Kai Sundmacher

List of Publications by Citations

393 papers	**8,349** citations	**46** h-index	**69** g-index
413 ext. papers	**9,704** ext. citations	**4.7** avg, IF	**6.66** L-index

#	Paper	IF	Citations
393	Sequential bottom-up assembly of mechanically stabilized synthetic cells by microfluidics. *Nature Materials*, **2018**, 17, 89-96	27	211
392	The use of CO stripping for in situ fuel cell catalyst characterization. *Electrochimica Acta*, **2007**, 52, 5606-5613	6.7	203
391	Recent Advances in Enzymatic Fuel Cells: Experiments and Modeling. *Energies*, **2010**, 3, 803-846	3.1	158
390	MaxSynBio: Avenues Towards Creating Cells from the Bottom Up. *Angewandte Chemie - International Edition*, **2018**, 57, 13382-13392	16.4	155
389	Dynamics of the direct methanol fuel cell (DMFC): experiments and model-based analysis. *Chemical Engineering Science*, **2001**, 56, 333-341	4.4	151
388	Towards a methodology for the systematic analysis and design of efficient chemical processes. *Chemical Engineering and Processing: Process Intensification*, **2008**, 47, 2051-2060	3.7	146
387	An Overview of Mutual Solubility of Ionic Liquids and Water Predicted by COSMO-RS. *Industrial & Engineering Chemistry Research*, **2012**, 51, 6256-6264	3.9	125
386	Assessment of Methanol Synthesis Utilizing Exhaust CO2 for Chemical Storage of Electrical Energy. *Industrial & Engineering Chemistry Research*, **2010**, 49, 11073-11078	3.9	112
385	Steady-state multiplicities in reactive distillation columns for the production of fuel ethers MTBE and TAME: theoretical analysis and experimental verification. *Chemical Engineering Science*, **1999**, 54, 1029-1043	4.4	107
384	Reconstruction and analysis of a carbon-core metabolic network for Dunaliella salina. *BMC Bioinformatics*, **2020**, 21, 1	3.6	104
383	Computer-aided design of ionic liquids as solvents for extractive desulfurization. *AICHE Journal*, **2018**, 64, 1013-1025	3.6	97
382	Systematic Method for Screening Ionic Liquids as Extraction Solvents Exemplified by an Extractive Desulfurization Process. *ACS Sustainable Chemistry and Engineering*, **2017**, 5, 3382-3389	8.3	92
381	Steam reforming of glycerol: The experimental activity of La1₋xCexNiO3 catalyst in comparison to the thermodynamic reaction equilibrium. *Applied Catalysis B: Environmental*, **2009**, 90, 29-37	21.8	91
380	Methodology for the Design of Optimal Chemical Reactors Based on the Concept of Elementary Process Functions. *Industrial & Engineering Chemistry Research*, **2010**, 49, 10535-10548	3.9	81
379	Limiting current behaviour of the direct methanol fuel cell. *Electrochimica Acta*, **1999**, 45, 945-957	6.7	81
378	Big Data Creates New Opportunities for Materials Research: A Review on Methods and Applications of Machine Learning for Materials Design. *Engineering*, **2019**, 5, 1017-1026	9.7	78
377	Overview of Surrogate Modeling in Chemical Process Engineering. *Chemie-Ingenieur-Technik*, **2019**, 91, 228-239	0.8	75

376	Fuel Cell Engineering: Toward the Design of Efficient Electrochemical Power Plants. *Industrial & Engineering Chemistry Research*, **2010**, 49, 10159-10182	3.9	73
375	Solid electrolyte membrane reactors: Status and trends. *Catalysis Today*, **2005**, 104, 185-199	5.3	73
374	Toward Artificial Mitochondrion: Mimicking Oxidative Phosphorylation in Polymer and Hybrid Membranes. *Nano Letters*, **2017**, 17, 6816-6821	11.5	71
373	Direct methanol polymer electrolyte fuel cell: Analysis of charge and mass transfer in the vapour liquid solid system. *Chemical Engineering Science*, **1999**, 54, 2927-2936	4.4	70
372	Rate expression for electrochemical oxidation of methanol on a direct methanol fuel cell anode. *Journal of Electroanalytical Chemistry*, **2005**, 580, 105-121	4.1	69
371	Integrated solvent and process design exemplified for a Diels Alder reaction. *AICHE Journal*, **2015**, 61, 147-158	3.6	66
370	Dynamics of CO2 Absorption and Desorption Processes in Alkanolamine with Cosolvent Polyethylene Glycol. *Industrial & Engineering Chemistry Research*, **2012**, 51, 12081-12088	3.9	66
369	Designing biological systems: Systems Engineering meets Synthetic Biology. *Chemical Engineering Science*, **2012**, 69, 1-29	4.4	66
368	Residue curve maps for heterogeneously catalysed reactive distillation of fuel ethers MTBE and TAME. *Chemical Engineering Science*, **1997**, 52, 993-1005	4.4	63
367	Development of a new catalytic distillation process for fuel ethers via a detailed nonequilibrium model. *Chemical Engineering Science*, **1996**, 51, 2359-2368	4.4	62
366	Image-Based in Situ Identification of Face Specific Crystal Growth Rates from Crystal Populations. *Crystal Growth and Design*, **2014**, 14, 952-971	3.5	61
365	Nonlinear frequency response analysis of PEM fuel cells for diagnosis of dehydration, flooding and CO-poisoning. *Journal of Electroanalytical Chemistry*, **2009**, 630, 19-27	4.1	61
364	Deactivation of Modified Iron Oxide Materials in the Cyclic Water Gas Shift Process for CO-Free Hydrogen Production. *Industrial & Engineering Chemistry Research*, **2008**, 47, 303-310	3.9	61
363	Decrease of droplet size of the reverse microemulsion 1-butyl-3-methylimidazolium tetrafluoroborate/Triton X-100/cyclohexane by addition of water. *Journal of Physical Chemistry B*, **2008**, 112, 3711-9	3.4	61
362	Energetic evaluation of high pressure PEM electrolyzer systems for intermediate storage of renewable energies. *Electrochimica Acta*, **2013**, 110, 570-580	6.7	60
361	CO2 methanation: Optimal start-up control of a fixed-bed reactor for power-to-gas applications. *AICHE Journal*, **2017**, 63, 23-31	3.6	59
360	Biological methanation of hydrogen within biogas plants: A model-based feasibility study. *Applied Energy*, **2014**, 134, 413-425	10.7	58
359	Cyclic water gas shift reactor (CWGS) for carbon monoxide removal from hydrogen feed gas for PEM fuel cells. *Chemical Engineering Journal*, **2007**, 134, 168-174	14.7	57

358	Evolution of oxidation states in vanadium-based catalysts under conventional XPS conditions. *Applied Surface Science*, **2005**, 249, 231-237	6.7	55
357	Optimal configuration and pressure levels of electrolyzer plants in context of power-to-gas applications. *Applied Energy*, **2016**, 167, 107-124	10.7	54
356	Hydrogen production from methane by steam reforming in a periodically operated two-layer catalytic reactor. *Applied Catalysis A: General*, **2005**, 289, 121-127	5.1	54
355	Multiple reactions in catalytic distillation processes for the production of the fuel oxygenates MTBE and TAME: Analysis by rigorous model and experimental validation. *Chemical Engineering Science*, **1999**, 54, 2839-2847	4.4	54
354	Molten carbonate fuel cell (MCFC) with internal reforming: model-based analysis of cell dynamics. *Chemical Engineering Science*, **2003**, 58, 1029-1036	4.4	52
353	Simulations of population balance systems with one internal coordinate using finite element methods. *Chemical Engineering Science*, **2009**, 64, 733-741	4.4	51
352	Analysis of the nonlinear dynamics of a direct methanol fuel cell. *Physical Chemistry Chemical Physics*, **2001**, 3, 347-355	3.6	51
351	Synthesis of Single-Crystal Gold Nano- and Microprisms Using a Solvent-Reductant-Template Ionic Liquid. *European Journal of Inorganic Chemistry*, **2008**, 2008, 3769-3775	2.3	48
350	Simultaneous design of the optimal reaction and process concept for multiphase systems. *Chemical Engineering Science*, **2014**, 115, 69-87	4.4	47
349	Simulation based ionic liquid screening for benzene–cyclohexane extractive separation. *Chemical Engineering Science*, **2014**, 113, 45-53	4.4	46
348	Model-based method for the screening of solvents for chemical reactions. *Chemical Engineering Science*, **2014**, 115, 177-185	4.4	46
347	Numerical study of liquid-liquid mixing in helical pipes. *Chemical Engineering Science*, **2017**, 172, 250-261	4.4	46
346	Model-Based Identification and Experimental Validation of the Optimal Reaction Route for the Hydroformylation of 1-Dodecene. *Industrial & Engineering Chemistry Research*, **2015**, 54, 1755-1765	3.9	45
345	Analysis and optimal design of an ethylene oxide reactor. *Chemical Engineering Science*, **2011**, 66, 6453-6469	4.4	45
344	Mass, charge and energy transport phenomena in a polymer electrolyte membrane (PEM) used in a direct methanol fuel cell (DMFC): Modelling and experimental validation of fluxes. *Journal of Membrane Science*, **2006**, 276, 272-285	9.6	45
343	Residue curve maps for reactive distillation systems with liquid-phase splitting. *Chemical Engineering Science*, **2002**, 57, 163-178	4.4	45
342	Precipitation of BaSO4 nanoparticles in a non-ionic microemulsion: Identification of suitable control parameters. *Chemical Engineering Science*, **2005**, 60, 3373-3381	4.4	44
341	On the prediction of crystal shape distributions in a steady-state continuous crystallizer. *Chemical Engineering Science*, **2009**, 64, 686-696	4.4	42

