Et Biophysica Acta - Biomembranes, 2021, 1863, 183468.	1.4	36
53	Photocatalytic-reactor efficiencies and simplified expressions to assess their relevance in kinetic experiments. Chemical Engineering Journal, 2012, 207-208, 607-615.	6.6	35
54	The pressure drop experiment to determine slug lengths in multiphase monoliths. Catalysis Today, 2005, 105, 667-672.	2.2	34

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55	Monoliths as Biocatalytic Reactors:Â Smart Gasâ"Liquid Contacting for Process Intensification. Industrial & Engineering Chemistry Research, 2005, 44, 9646-9652.	1.8	34
56	Structured Reactors for Enzyme Immobilization. Chemical Engineering Research and Design, 2006, 84, 390-398.	2.7	30
57	Assessing the Role of Pt Clusters on TiO₂ (P25) on the Photocatalytic Degradation of Acid Blue 9 and Rhodamine B. Journal of Physical Chemistry C, 2020, 124, 8269-8278.	1.5	30
58	Potential application of monolith packed columns as bioreactors, control of biofilm formation. Biotechnology and Bioengineering, 2006, 93, 238-245.	1.7	29
59	Avoiding segregation during the loading of a catalystâ€"inert powder mixture in a packed micro-bed. Applied Catalysis A: General, 2009, 365, 110-121.	2.2	29
60	Deposition Mechanism of Aluminum Oxide on Quantum Dot Films at Atmospheric Pressure and Room Temperature. Journal of Physical Chemistry C, 2016, 120, 4266-4275.	1.5	29
61	Fast gasâ€"liquidâ€"solid reactions in monoliths: A case study of nitro-aromatic hydrogenation. Catalysis Today, 2005, 105, 421-428.	2.2	28
62	Tuning the support adsorption properties of Pd/SiO2 by silylation to improve the selective hydrogenation of aromatic ketones. Journal of Catalysis, 2008, 257, 55-63.	3.1	27
63	Kinetic and deactivation modelling of biphenyl liquid-phase hydrogenation over bimetallic Ptâ€"Pd catalyst. Applied Catalysis B: Environmental, 2009, 88, 213-223.	10.8	27
64	Dynamics of droplet formation at T-shaped nozzles with elastic feed lines. Microfluidics and Nanofluidics, 2010, 8, 497-507.	1.0	27
65	Micromolding of solvent resistant microfluidic devices. Lab on A Chip, 2011, 11, 2035.	3.1	26
66	Contact mechanics of highly porous oxide nanoparticle agglomerates. Journal of Nanoparticle Research, 2016, 18, 200.	0.8	26
67	Droplets on Inclined Plates: Local and Global Hysteresis of Pinned Capillary Surfaces. Physical Review Letters, 2014, 113, 066104.	2.9	24
68	A capillary bioreactor to increase methane transfer and oxidation through Taylor flow formation and transfer vector addition. Chemical Engineering Journal, 2013, 217, 91-98.	6.6	23
69	The role of gel-phase domains in electroporation of vesicles. Scientific Reports, 2018, 8, 4758.	1.6	21
70	Synthesis of Anisotropic Gold Nanoparticles by Electrospraying into a Reductive-Surfactant Solution. Chemistry of Materials, 2010, 22, 1656-1663.	3.2	19
71	Scaling of mixing time for droplets of different sizes traveling through a serpentine microchannel. RSC Advances, 2016, 6, 98812-98815.	1.7	19
72	Low-temperature atomic layer deposition delivers more active and stable Pt-based catalysts. Nanoscale, 2017, 9, 10802-10810.	2.8	19

