

# Norbert Kockmann

## List of Publications by Year in descending order

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95  
papers

3,090  
citations

201674

27  
h-index

168389

53  
g-index

99  
all docs

99  
docs citations

99  
times ranked

1984  
citing authors

#	ARTICLE	IF	CITATIONS
1	Novel Process Windows for Enabling, Accelerating, and Uplifting Flow Chemistry. <i>ChemSusChem</i> , 2013, 6, 746-789.	6.8	521
2	Scale-up concept of single-channel microreactors from process development to industrial production. <i>Chemical Engineering Journal</i> , 2011, 167, 718-726.	12.7	193
3	Safety assessment in development and operation of modular continuous-flow processes. <i>Reaction Chemistry and Engineering</i> , 2017, 2, 258-280.	3.7	179
4	Enabling Continuous-flow Chemistry in Microstructured Devices for Pharmaceutical and Fine-chemical Production. <i>Chemistry - A European Journal</i> , 2008, 14, 7470-7477.	3.3	171
5	Liquid-liquid extraction system with microstructured coiled flow inverter and other capillary setups for single-stage extraction applications. <i>Chemical Engineering Journal</i> , 2016, 284, 764-777.	12.7	121
6	Utilization of milli-scale coiled flow inverter in combination with phase separator for continuous flow liquid-liquid extraction processes. <i>Chemical Engineering Journal</i> , 2016, 283, 855-868.	12.7	114
7	Narrow residence time distribution in tubular reactor concept for Reynolds number range of 10-100. <i>Chemical Engineering Research and Design</i> , 2015, 95, 22-33.	5.6	106
8	Scale-up concept for modular microstructured reactors based on mixing, heat transfer, and reactor safety. <i>Chemical Engineering and Processing: Process Intensification</i> , 2011, 50, 1017-1026.	3.6	87
9	Pressure drop and mixing in single phase microreactors: Simplified designs of micromixers. <i>Chemical Engineering and Processing: Process Intensification</i> , 2011, 50, 1069-1075.	3.6	81
10	Axial Dispersion and Heat Transfer in a Milli/Microstructured Coiled Flow Inverter for Narrow Residence Time Distribution at Laminar Flow. <i>Chemical Engineering and Technology</i> , 2015, 38, 1122-1130.	1.5	81
11	Gas-liquid reaction and mass transfer in microstructured coiled flow inverter. <i>Chemical Engineering Science</i> , 2017, 169, 164-178.	3.8	62
12	Fast and Efficient Acquisition of Kinetic Data in Microreactors Using In-Line Raman Analysis. <i>Organic Process Research and Development</i> , 2015, 19, 1286-1292.	2.7	61
13	Design of a Continuous Tubular Cooling Crystallizer for Process Development on Lab-Scale. <i>Chemical Engineering and Technology</i> , 2016, 39, 1268-1280.	1.5	52
14	Analysis of Crystal Size Dispersion Effects in a Continuous Coiled Tubular Crystallizer: Experiments and Modeling. <i>Crystal Growth and Design</i> , 2018, 18, 1459-1473.	3.0	49
15	Selection of Technical Reactor Equipment for Modular, Continuous Small-Scale Plants. <i>Processes</i> , 2014, 2, 265-292.	2.8	45
16	A Unified Research Data Infrastructure for Catalysis Research - Challenges and Concepts. <i>ChemCatChem</i> , 2021, 13, 3223-3236.	3.7	45
17	Enantioseparation of chiral aromatic acids in process intensified liquid-liquid extraction columns. <i>AIChE Journal</i> , 2015, 61, 266-276.	3.6	44
18	Kinetic and Scale-up Investigations of a Michael Addition in Microreactors. <i>Organic Process Research and Development</i> , 2014, 18, 1535-1544.	2.7	43