340	Synthesis of cylohexanol by three-phase reactive distillation: influence of kinetics on phase equilibria. *Chemical Engineering Science*, **2002**, 57, 1511-1520	4.4	42
339	Rigorous dynamic model of a direct methanol fuel cell based on Maxwell-Stefan mass transport equations and a Flory-Huggins activity model: Formulation and experimental validation. *Journal of Power Sources*, **2005**, 145, 435-462	8.9	42
338	Robust design of optimal solvents for chemical reactions-A combined experimental and computational strategy. *Chemical Engineering Science*, **2015**, 137, 613-625	4.4	41
337	Out-of-equilibrium microcompartments for the bottom-up integration of metabolic functions. *Nature Communications*, **2018**, 9, 2391	17.4	41
336	A hybrid stochastic-deterministic optimization approach for integrated solvent and process design. *Chemical Engineering Science*, **2017**, 159, 207-216	4.4	40
335	Operation range extension via hot-spot control for catalytic CO_2 methanation reactors. *Reaction Chemistry and Engineering*, **2019**, 4, 1019-1037	4.9	40
334	In-situ measurement of hydrogen crossover in polymer electrolyte membrane water electrolysis. *International Journal of Hydrogen Energy*, **2014**, 39, 49-53	6.7	40
333	Synthesis of ETBE: Residue curve maps for the heterogeneously catalysed reactive distillation process. *Chemical Engineering Journal*, **1997**, 66, 181-191	14.7	40
332	Multicomponent mass and energy transport on different length scales in a packed reactive distillation column for heterogeneously catalysed fuel ether production. *Chemical Engineering Science*, **1994**, 49, 4443-4464	4.4	40
331	Optimal Solvent Design for Extractive Distillation Processes: A Multiobjective Optimization-Based Hierarchical Framework. *Industrial & Engineering Chemistry Research*, **2019**, 58, 5777-5786	3.9	38
330	Evaluation of the ionic liquids 1-alkyl-3-methylimidazolium hexafluorophosphate as a solvent for the extraction of benzene from cyclohexane: (Liquid+liquid) equilibria. *Journal of Chemical Thermodynamics*, **2012**, 48, 145-149	2.9	38
329	Nonlinear dynamics of fuel cells: a review. *Reviews in Chemical Engineering*, **2011**, 27,	5	38
328	Redox behavior and reduction mechanism of Fe_2O_3-CeZrO2 as oxygen storage material. *Journal of Materials Science*, **2007**, 42, 9300-9307	4.3	38
327	Face-Specific Growth and Dissolution Kinetics of Potassium Dihydrogen Phosphate Crystals from Batch Crystallization Experiments. *Crystal Growth and Design*, **2015**, 15, 219-227	3.5	37
326	Crystal Aggregation in a Flow Tube: Image-Based Observation. *Chemical Engineering and Technology*, **2011**, 34, 545-556	2	37
325	Selective oxidation of cyclohexanol to cyclohexanone in the ionic liquid 1-octyl-3-methylimidazolium chloride. *Chemical Communications*, **2011**, 47, 9354-6	5.8	37
324	Improved electrochemical CO removal via potential oscillations in serially connected PEM fuel cells with PtRu anodes. *Electrochimica Acta*, **2009**, 54, 1184-1191	6.7	37
323	VLE and LLE Data for the System Cyclohexane + Cyclohexene + Water + Cyclohexanol. *Journal of Chemical & Engineering Data*, **2004**, 49, 1675-1681	2.8	37

322	Thermomorphic solvent selection for homogeneous catalyst recovery based on COSMO-RS. *Chemical Engineering and Processing: Process Intensification*, **2016**, 99, 97-106	3.7	36
321	Reprint of: Simulation based ionic liquid screening for benzene–cyclohexane extractive separation. *Chemical Engineering Science*, **2014**, 115, 186-194	4.4	36
320	Experimental investigation on a membrane distillation based micro-separator. *Chemical Engineering and Processing: Process Intensification*, **2010**, 49, 425-434	3.7	36
319	A Novel Reactive Distillation Process for the Indirect Hydration of Cyclohexene to Cyclohexanol Using a Reactive Entrainer. *Industrial & Engineering Chemistry Research*, **2008**, 47, 9581-9587	3.9	36
318	CLASSIFICATION OF REACTIVE DISTILLATION PROCESSES BY DIMENSIONLESS NUMBERS. *Chemical Engineering Communications*, **1994**, 127, 151-167	2.2	36
317	CO production from CO_2 via reverse water–gas shift reaction performed in a chemical looping mode: Kinetics on modified iron oxide. *Journal of CO2 Utilization*, **2017**, 17, 60-68	7.6	35
316	Morphology evolution of crystal populations: Modeling and observation analysis. *Chemical Engineering Science*, **2012**, 70, 87-98	4.4	35
315	Autonomous potential oscillations at the Pt anode of a polymer electrolyte membrane fuel cell under CO poisoning. *Electrochimica Acta*, **2011**, 56, 10593-10602	6.7	34
314	Determination of cluster composition in heteroaggregation of binary particle systems by flow cytometry. *Langmuir*, **2008**, 24, 13348-58	4	34
313	Cyclohexanol Production via Esterification of Cyclohexene with Formic Acid and Subsequent Hydration of the Ester–Reaction Kinetics. *Industrial & Engineering Chemistry Research*, **2007**, 46, 10991-11004	3.9	34
312	Modelling and dynamics of an air separation rectification column as part of an IGCC power plant. *Separation and Purification Technology*, **2006**, 49, 136-148	8.3	34
311	Optimal catalyst particle design for flexible fixed-bed CO2 methanation reactors. *Chemical Engineering Journal*, **2020**, 387, 123704	14.7	34
310	Design of optimal multiphase reactors exemplified on the hydroformylation of long chain alkenes. *Chemical Engineering Journal*, **2012**, 188, 126-141	14.7	33
309	Optimal Control of Crystal Shapes in Batch Crystallization Experiments by Growth-Dissolution Cycles. *Crystal Growth and Design*, **2016**, 16, 3297-3306	3.5	33
308	Continuous Crystallization in a Helically Coiled Flow Tube: Analysis of Flow Field, Residence Time Behavior, and Crystal Growth. *Industrial & Engineering Chemistry Research*, **2017**, 56, 3699-3712	3.9	32
307	Comparison of flocculation methods for harvesting Dunaliella. *Bioresource Technology*, **2015**, 196, 145-52	11	32
306	Optimal reaction concept and plant wide optimization of the ethylene oxide process. *Chemical Engineering Journal*, **2012**, 207-208, 656-674	14.7	32
305	Nanoparticle precipitation in reverse microemulsions: particle formation dynamics and tailoring of particle size distributions. *Langmuir*, **2008**, 24, 4320-8	4	32