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73	DNA-membrane complex formation during electroporation is DNA size-dependent. Biochimica Et Biophysica Acta - Biomembranes, 2020, 1862, 183089.	1.4	19
74	Axial Mixing in Monolith Reactors:Â Effect of Channel Size. Industrial & Engineering Chemistry Research, 2005, 44, 2046-2057.	1.8	18
75	Product desorption limitations in selective photocatalytic oxidation. Catalysis Today, 2010, 155, 302-310.	2.2	18
76	Tuning roughness and gloss of powder coating paint by encapsulating the coating particles with thin Al 2 O 3 films. Powder Technology, 2017, 318, 401-410.	2.1	18
77	Enhancement of Catalyst Performance Using Pressure Pulses on Macroporous Structured Catalysts. Industrial & Engineering Chemistry Research, 2007, 46, 8574-8583.	1.8	17
78	Control over the formation of supramolecular material objects using reactionâ€“diffusion. Soft Matter, 2019, 15, 4276-4283.	1.2	17
79	Evolution of nonconformal Landau-Levich-Bretherton films of partially wetting liquids. Physical Review Fluids, 2018, 3, .	1.0	16
80	Breakup of elongated droplets in microfluidic T-junctions. Physical Review Fluids, 2019, 4, .	1.0	15
81	Modeling the size distribution in a fluidized bed of nanopowder. Powder Technology, 2017, 312, 347-353.	2.1	13
82	Bubbles scatter light, yet that does not hurt the performance of bubbly slurry photocatalytic reactors. Chemical Engineering Science, 2013, 100, 506-514.	1.9	12
83	Thermal fluctuations in capillary thinning of thin liquid films. Journal of Fluid Mechanics, 2019, 876, 1090-1107.	1.4	12
84	Mechanistic insight into the improved photocatalytic degradation of dyes for an ultrathin coating of SiO2 on TiO2 (P25) nanoparticles. Chemical Engineering Journal Advances, 2022, 10, 100288.	2.4	12
85	Infinite Dilution Binary Diffusion Coefficients of Hydrotreating Compounds in Tetradecane in the Temperature Range from (310 to 475) K. Journal of Chemical & Engineering Data, 2008, 53, 439-443.	1.0	11
86	Increasing the stability of high contraction ratio flow of Boger fluids by pre-deformation. Journal of Non-Newtonian Fluid Mechanics, 2013, 196, 27-35.	1.0	11
87	Characterization of the Stratified Morphology of Nanoparticle Agglomerates. Journal of Physical Chemistry C, 2016, 120, 20446-20453.	1.5	11
88	Hydrodynamic properties of a novel â€˜open wallâ€™ monolith reactor. Catalysis Today, 2005, 105, 385-390.	2.2	10
89	Oriented Attachment and Nanorod Formation in Atomic Layer Deposition of TiO₂ on Graphene Nanoplatelets. Journal of Physical Chemistry C, 2018, 122, 19981-19991.	1.5	10
90	Enhancing the activation of silicon carbide tracer particles for PEPT applications using gas-phase deposition of alumina at room temperature and atmospheric pressure. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 807, 108-113.	0.7	9

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91	Volatile tracer dispersion in multi-phase packed beds. Chemical Engineering Science, 2010, 65, 3972-3985.	1.9	8
92	Transport Limitations during Phase Transfer Catalyzed Ethyl-Benzene Oxidation: Facts and Fictions of â€œHalide Catalysisâ€• ACS Catalysis, 2012, 2, 1421-1424.	5.5	8
93	DNA translocation to giant unilamellar vesicles during electroporation is independent of DNA size. Soft Matter, 2019, 15, 9187-9194.	1.2	8
94	Scalable microfluidic droplet on-demand generator for non-steady operation of droplet-based assays. Lab on A Chip, 2020, 20, 1398-1409.	3.1	8
95	Combined Hydrogenation and Isomerization Combined Hydrogenation and Isomerization under Diffusion Limiting Conditions. Industrial & Engineering Chemistry Research, 2005, 44, 9668-9675.	1.8	7
96	Bottom-mounted ATR probes: Pitfalls that arise from gravitational effects. Catalysis Today, 2007, 126, 184-190.	2.2	7
97	Tailoring the multiphase flow pattern of gas and liquid through micro-packed bed of pillars. Reaction Chemistry and Engineering, 2019, 4, 838-851.	1.9	7
98	Modeling of low-capillary number segmented flows in microchannels using OpenFOAM. , 2012, , .		5
99	Pressure Drop of Taylor Flow in Capillaries: Impact of Slug Length. , 2003, , 519.		4
100	Reaction-diffusion analysis for one-step plasma etching and bonding of microfluidic devices. Applied Physics Letters, 2011, 98, 174102.	1.5	4
101	Diffusion limitations in stagnant photocatalytic reactors. Chemical Engineering Journal, 2014, 247, 314-319.	6.6	4
102	Modeling the size distribution in a fluidized bed of nanopowder. Environmental Science: Nano, 2017, 4, 670-678.	2.2	4
103	Synthesis of a Rationally Designed Multi-Component Photocatalyst Pt:SiO2:TiO2(P25) with Improved Activity for Dye Degradation by Atomic Layer Deposition. Nanomaterials, 2020, 10, 1496.	1.9	3
104	Kinetics of the Wet Oxidation of Phenol over an Fe/Activated Carbon Catalyst. International Journal of Chemical Reactor Engineering, 2007, 5, .	0.6	2
105	Catalysis Engineering on Three Levels. International Journal of Chemical Reactor Engineering, 2003, 1, .	0.6	1
106	Fedâ€Batch Droplet Nanobioreactor for Controlled Growth of Cyberlindnera (Pichia) jadinii : A Proofâ€Ofâ€Concept Demonstration. Advanced Materials Technologies, 2021, 6, 2100083.	3.0	1
107	Influence of initial film radius and film thickness on the rupture of foam films. Physical Review Fluids, 2021, 6, .	1.0	1
108	Monoliths as Biocatalytic Reactors: Smart Gasâ€”Liquid Contacting for Process Intensification. ChemInform, 2006, 37, no.	0.1	0

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109	The Focused Action of Surface Tension Versus the Brute Force of Turbulenceâ€“ Scaleable Microchannel-Based Process Intensification using Monoliths. , 0, , 149-164.		0
110	Modeling and simulation of diffusion-convection-reaction in heterogeneous nanochannels using OpenFOAM. AIP Conference Proceedings, 2016, , .	0.3	0