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19	Continuous Reactive Precipitation in a Coiled Flow Inverter: Inert Particle Tracking, Modular Design, and Production of Uniform CaCO <sub>3</sub> Particles. <i>Industrial &amp; Engineering Chemistry Research</i> , 2017, 56, 11320-11335.	3.7	41
20	Modular Equipment for Chemical Process Development and Small-Scale Production in Multipurpose Plants. <i>ChemBioEng Reviews</i> , 2016, 3, 5-15.	4.4	38
21	Counter-Current Extraction in Microchannel Flow: Current Status and Perspectives. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2014, 136, .	1.5	37
22	Chiral Separation of 3,5-Dinitrobenzoyl-( <i>R</i> )-Leucine in Process Intensified Extraction Columns. <i>Industrial &amp; Engineering Chemistry Research</i> , 2015, 54, 8266-8276.	3.7	37
23	Modules in process industry – A life cycle definition. <i>Chemical Engineering and Processing: Process Intensification</i> , 2017, 111, 115-126.	3.6	37
24	Scalable Equipment for Process Development. <i>Chemie-Ingenieur-Technik</i> , 2012, 84, 646-659.	0.8	31
25	Digital methods and tools for chemical equipment and plants. <i>Reaction Chemistry and Engineering</i> , 2019, 4, 1522-1529.	3.7	31
26	Local Mass Transfer Phenomena and Chemical Selectivity of Gas-Liquid Reactions in Capillaries. <i>Chemical Engineering and Technology</i> , 2017, 40, 2134-2143.	1.5	30
27	Local and overall heat transfer of exothermic reactions in microreactor systems. <i>Reaction Chemistry and Engineering</i> , 2017, 2, 763-775.	3.7	28
28	Suspension flow behavior and particle residence time distribution in helical tube devices. <i>Chemical Engineering Journal</i> , 2019, 360, 1371-1389.	12.7	28
29	Self-optimising processes and real-time-optimisation of organic syntheses in a microreactor system using Nelder-Mead and design of experiments. <i>Reaction Chemistry and Engineering</i> , 2020, 5, 1281-1299.	3.7	27
30	Planning Approach for Modular Plants in the Chemical Industry. <i>Chemie-Ingenieur-Technik</i> , 2017, 89, 785-799.	0.8	26
31	Reaction Calorimetry for Exothermic Reactions in Plate-Type Microreactors Using Seebeck Elements. <i>Chemical Engineering and Technology</i> , 2017, 40, 2144-2154.	1.5	24
32	The Digital Twin – Your Ingenious Companion for Process Engineering and Smart Production. <i>Chemical Engineering and Technology</i> , 2021, 44, 954-961.	1.5	23
33	Highly Sensitive Raman Spectroscopy with Low Laser Power for Fast In-Line Reaction and Multiphase Flow Monitoring. <i>Analytical Chemistry</i> , 2016, 88, 9368-9374.	6.5	22
34	Efficient Kinetic Data Acquisition and Model Prediction: Continuous Flow Microreactors, Inline Fourier Transform Infrared Spectroscopy, and Self-Modeling Curve Resolution. <i>Organic Process Research and Development</i> , 2020, 24, 1955-1968.	2.7	22
35	Safety Aspects during Process Development and Small Scale Production with Microreactors. <i>Chemie-Ingenieur-Technik</i> , 2012, 84, 715-726.	0.8	21
36	Liquid-Liquid Test Reactions to Characterize Two-Phase Mixing in Microchannels. <i>Heat Transfer Engineering</i> , 2013, 34, 169-177.	1.9	21

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37	Smart Equipment – A Perspective Paper. Chemie-Ingenieur-Technik, 2018, 90, 1806-1822.	0.8	21
38	Enhanced heat transfer by exothermic reactions in laminar flow capillary reactors. Chemical Engineering Science, 2016, 141, 356-362.	3.8	19
39	Performance of Laboratory-Scale Stirred-Pulsed Extraction Columns with Different Diameters. Chemie-Ingenieur-Technik, 2017, 89, 1611-1618.	0.8	19
40	Gas-liquid dispersion in micronozzles and microreactor design for high interfacial area. Chemical Engineering Science, 2017, 169, 151-163.	3.8	18
41	Kinetic Study of Leuco-Indigo Carmine Oxidation and Investigation of Taylor and Dean Flow Superposition in a Coiled Flow Inverter. Chemical Engineering and Technology, 2019, 42, 2052-2060.	1.5	17
42	Design of an Automated Reagent-Dispensing System for Reaction Screening and Validation with DNA-Tagged Substrates. ACS Combinatorial Science, 2020, 22, 101-108.	3.8	17
43	Axial Backmixing and Residence Time Distribution in a Miniaturized, Stirred-Pulsed Extraction Column. Chemical Engineering and Technology, 2018, 41, 134-142.	1.5	16
44	Hydrodynamics and Mass Transfer in a Lab-Scale Stirred-Pulsed Extraction Column. Chemical Engineering and Technology, 2018, 41, 1847-1856.	1.5	16
45	Mixing Time Scale Determination in Microchannels Using Reaction Calorimetry. Chemie-Ingenieur-Technik, 2019, 91, 622-631.	0.8	15
46	Arduino-based slider setup for gas-liquid mass transfer investigations: Experiments and CFD simulations. AIChE Journal, 2020, 66, e16953.	3.6	15
47	Continuous Downstream Processing of Amino Acids in a Modular Miniplant. Chemical Engineering and Technology, 2018, 41, 1152-1164.	1.5	13
48	Equipment and Separation Units for Flow Chemistry Applications and Process Development. Chemical Engineering and Technology, 2019, 42, 1985-1995.	1.5	13
49	Modular Coiled Flow Inverter with Narrow Residence Time Distribution for Process Development and Production. Chemie-Ingenieur-Technik, 2019, 91, 567-575.	0.8	13
50	Counter-current arrangement of microfluidic liquid-liquid droplet flow contactors. Green Processing and Synthesis, 2013, 2, .	3.4	12
51	200 Years in Innovation of Continuous Distillation. ChemBioEng Reviews, 2014, 1, 40-49.	4.4	12
52	Parametrische Empfindlichkeit einer stark exothermen Reaktion im Kapillarwendelreaktor. Chemie-Ingenieur-Technik, 2015, 87, 781-790.	0.8	12
53	Model-based scale-up and reactor design for solvent-free synthesis of an ionic liquid in a millistructured flow reactor. Reaction Chemistry and Engineering, 2019, 4, 523-536.	3.7	12
54	Two-Phase Flow in a Coiled Flow Inverter: Process Development from Batch to Continuous Flow. Organic Process Research and Development, 2020, 24, 2094-2104.	2.7	12