304	Numerical and analytical investigation of barium sulphate crystallization. *Chemical Engineering Science*, **2006**, 61, 652-664	4.4	32
303	Exergetic assessment of CO2 methanation processes for the chemical storage of renewable energies. *Applied Energy*, **2019**, 233-234, 271-282	10.7	32
302	Model-based Optimal Sabatier Reactor Design for Power-to-Gas Applications. *Energy Technology*, **2017**, 5, 911-921	3.5	31
301	Production of hydrogen with low COx-content for PEM fuel cells by cyclic water gas shift reactor. *International Journal of Hydrogen Energy*, **2008**, 33, 1354-1360	6.7	31
300	Microemulsion-assisted precipitation of particles: Experimental and model-based process analysis. *Chemical Engineering and Processing: Process Intensification*, **2006**, 45, 917-935	3.7	31
299	Hydrogen and Carbon Monoxide Production by Chemical Looping over Iron-Aluminium Oxides. *Energy Technology*, **2016**, 4, 304-313	3.5	31
298	Dynamic Behavior of a PEM Fuel Cell During Electrochemical CO Oxidation on a PtRu Anode. *Topics in Catalysis*, **2008**, 51, 89-97	2.3	30
297	Residue curve maps of reactive membrane separation. *Chemical Engineering Science*, **2004**, 59, 2863-2879	4.4	30
296	Global optimization of distillation columns using explicit and implicit surrogate models. *Chemical Engineering Science*, **2019**, 197, 235-245	4.4	30
295	Steady-state analysis of the Anaerobic Digestion Model No. 1 (ADM1). *Nonlinear Dynamics*, **2013**, 73, 535-549	5	29
294	Kinetic Studies on the Dimerization of Isobutene with Ion-Exchange Resin in the Presence of Water as a Selectivity Enhancer. *Industrial & Engineering Chemistry Research*, **2006**, 45, 1312-1323	3.9	29
293	Systematic Screening of Deep Eutectic Solvents as Sustainable Separation Media Exemplified by the CO2 Capture Process. *ACS Sustainable Chemistry and Engineering*, **2020**, 8, 8741-8751	8.3	29
292	Extending the UNIFAC model for ionic liquid-solute systems by combining experimental and computational databases. *AICHE Journal*, **2020**, 66, e16821	3.6	29
291	Computer-aided solvent selection and design for efficient chemical processes. *Current Opinion in Chemical Engineering*, **2020**, 27, 35-44	5.4	29
290	Nonlinear Frequency Response of Electrochemical Methanol Oxidation Kinetics: A Theoretical Analysis. *Journal of the Electrochemical Society*, **2010**, 157, B1279	3.9	28
289	Model-based prediction of suitable operating range of a SOFC for an Auxiliary Power Unit. *Journal of Power Sources*, **2005**, 149, 53-62	8.9	28
288	Macrokinetic analysis of MTBE-synthesis in chemical potentials. *Chemical Engineering Science*, **1994**, 49, 3077-3089	4.4	28
287	Two-Step Reactive Distillation Process for Cyclohexanol Production from Cyclohexene. *Industrial & Engineering Chemistry Research*, **2009**, 48, 9534-9545	3.9	27

286	Optimal design of solvents for extractive reaction processes. *AICHE Journal*, **2016**, 62, 3238-3249	3.6	27
285	Probabilistic reactor design in the framework of elementary process functions. *Computers and Chemical Engineering*, **2016**, 94, 45-59	4	26
284	The Electro-Oxidation of H2, CO in a Model PEM Fuel Cell: Oscillations, Chaos, Pulses. *Journal of the Electrochemical Society*, **2013**, 160, F436-F446	3.9	26
283	Continuous production of CO from CO2 by RWGS chemical looping in fixed and fluidized bed reactors. *Chemical Engineering Journal*, **2018**, 336, 278-296	14.7	25
282	MaxSynBio: Wege zur Synthese einer Zelle aus nicht lebenden Komponenten. *Angewandte Chemie*, **2018**, 130, 13566-13577	3.6	25
281	Thermodynamic analysis and optimization of RWGS processes for solar syngas production from CO2. *AICHE Journal*, **2017**, 63, 15-22	3.6	24
280	Direct hybrid glucose/oxygen enzymatic fuel cell based on tetrathiafulvalene tetracyanoquinodimethane charge transfer complex as anodic mediator. *Journal of Power Sources*, **2011**, 196, 9260-9269	8.9	24
279	Selectivity Engineering with Reactive Distillation for Dimerization of C4 Olefins: Experimental and Theoretical Studies. *Industrial & Engineering Chemistry Research*, **2007**, 46, 3024-3034	3.9	24
278	Theoretical investigation of steady state multiplicities in solid oxide fuel cells*. *Journal of Applied Electrochemistry*, **2006**, 36, 265-275	2.6	24
277	Activity evaluation of a catalytic distillation packing for MTBE production. *Chemical Engineering and Technology*, **1993**, 16, 279-289	2	24
276	Measurement and simulation of mass transfer and backmixing behavior in a gas-liquid helically coiled tubular reactor. *Chemical Engineering Science*, **2017**, 170, 410-421	4.4	23
275	Modellgestützter Reaktorentwurf auf Basis der optimalen Reaktionsführung. *Chemie-Ingenieur-Technik*, **2011**, 83, 420-426	0.8	23
274	TRANSWESD: inferring cellular networks with transitive reduction. *Bioinformatics*, **2010**, 26, 2160-8	7.2	23
273	Operating Behavior and Scale-Up of an ECPrOx Unit for CO Removal from Reformate for PEM Fuel Cell Application. *Journal of the Electrochemical Society*, **2009**, 156, B1267	3.9	23
272	Light-Driven ATP Regeneration in Diblock/Grafted Hybrid Vesicles. *ChemBioChem*, **2020**, 21, 2149-2160	3.8	22
271	Constructing artificial respiratory chain in polymer compartments: Insights into the interplay between oxidase and the membrane. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 15006-15017	11.5	22
270	Energy-efficient chlorine production by gas-phase HCl electrolysis with oxygen depolarized cathode. *Electrochemistry Communications*, **2013**, 34, 320-322	5.1	22
269	Nonlinear Frequency Response Analysis of the Ferrocyanide Oxidation Kinetics. Part I. A Theoretical Analysis. *Journal of Physical Chemistry C*, **2011**, 115, 17341-17351	3.8	22

268	Kinetics study of propyl acetate synthesis reaction catalyzed by Amberlyst 15. *International Journal of Chemical Kinetics*, **2007**, 39, 245-253	1.4	22
267	Valorization of the aqueous phase obtained from hydrothermally treated Dunaliella salina remnant biomass. *Bioresource Technology*, **2016**, 219, 64-71	11	22
266	Rational design of double salt ionic liquids as extraction solvents: Separation of thiophene/n-octane as example. *AICHE Journal*, **2019**, 65, e16625	3.6	21
265	Reactor-network synthesis via flux profile analysis. *Chemical Engineering Journal*, **2018**, 335, 1018-1030	14.7	21
264	An alternative method for parameter identification from temperature programmed reduction (TPR) data. *Chemical Engineering Science*, **2008**, 63, 4776-4788	4.4	21
263	Equilibrium and rate-based approaches to liquid–liquid phase splitting calculations. *Computers and Chemical Engineering*, **2005**, 30, 277-284	4	21
262	Mass transfer effects on kinetics of nonideal liquid phase ethyl tert-butyl ether formation. *Chemical Engineering and Technology*, **1995**, 18, 269-277	2	21
261	Integrated reaction–extraction process for the hydroformylation of long-chain alkenes with a homogeneous catalyst. *Computers and Chemical Engineering*, **2017**, 105, 212-223	4	20
260	Oscillations and Pattern Formation in a PEM Fuel Cell with Pt/Ru Anode Exposed to H_2/CO Mixtures. *Journal of the Electrochemical Society*, **2010**, 157, B1521	3.9	20
259	Nanodroplet cluster formation in ionic liquid microemulsions. *ChemPhysChem*, **2008**, 9, 1603-9	3.2	20
258	Process Analysis for Dimerization of Isobutene by Reactive Distillation. *Industrial & Engineering Chemistry Research*, **2006**, 45, 1575-1582	3.9	20
257	Theoretical and experimental study on residue curve maps of propyl acetate synthesis reaction. *Chemical Engineering Science*, **2005**, 60, 3363-3371	4.4	20
256	Influence of molybdenum on the stability of iron oxide materials for hydrogen production with cyclic water gas shift process. *Materials Chemistry and Physics*, **2011**, 129, 1089-1095	4.4	19
255	Analysis of Spatio-temporal Pattern Formation in a PEM Fuel Cell with Pt/Ru Anode Exposed to H_2/CO Mixtures. *Journal of the Electrochemical Society*, **2011**, 158, B44	3.9	19
254	Discrete bivariate population balance modelling of heteroaggregation processes. *Journal of Colloid and Interface Science*, **2009**, 336, 551-64	9.3	19
253	Multifunktionale Reaktoren. *Chemie-Ingenieur-Technik*, **1997**, 69, 613-622	0.8	19
252	Size and distribution prediction for nanoparticles produced by microemulsion precipitation: A Monte Carlo simulation study. *Nanotechnology*, **2005**, 16, S429-34	3.4	19
251	Reactive separation of isobutene from C4 crack fractions by catalytic distillation processes. *Separation and Purification Technology*, **2002**, 26, 147-163	8.3	19

250	Feasibility of an Electrochemical Membrane Reactor for the Partial Oxidation of n-Butane to Maleic Anhydride. *Industrial & Engineering Chemistry Research*, **2004**, 43, 4551-4558	3.9	19
249	Dynamic flux balance modeling to increase the production of high-value compounds in green microalgae. *Biotechnology for Biofuels*, **2016**, 9, 165	7.8	19
248	Helically coiled segmented flow tubular reactor for the hydroformylation of long-chain olefins in a thermomorphic multiphase system. *Chemical Engineering Journal*, **2019**, 377, 120060	14.7	19
247	Understanding PEM fuel cell dynamics: The reversal curve. *International Journal of Hydrogen Energy*, **2017**, 42, 15818-15827	6.7	18
246	Artificial Organelles for Energy Regeneration. *Advanced Biology*, **2019**, 3, e1800323	3.5	18
245	Polymer-Based Module for NAD Regeneration with Visible Light. *ChemBioChem*, **2019**, 20, 2593-2596	3.8	18
244	Nonlinear frequency response analysis of dehydration phenomena in polymer electrolyte membrane fuel cells. *International Journal of Hydrogen Energy*, **2012**, 37, 7689-7701	6.7	18
243	Evaluation of Different Process Concepts for the Indirect Hydration of Cyclohexene to Cyclohexanol. *Organic Process Research and Development*, **2013**, 17, 343-358	3.9	18
242	Nonlinear frequency response analysis for the diagnosis of carbon monoxide poisoning in PEM fuel cell anodes. *Journal of Applied Electrochemistry*, **2011**, 41, 1021-1032	2.6	18
241	Electrochemical membrane reactors for sustainable chlorine recycling. *Membranes*, **2012**, 2, 510-28	3.8	18
240	Solid electrolyte membrane reactor for controlled partial oxidation of hydrocarbons: Model and experimental validation. *Catalysis Today*, **2005**, 104, 138-148	5.3	18
239	Dynamic Model of a Cross-Flow Molten Carbonate Fuel Cell with Direct Internal Reforming. *Journal of the Electrochemical Society*, **2005**, 152, A2217	3.9	18
238	Transformation of remnant algal biomass to 5-HMF and levulinic acid: influence of a biphasic solvent system.. *RSC Advances*, **2020**, 10, 24753-24763	3.7	17
237	Autonomous Voltage Oscillations in a Direct Methanol Fuel Cell. *Electrochimica Acta*, **2016**, 212, 545-552	6.7	17
236	A dynamic growth model of Dunaliella salina: parameter identification and profile likelihood analysis. *Bioresource Technology*, **2014**, 173, 21-31	11	17
235	Nonlinear Frequency Response Analysis of the Ferrocyanide Oxidation Kinetics. Part II. Measurement Routine and Experimental Validation. *Journal of Physical Chemistry C*, **2011**, 115, 17352-17358	3.8	17
234	Optimization of Reforming Catalyst Distribution in a Cross-Flow Molten Carbonate Fuel Cell with Direct Internal Reforming. *Industrial & Engineering Chemistry Research*, **2005**, 44, 3522-3528	3.9	17
233	Investigation of electrochemical oxidation of methanol in a cyclone flow cell. *Electrochimica Acta*, **2004**, 49, 2179-2187	6.7	17

232	Reactor configurations for biogas plants – a model based analysis. *Chemical Engineering Science*, **2013**, 104, 413-426	4.4	16
231	Optimal Reactor Design via Flux Profile Analysis for an Integrated Hydroformylation Process. *Industrial & Engineering Chemistry Research*, **2017**, 56, 11507-11518	3.9	16
230	Modelling (vapour + liquid) and (vapour + liquid + liquid) equilibria of {water (H2O) + methanol (MeOH) + dimethyl ether (DME) + carbon dioxide (CO2)} quaternary system using the Peng–Robinson EoS with Wong–Sandler mixing rule. *Journal of Chemical Thermodynamics*, **2011**, 43, 2002-2014	2.9	16
229	The S-Shaped Negative Differential Resistance during the Electrooxidation of H2/CO in Polymer Electrolyte Membrane Fuel Cells: Modeling and Experimental Proof. *Journal of Physical Chemistry C*, **2011**, 115, 25315-25329	3.8	16
228	Oxidative dehydrogenation of ethane in an electrochemical packed-bed membrane reactor: Model and experimental validation. *Chemical Engineering Journal*, **2009**, 145, 385-392	14.7	16
227	Polymer Electrolyte Fuel Cell Degradation Mechanisms and Their Diagnosis by Frequency Response Analysis Methods: A Review. *Energies*, **2020**, 13, 5825	3.1	16
226	Diagnostic concept for dynamically operated biogas production plants. *Renewable Energy*, **2016**, 96, 479-489		16
225	Efficient formulation of crystal shape evolution equations. *Chemical Engineering Science*, **2012**, 84, 85-99	4.4	15
224	Nanoparticle precipitation in microemulsions: Population balance model and identification of bivariate droplet exchange kernel. *Journal of Colloid and Interface Science*, **2010**, 342, 361-71	9.3	15
223	Impact of electrode kinetics on the dynamic response of a DMFC to change of methanol feed concentration. *Journal of Power Sources*, **2007**, 165, 138-151	8.9	15
222	VLE and LLE Data Set for the System Cyclohexane + Cyclohexene + Water + Cyclohexanol + Formic Acid + Formic Acid Cyclohexyl Ester. *Journal of Chemical & Engineering Data*, **2005**, 50, 1277-1282	2.8	15
221	Synthesis of tertiary amyl methyl ether (TAME): Equilibrium of the multiple reactions. *Chemical Engineering and Technology*, **1995**, 18, 110-117	2	15
220	Quantitative single cell analysis uncovers the life/death decision in CD95 network. *PLoS Computational Biology*, **2018**, 14, e1006368	5	15
219	Dynamic optimization of constrained semi-batch processes using Pontryagin's minimum principle—An effective quasi-Newton approach. *Computers and Chemical Engineering*, **2017**, 99, 135-144	4	14
218	Directed Growth of Biomimetic Microcompartments. *Advanced Biology*, **2019**, 3, e1800314	3.5	14
217	Spontaneous oscillations of cell voltage, power density, and anode exit CO concentration in a PEM fuel cell. *Physical Chemistry Chemical Physics*, **2011**, 13, 18179-85	3.6	14
216	Modeling of crystal morphology distributions. Towards crystals with preferred asymmetry. *Chemical Engineering Science*, **2010**, 65, 5676-5686	4.4	14
215	Importance of Irreversible Thermodynamics for Liquid Phase Ion Exchange Catalysis: Experimental Verification for MTBE-Synthesis. *Chemical Engineering Science*, **1992**, 47, 2733-2738	4.4	14

214	Neural recommender system for the activity coefficient prediction and UNIFAC model extension of ionic liquid-solute systems. *AICHE Journal*, **2021**, 67, e17171	3.6	14
213	Concentration-alternating frequency response: A new method for studying polymer electrolyte membrane fuel cell dynamics. *Electrochimica Acta*, **2017**, 243, 53-64	6.7	13
212	NMPC using Pontryagin's Minimum Principle-Application to a two-phase semi-batch hydroformylation reactor under uncertainty. *Computers and Chemical Engineering*, **2018**, 108, 47-56	4	13
211	Flow cytometry enables dynamic tracking of algal stress response: A case study using carotenogenesis in Dunaliella salina. *Algal Research*, **2016**, 13, 227-234	5	13
210	Alternating electron transfer mechanism in the case of high-performance tetrathiafulvalene-tetracyanoquinodimethane enzymatic electrodes. *Journal of Electroanalytical Chemistry*, **2013**, 690, 68-73	4.1	13
209	Singular points of reactive distillation systems. *AICHE Journal*, **2004**, 50, 2866-2876	3.6	13
208	Analysis of mass transport processes in the anodic porous transport layer in PEM water electrolysers. *International Journal of Hydrogen Energy*, **2019**, 44, 28077-28087	6.7	12
207	Fast evaluation of univariate aggregation integrals on equidistant grids. *Computers and Chemical Engineering*, **2015**, 74, 115-127	4	12
206	Miniemulsion-Based Process for Controlling the Size and Shape of Zinc Oxide Nanoparticles. *Industrial & Engineering Chemistry Research*, **2015**, 54, 10293-10300	3.9	12
205	Energy and operating cost assessment of competing harvesting methods for D. salina in a β-carotene production process. *Algal Research*, **2015**, 12, 161-169	5	12
204	Prediction of multicomponent phase behavior of CO2-expanded liquids using CEoS/GE models and comparison with experimental data. *Journal of Supercritical Fluids*, **2012**, 67, 41-52	4.2	12
203	Crystal Population Growth in a Continuous Helically Coiled Flow Tube Crystallizer. *Chemical Engineering and Technology*, **2017**, 40, 1584-1590	2	12
202	Impact of the Gold Support on the Electrocatalytic Oxidation of Sugars at Enzyme-Modified Electrodes. *Electroanalysis*, **2011**, 23, 927-930	3	12
201	The CO adsorption on a Fe2O3-Ce0.5Zr0.5O2 catalyst studied by TPD, isotope exchange and FTIR spectroscopy. *Journal of Molecular Catalysis A*, **2008**, 283, 43-51		12
200	The influence of a self-assembled monolayer on the activity of rough gold for glucose oxidation. *Electrochemistry Communications*, **2008**, 10, 1307-1310	5.1	12
199	Bifurcation analysis of reactive distillation systems with liquid-phase splitting. *Computers and Chemical Engineering*, **2002**, 26, 1459-1471	4	12
198	Partial oxidation of n-butane in a solid electrolyte membrane reactor: Periodic and steady-state operations. *Applied Catalysis A: General*, **2005**, 285, 86-95	5.1	12
197	Screening of functional solvent system for automatic aldehyde and ketone separation in aldol reaction: A combined COSMO-RS and experimental approach. *Chemical Engineering Journal*, **2020**, 385, 123399	14.7	12