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55	Towards a Systematic Data Harmonization to Enable AI Application in the Process Industry. <i>Chemie-Ingenieur-Technik</i> , 2021, 93, 2105-2115.	0.8	12
56	Model-Based Scale-Up Predictions: From Micro- to Millireactors Using Inline Fourier Transform Infrared Spectroscopy. <i>Organic Process Research and Development</i> , 2019, 23, 2020-2030.	2.7	11
57	Micro-computed tomography for the 3D time-resolved investigation of monodisperse droplet generation in a co-flow setup. <i>AIChE Journal</i> , 2021, 67, e17111.	3.6	10
58	Continuous Cooling Crystallization in a Coiled Flow Inverter Crystallizer Technology Design, Characterization, and Hurdles. <i>Processes</i> , 2021, 9, 1537.	2.8	10
59	Advances in Continuous Flow Calorimetry. <i>Organic Process Research and Development</i> , 2022, 26, 267-277.	2.7	10
60	Transport Phenomena and Chemical Reactions in Modular Microstructured Devices. <i>Heat Transfer Engineering</i> , 2017, 38, 1316-1330.	1.9	9
61	Energy Optimization of Gas-Liquid Dispersion in Micronozzles Assisted by Design of Experiment. <i>Processes</i> , 2017, 5, 57.	2.8	9
62	100% Digital Process Industry Impressions and Results from the Tutzing Symposium 2018. <i>Chemie-Ingenieur-Technik</i> , 2018, 90, 1621-1627.	0.8	9
63	In Situ Reaction Monitoring of Unstable Lithiated Intermediates through Inline FTIR Spectroscopy. <i>Chemical Engineering and Technology</i> , 2019, 42, 2095-2104.	1.5	9
64	Simultaneous self-optimisation of yield and purity through successive combination of inline FT-IR spectroscopy and online mass spectrometry in flow reactions. <i>Journal of Flow Chemistry</i> , 2021, 11, 285-302.	1.9	9
65	Flooding Prevention in Distillation and Extraction Columns with Aid of Machine Learning Approaches. <i>Chemie-Ingenieur-Technik</i> , 2021, 93, 1917-1929.	0.8	9
66	Software-guided microscale flow calorimeter for efficient acquisition of thermokinetic data. <i>Journal of Flow Chemistry</i> , 2021, 11, 321-332.	1.9	8
67	Implementation of a Control Strategy for Hydrodynamics of a Stirred Liquid-Liquid Extraction Column Based on Convolutional Neural Networks. <i>ACS Engineering Au</i> , 2022, 2, 369-377.	5.1	8
68	Kinetic Measurement of Acrylic Acid Polymerization at High Concentrations under Nearly Isothermal Conditions in a Pendula Slug Flow Reactor. <i>Industrial &amp; Engineering Chemistry Research</i> , 2021, 60, 4240-4250.	3.7	7
69	Gas-liquid mass transfer intensification for bubble generation and breakup in micronozzles. <i>Journal of Flow Chemistry</i> , 2021, 11, 429-444.	1.9	7
70	Machine Learning Based Suggestions of Separation Units for Process Synthesis in Process Simulation. <i>Chemie-Ingenieur-Technik</i> , 2021, 93, 1930-1936.	0.8	7
71	Miniaturized Tubular Cooling Crystallizer With Solid-Liquid Flow for Process Development. , 2018, , .		6
72	Micro-computed tomography for the investigation of stationary liquid-liquid and liquid-gas interfaces in capillaries. <i>AIChE Journal</i> , 2020, 66, e16890.	3.6	6