196	Porosity and Structure of Hierarchically Porous Ni/Al2O3 Catalysts for CO2 Methanation. *Catalysts*, **2020**, 10, 1471	4	12
195	The FluxMax approach for simultaneous process synthesis and heat integration: Production of hydrogen cyanide. *AICHE Journal*, **2019**, 65, e16554	3.6	11
194	Compartments for Synthetic Cells: Osmotically Assisted Separation of Oil from Double Emulsions in a Microfluidic Chip. *ChemBioChem*, **2019**, 20, 2604-2608	3.8	11
193	Data Driven Conceptual Process Design for the Hydroformylation of 1-Dodecene in a Thermomorphic Solvent System. *Industrial & Engineering Chemistry Research*, **2015**, 54, 6761-6771	3.9	11
192	Linear Programming Approach for Structure Optimization of Renewable-to-Chemicals (R2Chem) Production Networks. *Industrial & Engineering Chemistry Research*, **2018**, 57, 9889-9902	3.9	11
191	Multiscale Simulation of the Indirect Internal Reforming Unit (IIR) in a Molten Carbonate Fuel Cell (MCFC). *Industrial & Engineering Chemistry Research*, **2008**, 47, 4332-4341	3.9	11
190	Effect of polyvinylpyrrolidone on the microstructure of 1-butyl-3-methylimidazolium tetrafluoroborate/Triton X-100/cyclohexane microemulsions. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2008**, 329, 146-152	5.1	11
189	CFD modelling of BaSO4 precipitation inside microemulsion droplets in a semi-batch reactor. *Chemical Engineering Journal*, **2008**, 138, 498-509	14.7	11
188	Comparison of Reactive Distillation with Process Alternatives for the Isobutene Dimerization Reaction. *Industrial & Engineering Chemistry Research*, **2006**, 45, 2707-2714	3.9	11
187	Feasibility analysis of membrane reactors discovery of reactive arheotropes. *Catalysis Today*, **2005**, 104, 360-371	5.3	11
186	Model-based analysis of a gas/vapor liquid microchannel membrane contactor. *AICHE Journal*, **2015**, 61, 2240-2256	3.6	10
185	Hybrid Semi-parametric Modeling in Separation Processes: A Review. *Chemie-Ingenieur-Technik*, **2020**, 92, 842-855	0.8	10
184	Structure optimization of power-to-chemicals (P2C) networks by linear programming for the economic utilization of renewable surplus energy. *Computer Aided Chemical Engineering*, **2016**, 1551-1556	0.6	10
183	Quantification of produced hydrogen in a cyclic water gas shift process with Mo stabilized iron oxide. *Fuel Processing Technology*, **2014**, 128, 36-42	7.2	10
182	Combined Branch and Bound Method and Exergy Analysis for Energy System Design. *Industrial & Engineering Chemistry Research*, **2012**, 51, 14428-14437	3.9	10
181	Model-based development of optimal reaction concepts for plant wide process intensification. *Computer Aided Chemical Engineering*, **2012**, 31, 150-154	0.6	10
180	Experimental quantification and modelling of reaction zones in a cyclic watergas shift reactor. *International Journal of Hydrogen Energy*, **2012**, 37, 2195-2203	6.7	10
179	Development of a Novel Catalytic Distillation Process for Cyclohexanol Production: Mini Plant Experiments and Complementary Process Simulations. *Organic Process Research and Development*, **2011**, 15, 527-539	3.9	10

178	Optimal control solutions for crystal shape manipulation. *Computer Aided Chemical Engineering*, **2010**, 28, 751-756	0.6	10
177	-matrix methods for linear and quasi-linear integral operators appearing in population balances. *Computers and Chemical Engineering*, **2007**, 31, 745-759	4	10
176	New processes for recovery of acetic acid from waste water. *Clean Technologies and Environmental Policy*, **2008**, 10, 245-254	4.3	10
175	Evaluation of COSMO-RS for solid‑liquid equilibria prediction of binary eutectic solvent systems. *Green Energy and Environment*, **2021**, 6, 371-379	5.7	10
174	En route to dynamic life processes by SNARE-mediated fusion of polymer and hybrid membranes. *Nature Communications*, **2021**, 12, 4972	17.4	10
173	POD-DEIM for efficient reduction of a dynamic 2D catalytic reactor model. *Computers and Chemical Engineering*, **2017**, 106, 777-784	4	9
172	Disorientation angle distribution of primary particles in potash alum aggregates. *Journal of Crystal Growth*, **2017**, 467, 93-106	1.6	9
171	Reduction of microkinetic reaction models for reactor optimization exemplified for hydrogen production from methane. *Chemical Engineering Journal*, **2015**, 281, 981-994	14.7	9
170	UPLC-MS analysis of Chlamydomonas reinhardtii and Scenedesmus obliquus lipid extracts and their possible metabolic roles. *Journal of Applied Phycology*, **2015**, 27, 1149-1159	3.2	9
169	Transmembrane NADH Oxidation with Tetracyanoquinodimethane. *Langmuir*, **2018**, 34, 5435-5443	4	9
168	A Short-Cut Method for the Quantification of Crystallization Kinetics. 1. Method Development. *Crystal Growth and Design*, **2016**, 16, 6743-6755	3.5	9
167	Improved CO Tolerance With PtRu Anode Catalysts in ABPBI Based High Temperature Proton Exchange Membrane Fuel Cells. *Journal of Fuel Cell Science and Technology*, **2012**, 9,		9
166	Steady-state and forced-periodic operation of solid electrolyte membrane reactors for selective oxidation of n-butane to maleic anhydride. *Chemical Engineering Science*, **2007**, 62, 5663-5668	4.4	9
165	Partial Oxidation of n-Butane in a Solid Electrolyte Membrane Reactor. *Journal of the Electrochemical Society*, **2006**, 153, D21	3.9	9
164	Conceptual design aspects of reactive distillation processes for ideal binary mixtures. *Chemical Engineering and Processing: Process Intensification*, **2003**, 42, 191-200	3.7	9
163	Sustainability of green solvents ‑review and perspective. *Green Chemistry*, **2022**, 24, 410-437	10	9
162	Synthetic Methane from CO2: Dynamic Optimization of the Sabatier Process for Power-to-Gas Applications. *Computer Aided Chemical Engineering*, **2015**, 37, 1157-1162	0.6	8
161	Modellbasierte Ermittlung der optimalen Reaktionsführung für integrierte Mehrphasenprozesse. *Chemie-Ingenieur-Technik*, **2014**, 86, 1080-1087	0.8	8

160	Avidity of influenza virus: model-based identification of adsorption kinetics from surface plasmon resonance experiments. *Journal of Chromatography A*, **2014**, 1326, 125-9	4.5	8
159	Mass transfer model of triethylamine across the n-decane/water interface derived from dynamic interfacial tension experiments. *Langmuir*, **2012**, 28, 6803-15	4	8
158	Multiscale modelling strategy for structured catalytic reactors. *Chemical Engineering Science*, **2011**, 66, 4389-4402	4.4	8
157	Biomass-Based Fuel Cell Power Plants: Evaluation of Novel Reactors and Process Designs. *Industrial & Engineering Chemistry Research*, **2010**, 49, 10859-10875	3.9	8
156	A method for rough estimation of the catalyst surface area in a fuel cell. *Journal of Applied Electrochemistry*, **2009**, 39, 213-225	2.6	8
155	The gas diffusion layer in polymer electrolyte membrane fuel cells: A process model of the two-phase flow. *International Journal of Hydrogen Energy*, **2011**, 36, 1637-1653	6.7	8
154	Conceptual Analysis of a Cyclic Water Gas Shift Reactor. *International Journal of Chemical Reactor Engineering*, **2008**, 6,	1.2	8
153	Reduced discrete population balance model for precipitation of barium sulfate nanoparticles in non-ionic microemulsions. *Chemical Engineering Journal*, **2008**, 143, 314-325	14.7	8
152	Multiple Product Solutions of tert-Butyl Alcohol Dehydration in Reactive Distillation. *Industrial & Engineering Chemistry Research*, **2006**, 45, 1613-1621	3.9	8
151	Model-based optimal design of phase change ionic liquids for efficient thermal energy storage. *Green Energy and Environment*, **2021**, 6, 392-404	5.7	8
150	Integrated ionic liquid and rate-based absorption process design for gas separation: Global optimization using hybrid models. *AICHE Journal*, **2021**, 67, e17340	3.6	8
149	Toward Fast Dynamic Optimization: An Indirect Algorithm That Uses Parsimonious Input Parameterization. *Industrial & Engineering Chemistry Research*, **2018**, 57, 10038-10048	3.9	8
148	Analysis of a novel chlorine recycling process based on anhydrous HCl oxidation. *Electrochimica Acta*, **2014**, 123, 387-394	6.7	7
147	Model-based prediction of optimal conditions for 1-octene hydroformylation. *Chemical Engineering Science*, **2014**, 115, 58-68	4.4	7
146	Feasibility Study of the Oxidative Dehydrogenation of Ethane in an Electrochemical Packed-Bed Membrane Reactor. *Industrial & Engineering Chemistry Research*, **2007**, 46, 8665-8673	3.9	7
145	Conceptual design of the integration of the reforming process in high temperature fuel cells. *Journal of Power Sources*, **2005**, 145, 40-49	8.9	7
144	Productivity versus product quality: Exploring the limits of autothermal microchannel reactors in methane steam reforming. *Chemical Engineering Journal*, **2019**, 377, 120048	14.7	7
143	Recovery and Separation of Carbohydrate Derivatives from the Lipid Extracted Alga Dunaliella by Mild Liquefaction. *ACS Sustainable Chemistry and Engineering*, **2017**, 5, 588-595	8.3	6

142	Optimal Reactor Design for the Hydroformylation of Long Chain Alkenes in Biphasic Liquid Systems. *Computer Aided Chemical Engineering*, **2011**, 1246-1250	0.6	6
141	Dimension reduction of bivariate population balances using the quadrature method of moments. *Computers and Chemical Engineering*, **2011**, 35, 50-62	4	6
140	Simultaneous Hydrogenation and Isomerization of Diisobutylenes over Pd-Doped Ion-Exchange Resin Catalyst. *Industrial & Engineering Chemistry Research*, **2009**, 48, 10857-10863	3.9	6
139	The impact of interfacial mass transfer on the feasible products of countercurrent reactive separation processes. *Separation and Purification Technology*, **2004**, 34, 201-211	8.3	6
138	Design and operation of a membrane reactor for electrochemical gas purification. *Chemical Engineering Science*, **1999**, 54, 2937-2945	4.4	6
137	The FluxMax approach: Simultaneous flux optimization and heat integration by discretization of thermodynamic state space illustrated on methanol synthesis process. *Chemical Engineering Science*, **2020**, 215, 115382	4.4	6
136	Bottom-Up Synthesis of Artificial Cells: Recent Highlights and Future Challenges. *Annual Review of Chemical and Biomolecular Engineering*, **2021**, 12, 287-308	8.9	6
135	Material development and process optimization for gas-phase hydrogen chloride electrolysis with oxygen depolarized cathode. *Journal of Applied Electrochemistry*, **2016**, 46, 755-767	2.6	6
134	Computer Aided Design of Green Thermomorphic Solvent Systems for Homogeneous Catalyst Recovery. *Computer Aided Chemical Engineering*, **2018**, 1783-1788	0.6	5
133	A Dynamic Method for Computing Thermodynamic Equilibria in Process Simulation. *Computer Aided Chemical Engineering*, **2015**, 37, 299-304	0.6	5
132	The kinetics of the hydrogen chloride oxidation. *Journal of the Serbian Chemical Society*, **2013**, 78, 2115-2130	1.3	5
131	Optimal design of nonlinear temperature programmed reduction experiments. *AICHE Journal*, **2011**, 57, 2888-2901	3.6	5
130	Nonlinear dynamics of continuous precipitation reactors: A model based analysis. *Chemical Engineering Science*, **2007**, 62, 4896-4902	4.4	5
129	Activity and Selectivity of Macroporous Ion Exchange Catalysts for the Etherification of Olefins. *Chemical Engineering and Technology*, **1999**, 22, 33-37	2	5
128	CO2 methanation process synthesis by superstructure optimization. *Journal of CO2 Utilization*, **2020**, 40, 101228	7.6	5
127	Hybrid Data-Driven and Mechanistic Modeling Approaches for Multiscale Material and Process Design. *Engineering*, **2021**, 7, 1231-1231	9.7	5
126	Systematic Selection of Green Solvents and Process Optimization for the Hydroformylation of Long-Chain Olefines. *Processes*, **2019**, 7, 882	2.9	5
125	β-Carotene extraction from Dunaliella salina by supercritical CO2. *Journal of Applied Phycology*, **2021**, 33, 1435-1445	3.2	5

124	Mechanisms behind overshoots in mean cluster size profiles in aggregation-breakup processes. *Journal of Colloid and Interface Science*, **2018**, 528, 336-348	9.3	5
123	Energy-Efficient Gas-Phase Electrolysis of Hydrogen Chloride. *Chemie-Ingenieur-Technik*, **2019**, 91, 795-808	0.8	4
122	Symmetry Breaking and Emergence of Directional Flows in Minimal Actomyosin Cortices. *Cells*, **2020**, 9,	7.9	4
121	Selectivity and Sustainability of Electroenzymatic Process for Glucose Conversion to Gluconic Acid. *Catalysts*, **2020**, 10, 269	4	4
120	Computationally efficient NMPC for batch and semi-batch processes using parsimonious input parameterization. *Journal of Process Control*, **2018**, 66, 12-22	3.9	4
119	Integrated Process and Ionic Liquid Design by Combining Flowsheet Simulation with Quantum-Chemical Solvent Screening. *Computer Aided Chemical Engineering*, **2018**, 44, 2167-2172	0.6	4
118	Stochastic-deterministic population balance modeling and simulation of a fluidized bed crystallizer experiment. *Chemical Engineering Science*, **2019**, 208, 115102	4.4	4
117	Method of moments over orthogonal polynomial bases. *Chemical Engineering Science*, **2014**, 119, 295-309	4.4	4
116	Co-solvent intensification effect on aromatic alcohol oxidation. *Catalysis Communications*, **2012**, 28, 143-146	3.6	4
115	Process Intensification, 1. Fundamentals and Molecular Level **2011**,		4
114	Dynamics of reactive distillation processes with potential liquid phase splitting based on equilibrium stage models. *Computers and Chemical Engineering*, **2009**, 33, 590-597	4	4
113	Model Based Prediction of Crystal Shape Distributions. *Computer Aided Chemical Engineering*, **2009**, 26, 141-146	0.6	4
112	A mass integration concept for high temperature fuel cell plants. *International Journal of Hydrogen Energy*, **2011**, 36, 7240-7250	6.7	4
111	Advanced Study of Non-Uniform Cell Voltage Distribution for a PEMFC Stack. *Journal of Fuel Cell Science and Technology*, **2012**, 9,		4
110	Tracking the clustering dynamics in ternary particle mixtures by flow cytometry. *Powder Technology*, **2010**, 202, 185-189	5.2	4
109	Geometrically Locating Azeotropes in Ternary Systems. *Industrial & Engineering Chemistry Research*, **2005**, 44, 3709-3719	3.9	4
108	Die Reaktivdestillation: Moderne Trenn- und Reaktionstechniken. *Chemie in Unserer Zeit*, **2003**, 37, 268-278	0.1	4
107	Fusion-Induced Growth of Biomimetic Polymersomes: Behavior of Poly(dimethylsiloxane)-Poly(ethylene oxide) Vesicles in Saline Solutions Under High Agitation. *Macromolecular Rapid Communications*, **2021**, e2100712	4.8	4