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73	Reactor Concept for Contactless Kinetic Measurement in Oscillating Droplets via Raman Spectroscopy. <i>Chemie-Ingenieur-Technik</i> , 2019, 91, 651-656.	0.8	5
74	Spinning Band Distillation Column – Rotating Element Design and Vacuum Operation. <i>Industrial &amp; Engineering Chemistry Research</i> , 2021, 60, 10854-10862.	3.7	5
75	Miniaturized draft tube baffle crystallizer for continuous cooling crystallization. <i>Chemical Engineering Research and Design</i> , 2022, 178, 232-250.	5.6	5
76	Open-source multi-purpose sensor for measurements in continuous capillary flow. <i>Journal of Flow Chemistry</i> , 2022, 12, 185-196.	1.9	5
77	Cooling Crystallization with Complex Temperature Profiles on a Quasi-Continuous and Modular Plant. <i>Processes</i> , 2022, 10, 1047.	2.8	5
78	Detecting flooding state in extraction columns: Convolutional neural networks vs. a white-box approach for image-based soft sensor development. <i>Computers and Chemical Engineering</i> , 2022, 164, 107904.	3.8	5
79	Design and Hydrodynamic Characterization of a Draft Tube Baffle Tank for Lab Scale. <i>Chemie-Ingenieur-Technik</i> , 2020, 92, 288-294.	0.8	4
80	Digital Image Processing of Gas-Liquid Reactions in Coiled Capillaries. <i>Chemie-Ingenieur-Technik</i> , 2021, 93, 825-829.	0.8	4
81	Software-guided Microfluidic Reaction Calorimeter Based on Thermoelectric Modules. <i>Chemie-Ingenieur-Technik</i> , 2021, 93, 802-808.	0.8	4
82	Characterization of an Automated Spinning Band Column as a Module for Laboratory Distillation. <i>Chemical Engineering and Technology</i> , 2021, 44, 1660-1667.	1.5	4
83	Nucleation in continuous flow cooling sonocrystallization for coiled capillary crystallizers. <i>Journal of Flow Chemistry</i> , 2021, 11, 303-319.	1.9	3
84	Efficient Shortcut Method for Determining the Process Window in Stirred Pulsed Extraction Columns. <i>Chemie-Ingenieur-Technik</i> , 2021, 93, 466-472.	0.8	3
85	Reaction Optimization of a Suzuki-Miyaura Cross-Coupling using Design of Experiments. <i>Chemie-Ingenieur-Technik</i> , 0, , .	0.8	3
86	Investigation of Bubble Breakup in Laminar, Transient, and Turbulent Regime Behind Micronozzles. , 2017, , .		2
87	Internal Jet Formation During Bubble Generation in Microchannels. , 2017, , .		2
88	3D investigations of microscale mixing in helically coiled capillaries. <i>Journal of Flow Chemistry</i> , 2021, 11, 217-222.	1.9	2
89	Editorial special issue in the journal of flow chemistry: engineering aspects of flow chemistry. <i>Journal of Flow Chemistry</i> , 2021, 11, 211-212.	1.9	2
90	Oscillating droplet reactor – towards kinetic investigations in heterogeneous catalysis on a droplet scale. <i>Reaction Chemistry and Engineering</i> , 2021, 6, 1023-1030.	3.7	1

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91	Definition, Characterization, and Modeling of Hybrid Modular&Monolithic Process Plants. Chemie-Ingenieur-Technik, 0, , .	0.8	1
92	Chemical engineering curricula and challenges resulting from global megatrends. Qscience Proceedings, 2015, , .	0.0	0
93	Local Mass Transfer Phenomena and Chemical Selectivity of Gas&Liquid Reactions in Capillaries. Chemical Engineering and Technology, 2019, 42, 1536-1537.	1.5	0
94	Application of Polyimide&based Microfluidic Devices on Acid&catalyzed Hydrolysis of Dimethoxypropane. Chemie-Ingenieur-Technik, 2021, 93, 796-801.	0.8	0
95	X&ray based Tomographic Imaging for the Investigation of Laminar Mixing in Capillaries. Chemical Engineering and Technology, 0, , .	1.5	0