106	Mixed-Integer Linear Programming (MILP) Approach for the Synthesis of Efficient Power-to-Syngas Processes. *Frontiers in Energy Research*, **2020**, 8,	3.8	4
105	Surrogate Modeling for Liquid⬜liquid Equilibria Using a Parameterization of the Binodal Curve. *Processes*, **2019**, 7, 753	2.9	4
104	Cyclic operation of a semi-batch reactor for the hydroformylation of long-chain olefins and integration in a continuous production process. *Chemical Engineering Journal*, **2019**, 377, 120453	14.7	4
103	Identification of Key Transport Phenomena in High-Temperature Reactors: Flow and Heat Transfer Characteristics. *Industrial & Engineering Chemistry Research*, **2018**, 57, 15884-15897	3.9	4
102	Electrochemical gas phase oxidation of hydrogen chloride to chlorine: Model-based analysis of transport and reaction mechanisms. *Electrochimica Acta*, **2019**, 324, 134780	6.7	3
101	Miniplant-Scale Evaluation of a Semibatch-Continuous Tandem Reactor System for the Hydroformylation of Long-Chain Olefins. *Industrial & Engineering Chemistry Research*, **2019**, 58, 2471-2480	3.9	3
100	Rational selection of experimental readout and intervention sites for reducing uncertainties in computational model predictions. *BMC Bioinformatics*, **2015**, 16, 13	3.6	3
99	Computationally Efficient Steady-State Process Simulation by Applying a Simultaneous Dynamic Method. *Computer Aided Chemical Engineering*, **2016**, 38, 517-522	0.6	3
98	Time-minimal set point transition for nonlinear SISO systems under different constraints. *Automatica*, **2020**, 114, 108806	5.7	3
97	Economic linear objective function approach for structure optimization of renewables-to-chemicals (R2Chem) networks. *Computer Aided Chemical Engineering*, **2017**, 40, 1975-1980	0.6	3
96	Image-based analytical crystal shape computation exemplified for potassium dihydrogen phosphate (KDP). *Chemical Engineering Science*, **2016**, 139, 61-74	4.4	3
95	Carotenoid Production Process Using Green Microalgae of the Dunaliella Genus: Model-Based Analysis of Interspecies Variability. *Industrial & Engineering Chemistry Research*, **2017**, 56, 12888-12898	3.9	3
94	Efficient simulation of intrinsic, extrinsic and external noise in biochemical systems. *Bioinformatics*, **2017**, 33, i319-i324	7.2	3
93	Computer-aided design of solvents for the recovery of a homogeneous catalyst used for alkene hydroformylation. *Computer Aided Chemical Engineering*, **2015**, 37, 2075-2080	0.6	3
92	Multi-Level Design of Process Systems for Efficient Chemicals Production and Energy Conversion. *Computer Aided Chemical Engineering*, **2015**, 37, 25-34	0.6	3
91	MAXNET Energy ⬜Focusing Research in Chemical Energy Conversion on the Electrocatlytic Oxygen Evolution. *Green*, **2015**, 5,		3
90	Dynamics of bionanoparticle targeting in mixtures of human tumour cells by validated population balance modelling. *Soft Matter*, **2010**, 6, 1203	3.6	3
89	-matrix methods for quadratic integral operators appearing in population balances. *Computers and Chemical Engineering*, **2008**, 32, 1789-1809	4	3

88	Macrokinetic analysis of polarisation characteristics of gas-diffusion electrodes in contact with liquid electrolytes, Part II: Oxygen reduction as example for a higher order reaction. *Journal of Applied Electrochemistry*, **2005**, 35, 1171-1181	2.6	3
87	In silico Screening of Metal-organic Frameworks for Acetylene/ethylene Separation. *Computer Aided Chemical Engineering*, **2020**, 895-900	0.6	3
86	Increased efficiency of charge-mediated fusion in polymer/lipid hybrid membranes.. *Proceedings of the National Academy of Sciences of the United States of America*, **2022**, 119, e2122468119	11.5	3
85	Radiation-based model reduction for the optimization of high temperature tube bundle reactors: Synthesis of hydrogen cyanide. *Computers and Chemical Engineering*, **2019**, 127, 186-199	4	2
84	Model-Based Analysis of the Limiting Mechanisms in the Gas-Phase Oxidation of HCl Employing an Oxygen Depolarized Cathode. *Journal of the Electrochemical Society*, **2020**, 167, 013537	3.9	2
83	Systematic Green Solvent Selection for the Hydroformylation of Long-Chain Alkenes. *ACS Sustainable Chemistry and Engineering*, **2020**,	8.3	2
82	Techno-konomische Optimierung des Produktionsnetzwerkes f die Synthese von Ameisens ure aus erneuerbaren Ressourcen. *Chemie-Ingenieur-Technik*, **2018**, 90, 256-266	0.8	2
81	Dynamische Methode zur Berechnung thermodynamischer Gleichgewichte in reaktiven Mehrphasensystemen. *Chemie-Ingenieur-Technik*, **2016**, 88, 1617-1627	0.8	2
80	Multiscale Chemical Process Design Exemplified for a PEM Fuel Cell Process. *Chemie-Ingenieur-Technik*, **2014**, 86, 2075-2088	0.8	2
79	Emulsion-Assisted Nanoparticle Precipitation: Time Scale Analysis and Dynamic Simulation. *Industrial & Engineering Chemistry Research*, **2012**, 51, 1579-1591	3.9	2
78	Solid Electrolyte Membrane Reactors **2010**, 193-233		2
77	Parameter Identification of a Dynamic MCFC Model Using a Full-Scale Fuel Cell Plant. *Industrial & Engineering Chemistry Research*, **2008**, 47, 2728-2741	3.9	2
76	Dynamics of reactive distillation processes with potential liquid phase splitting. *Computer Aided Chemical Engineering*, **2007**, 24, 213-218	0.6	2
75	Multiplicity of VLLE equations: Case studies. *Chemical Engineering Science*, **2006**, 61, 6709-6717	4.4	2
74	Index Analysis of a Nonlinear PDAE System Describing a Molten CarbonateFuel Cell. *Proceedings in Applied Mathematics and Mechanics*, **2003**, 3, 563-564	0.2	2
73	Integrated metal rganic framework and pressure/vacuum swing adsorption process design: Descriptor optimization. *AICHE Journal*, **2022**, 68, e17524	3.6	2
72	Light-Powered Reactivation of Flagella and Contraction of Microtubule Networks: Toward Building an Artificial Cell. *ACS Synthetic Biology*, **2021**, 10, 1490-1504	5.7	2
71	Scale up of Transmembrane NADH Oxidation in Synthetic Giant Vesicles. *Bioconjugate Chemistry*, **2021**, 32, 897-903	6.3	2

70	The interaction of protein-coated bionanoparticles and surface receptors reevaluated: how important is the number of bonds?. *Soft Matter*, **2016**, 12, 6451-62	3.6	2
69	Thermodynamic Network Flow Approach for Chemical Process Synthesis. *Computer Aided Chemical Engineering*, **2018**, 43, 881-886	0.6	2
68	Decoupling oxygen and water transport dynamics in polymer electrolyte membrane fuel cells through frequency response methods based on partial pressure perturbations. *Electrochimica Acta*, **2021**, 390, 138788	6.7	2
67	Catalyst Layer Modeling **2017**, 259-285		1
66	Derivation of rate equations for equilibrium limited gas-solid reactions. *Chemical Engineering Science*, **2019**, 203, 76-85	4.4	1
65	Generalizing ODE modeling structure for multivariate systems with distributed parameters. *IFAC-PapersOnLine*, **2015**, 48, 240-247	0.7	1
64	Influence of the autonomous oscillations and the CO concentration on the performance of an ECPrOx reactor. *Electrochimica Acta*, **2017**, 251, 602-612	6.7	1
63	Physics-Based Surrogate Models for Optimal Control of a CO2 Methanation Reactor. *Computer Aided Chemical Engineering*, **2017**, 40, 127-132	0.6	1
62	Model-based Observation and Design of Crystal Shapes via Controlled Growth-Dissolution Cycles. *Computer Aided Chemical Engineering*, **2015**, 1673-1678	0.6	1
61	Process Intensification, 4. Plant Level **2011**,		1
60	Convex optimization for shape manipulation of multidimensional crystal particles. *Computer Aided Chemical Engineering*, **2011**, 855-859	0.6	1
59	Model Simulation and Analysis of Proton Incorporation into the Positive Active Mass of a Lead/Acid Battery. *Journal of the Electrochemical Society*, **2010**, 157, A243	3.9	1
58	Blended learning fitting algorithm for polarization curves of fuel cells. *International Journal of Hydrogen Energy*, **2009**, 34, 5563-5567	6.7	1
57	Steady-state multiplicity of a biogas production system based on anaerobic digestion. *Computer Aided Chemical Engineering*, **2012**, 1377-1381	0.6	1
56	Fuel Cell Power Control Based on a Master-Slave Structure: A Proton Exchange Membrane Fuel Cell Case Study. *Journal of Fuel Cell Science and Technology*, **2012**, 9,		1
55	New Concepts for the Production of High-purity Isobutene in Coupled Reactive Distillation Columns. *Chemie-Ingenieur-Technik*, **2001**, 73, 624-625	0.8	1
54	Oscillatory vapor-liquid transport phenomena in a packed reactive distillation column for fuel ether production. *The Chemical Engineering Journal and the Biochemical Engineering Journal*, **1995**, 57, 219-228		1
53	Integrated computer-aided molecular and process design: Green solvents for the hydroformylation of long-chain olefines. *Chemical Engineering Science*, **2021**, 249, 117243	4.4	1

No.	Reference		
52	Time Dependent Virus Replication in Cell Cultures. *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering*, **2009**, 651-656	0.2	1
51	Spatiotemporal pattern formation in an electrochemical membrane reactor during deep CO removal from reformate gas. *Computer Aided Chemical Engineering*, **2011**, 29, 201-205	0.6	1
50	Nonlinear Model Order Reduction for Catalytic Tubular Reactors. *Computer Aided Chemical Engineering*, **2016**, 38, 2373-2378	0.6	1
49	Computer Aided Molecular Design of Green Solvents for the Hydroformylation of Long-Chain Olefines. *Computer Aided Chemical Engineering*, **2020**, 48, 745-750	0.6	1
48	Optimal Tube Bundle Arrangements in Side-Fired Methane Steam Reforming Furnaces. *Frontiers in Energy Research*, **2020**, 8,	3.8	1
47	Energy-Efficient Distillation Processes by Additional Heat Transfer Derived From the FluxMax Approach. *Frontiers in Energy Research*, **2020**, 8,	3.8	1
46	Binding kinetics and multi-bond: Finding correlations by synthesizing interactions between ligand-coated bionanoparticles and receptor surfaces. *Analytical Biochemistry*, **2016**, 505, 8-17	3.1	1
45	Load-flexible fixed-bed reactors by multi-period design optimization. *Chemical Engineering Journal*, **2022**, 428, 130771	14.7	1
44	Numerical Methods for Coupled Population Balance Systems Applied to the Dynamical Simulation of Crystallization Processes **2020**, 475-518		0
43	Computer-aided solvent screening for the fractionation of wet microalgae biomass. *Green Chemistry*, **2021**, 23, 10014-10029	10	0
42	Comparative Screening of Organic Solvents, Ionic Liquids, and Their Binary Mixtures for Vitamin E Extraction from Deodorizer Distillate. *Chemical Engineering and Processing: Process Intensification*, **2021**, 108711	3.7	0
41	Storage of Renewable Energies via Chemical Conversion using CO2. *Computer Aided Chemical Engineering*, **2012**, 995-999	0.6	0
40	Advances in the HCl gas-phase electrolysis employing an oxygen-depolarized cathode. *Electrochimica Acta*, **2021**, 365, 137282	6.7	0
39	Rational Design of Ionic Liquid Phase-Change Material for Efficient Thermal Energy Storage. *Computer Aided Chemical Engineering*, **2021**, 191-196	0.6	0
38	Power-to-Chemicals: A Superstructure Problem for Sustainable Syngas Production. *Mathematics in Industry*, **2021**, 145-168	0.2	0
37	Set point tracking of a biogas plant coupled to a methanation reactor. *Computer Aided Chemical Engineering*, **2017**, 40, 1645-1650	0.6	
36	Particle-image-velocimetry measurements in organic liquid multiphase systems for an optimal reactor design and operation. *Journal of Visualization*, **2018**, 21, 5-17	1.6	
35	A New Process for Azeotropic Mixture Separation by Phase Behavior Tuning Using Pressurized Carbon Dioxide. *Industrial & Engineering Chemistry Research*, **2013**, 52, 15154-15164	3.9	

34	Process Optimization by Applying a Simultaneous Dynamic Method. *Computer Aided Chemical Engineering*, **2017**, 40, 2047-2052	0.6
33	Robust process design for the bioproduction of ꞵ-carotene in green microalgae. *Computer Aided Chemical Engineering*, **2015**, 2117-2122	0.6
32	Modeling of Molten Carbonate Fuel Cells **2012**, 791-817	
31	Monte Carlo simulation of shape evolution in solutions - A model study of BaSO4 precipitation. *Computer Aided Chemical Engineering*, **2012**, 30, 1163-1166	0.6
30	Dynamics of liquid-liquid systems based on linear thermodynamics of irreversible processes. *Computers and Chemical Engineering*, **2011**, 35, 630-637	4
29	Optimal design of non-linear Temperature Programmed Reduction (TPR) experiments. *Computer Aided Chemical Engineering*, **2009**, 26, 609-613	0.6
28	Modeling Heterogeneous Virus Infectiosity for Cells in Bioreactors for Vaccine Production. *Computer Aided Chemical Engineering*, **2010**, 28, 307-312	0.6
27	Dimension reduction of two-dimensional population balances based on the quadrature method of moments. *Computer Aided Chemical Engineering*, **2008**, 913-918	0.6
26	The Direct Methanol Fuel Cell (DMFC): Determination of Model Parameters. *SAE International Journal of Aerospace*, **2008**, 1, 832-842	0.3
25	Analysis of potential singular point surface of reactive stripping processes. *Chemical Engineering Science*, **2006**, 61, 1901-1912	4.4
24	Simulation of the population balance for droplet breakage in a liquid-liquid stirred tank reactor using H-matrix methods. *Computer Aided Chemical Engineering*, **2006**, 261-266	0.6
23	CFD model of a semi-batch reactor for the precipitation of nanoparticles in the droplets of a microemulsion. *Computer Aided Chemical Engineering*, **2006**, 21, 203-208	0.6
22	Multiscale CFD simulation of a methane steam reformer for optimization of the spatial catalyst distribution. *Computer Aided Chemical Engineering*, **2007**, 24, 123-128	0.6
21	Conceptual Design of Internal Reforming in High-Temperature Fuel Cells **2005**, 45-67	
20	Instabilities in High-Temperature Fuel Cells Due to Combined Heat and Charge Transport **2005**, 69-84	
19	Thermodynamic and Kinetic Effects on the Feasible Products of Reactive Distillation: A-zeo-tropes and A-rheo-tropes **2005**, 85-148	
18	Spezielle labortechnische Reaktoren: Wendelrohrreaktor. *Springer Reference Naturwissenschaften*, **2020**, 1289-1320	0.2
17	Spezielle labortechnische Reaktoren: Wendelrohrreaktor. *Springer Reference Naturwissenschaften*, **2018**, 1-33	0.2

16	Efficient simulation of heterogeneity and stochasticity in microbial processes. *Computer Aided Chemical Engineering*, **2016**, 1213-1218	0.6
15	Dynamic Optimization of Constrained Semi-Batch Processes using Pontryagin's Minimum Principle and Parsimonious Parameterization. *Computer Aided Chemical Engineering*, **2017**, 40, 2041-2046	0.6
14	Nonlinear Design of Stimulus Experiments for Optimal Discrimination of Biochemical Systems. *Computer Aided Chemical Engineering*, **2012**, 31, 540-544	0.6
13	Power-to-Syngas Processes by Reactor-Separator Superstructure Optimization. *Computer Aided Chemical Engineering*, **2020**, 48, 1387-1392	0.6
12	Design and Comparison of Optimal Reactor Concepts for the Hydroformylation of Olefins by Use of a Probabilistic Design Framework. *Computer Aided Chemical Engineering*, **2016**, 38, 1365-1370	0.6
11	Computer-Aided Screening of Deep Eutectic Solvent Systems for the Associative Extraction of α-Tocopherol from Deodorizer Distillate. *Computer Aided Chemical Engineering*, **2021**, 50, 341-346	0.6
10	Multi-Period Design Optimization of Flexible Fixed-Bed Reactors by Stoichiometry-Based Model Reduction. *Computer Aided Chemical Engineering*, **2021**, 947-952	0.6
9	Forschungsarbeiten am Institut für Verfahrenstechnik der Otto-von-Guericke-Universität Magdeburg. *Chemie-Ingenieur-Technik*, **2021**, 93, 345-352	0.8
8	Guest Editorial Special Issue on Deep Integration of Artificial Intelligence and Data Science for Process Manufacturing. *IEEE Transactions on Neural Networks and Learning Systems*, **2021**, 32, 3294-3295	10.3
7	Non-intrusive Time-POD for Optimal Control of a Fixed-Bed Reactor for CO2 Methanation. *IFAC-PapersOnLine*, **2021**, 54, 122-127	0.7
6	Closed-loop real-time optimization for unsteady operating production systems. *Journal of Process Control*, **2022**, 113, 80-95	3.9
5	Optimisation of Reforming Catalyst Distribution211-220	
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